

To Ride a Tiger: Dilemmas and challenges of secondary school geography and the high school geography project

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NEW ZEALAND GEOGRAPHERS, as their colleagues in other countries, have in recent years evinced a growing interest in problems of geographic education. Particular attention has been focused on questions of course content, prescriptions and syllabuses, and pedagogy. Geography has not been the only discipline concerned with educational reform; rather there has been an almost universal movement to change dramatically both the content and teaching of courses across the academic spectrum. This new-found interest in education can be attributed to three causes: (1) the response to the need for more effective scientific training in the recent post-Sputnik, technological period; (2) a recognition of the validity of newer pedagogic approaches, particularly those which espouse the discovery method of learning (e.g., Bruner, 1960); and (3) realisation by both students and teachers that serious weaknesses did exist in the educational system and required correction.

The reform movement has devoted a high proportion of its effort to secondary school education. In the United States particularly, the federal government has invested heavily in the development of new secondary courses and/or course units in the fields of mathematics, biology, earth science, physics, chemistry and geography. The best-known result of the geography activities was the production of the High School Geography Project's one-year course, *Geography in an Urban Age*.

The High School Geography Project has received considerable attention in New Zealand, where serious efforts are under way to reform the geography syllabus (and national testing) at fifth, sixth and seventh form levels. This has been recently manifest in numerous regional and national conferences of secondary school geography teachers. Better communication and planning between university, teachers' college and high school instructors has been established, and there are signs that the Department of Education is seriously responding to these efforts. Professional geography forums are also emphasising educational problems; the Sixth New Zealand Geography Conference volume on *Geography and Education* (ed. J. Chapman and R. J. Johnston, 1971) and the impressive educational programmes for these meetings are significant examples of this concern.

As a visitor (who also happened to participate in the development of *Geography in an Urban Age*), I have had the opportunity to meet and talk with many university and secondary school teachers and students throughout New Zealand. These discussions have often pivoted on problems posed by the possible introduction of new geography programmes into New Zealand secondary school curricula. Not surprisingly, individuals tend to come out either strongly for or against the H.S.G.P. and similar programmes which threaten the established mode of geographical training. My own feelings on the question are sometimes ambivalent, but some of the advantages and disadvantages of H.S.G.P. adoption have become clear to me during this past year in New Zealand. The purpose of this

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paper then is to summarise my personal thoughts about the educational process, particularly as it relates to the teaching of secondary school geography. Insofar as challenges and dilemmas have been created by the H.S.G.P. and other educational reforms, I will attempt to identify and evaluate them. My comments do not necessarily represent those of other American geographers who have been associated with the High School Geography Project.

THE HIGH SCHOOL GEOGRAPHY PROJECT

There is no need to review in detail the philosophy and content of the High School Geography Project. It has been widely discussed in the professional literature, including articles in New Zealand journals by Knight (1970), Renner (1970), Slater (1970) and others. Several teachers' colleges and secondary schools own and work with the completed MacMillan Company edition (1970) and particulars of the Project have been the subject of discussion at many meetings and educational conferences. It is sufficient to be reminded that four aspects of the Project distinguish it from traditional geography offerings at the secondary school level. Firstly, the course was written and designed by active researchers, by-passing the usual channels whereby new ideas and techniques slowly percolate through the universities and teachers' colleges to the high school systems. Secondly, the course relies heavily on the inquiry (or discovery) mode of learning. Thirdly, unit sequence within the course follows from the familiar to the unfamiliar; that is, because most students live in urban places, early units focus on the geography of cities and only later is the student exposed to unfamiliar landscapes or places. Fourthly, in conjunction with the problem-solving approach to learning, the use of models is emphasised.

To date the High School Geography Project's six-unit, one-year course, *Geography in an Urban Age*, has enjoyed considerable success and acceptance in schools where it has been adopted. It must be recognised, however, that it has only recently become available and that most American secondary schools have not offered geography courses for several decades. In the long run, the test of the course may not be its acceptance as a replacement for existing geography courses (schools often adopt materials simply because they are new), but rather its influence in the initiation of geography curricula where they have been absent.

In some respects, one of the most impressive impacts of the High School Geography Project has been in our teachers' colleges and universities. The leap-frogging effect inherent in production of secondary school materials by active research geographers left many university staff (and 'teachers of teachers') in an untenable, traditional posture. They had either to 'catch up' with the newly-evolving mainstream in American geography or suffer the embarrassment of not training students up to standards. Needless to say, much controversy has and will continue to be generated in this regard. I personally consider the High School programme to have been an excellent antidote to an old academic malady symptomatic in the preservation of yellowed and parchment-like lecture notes, written when we first blundered innocently from student to instructor status.

SHOULD H.S.G.P. BE ADOPTED IN NEW ZEALAND?

The High School Geography Project and other innovations in American geographic education have gained considerable currency in New Zealand. Serious thought is being given to the possible incorporation and utilisation of such materials in New Zealand secondary school curricula. I have been frequently asked if the *Geography in an Urban Age* course should be adopted here. I must admit my answer has usually been ambiguous. As an active participant in these reforms of American geographical education I am not about to denigrate the product. The course is innovative, challenges both teacher and student, and satisfies what are in my opinion four basic objectives of education. These are in my ordering of priority: (1) learning 'how to think'; (2) learning concepts; (3) learning techniques; and (4) learning information.

Thus on first reading I am tempted to suggest course adoption. It is well designed for the fifth form pupil and could provide a dramatic departure from

the encyclopaedic burden that I, at least, believe characterises the present syllabus. On the other hand, I must discourage wholesale and indiscriminate acceptance of the course. Marked dissimilarities between our educational systems must be recognised. Four examples suffice to make the point.

Firstly, there are differences of scale. New Zealand has a relatively small population, a factor which allows considerable communication and standardisation within a given professional field. But have New Zealand educators seriously contemplated the magnitude of the American educational system for which *Geography in an Urban Age* was created? In the United States in 1971 we had a total of 60.2 million students in our school systems — including 51.8 million in kindergarten through 12th grade (equivalent to your 7th form) and 8.4 million in some institution of higher education (i.e., junior colleges, colleges and universities). To educate (and sometimes baby-sit) this student population requires 91,000 elementary and secondary schools, 1,000 junior colleges and 1,400 colleges and universities. Public elementary and secondary schools employ 2,080,000 teachers — and claim they are understaffed. In addition, 5.7 million primary and secondary students and 2.2 million university students must be serviced in privately-financed institutions. As an example of the complexity of the system, Table 1 illustrates the educational pyramid in my home state of Michigan, the seventh ranked state in population.

Secondly, a significant dissimilarity between New Zealand and American systems of geographical education exists in respect to teacher training. A large

Table 1
THE 1971 EDUCATIONAL PYRAMID: STATE OF MICHIGAN*

THE 'BIG 3' STATE UNIVERSITIES	
The University of Michigan, Ann Arbor (37,000)	
Michigan State University, East Lansing (39,000)	
Wayne State University, Detroit (34,000)	
OTHER STATE UNIVERSITIES	
Eastern Michigan, Ypsilanti (19,000)	Central Michigan, Mt. Pleasant (13,300)
Western Michigan, Kalamazoo (22,000)	Northern Michigan, Marquette (7,500)
Oakland University, Rochester (7,000)	Michigan Technical University, Houghton (5,000)
FOUR-YEAR COLLEGES	
<i>State</i>	<i>Private</i>
Lake Superior State College, Sault Ste. Marie (1,400)	22 privately supported colleges, 17 of which have a religious affiliation (38,540)
Ferris State College, Ferris (8,400)	
Saginaw Valley College, Saginaw (1,800)	
Grand Valley College, Grand Rapids (3,100)	
TWO-YEAR COLLEGES	
38 Community or Junior Colleges of which 34 are publicly supported (usually at County level). Student population unknown.	
SECONDARY SCHOOLS	
<i>Public</i>	<i>Private</i>
978,000 students — 40,800 teachers	Statistics unavailable, but at least 70,000 students
ELEMENTARY SCHOOLS	
<i>Public</i>	<i>Private</i>
1,200,000 students — 46,800 teachers	Statistics unavailable, but at least 120,000 students

* Number of students given in brackets. Data based on U.S. Office of Education statistics.

proportion of secondary school geography teachers in New Zealand have received university-level training in geography and many of them have received their degrees in Geography. In the United States, only a few have been trained as geographers, and as an estimate, 80 percent of our primary and secondary school teachers have had only one or no course in the field. Thus the teaching of geography has usually been given to history or social science teachers or, in a surprising number of cases, the gridiron football coach. Only a relatively few teachers belong to the National Council for Geographic Education (our teacher and education-orientated organisation), and there are no clearly defined channels through which information, instruction and innovation may flow. Each school system is on its own and any changes in, or indeed initiation of, geography curriculum is by ad hoc arrangement. The High School Geography Project was continuously faced with these realities and *Geography in an Urban Age* was designed to accommodate inexperienced geography teachers. While it is also a viable course for trained geographers, the above pedagogic bias should not be overlooked.

Thirdly, the American system is further complicated by the fact that each state, and often each community or township, has primary decision-making control

Table 2
WHO CONTROLS THE SCHOOLS IN THE UNITED STATES?

PRIMARY AND SECONDARY SYSTEMS*			
PUBLIC		PRIVATE	
State	County	City	Township
		Parochial	Independent
		Roman Catholic	Regular
		Lutheran	Speciality:
		Episcopal	Military
		Jehovah's Witnesses	Music
		Latter Day Saints	Art
		etc.	etc.
Some combination of the above political units. Generally an elected Board of Education. Strong local control in curriculum, budget, collective bargaining, regulations, policy, etc. Parent-teacher groups often have significant influence, especially at township level.		Supported by endowments, institutional funds, gifts, tuition, etc. May be day or boarding schools.	
COLLEGES AND UNIVERSITIES*			
PUBLIC			
Ultimate governing responsibility usually in hands of an elected or politically-appointed Board of Regents. Boards seldom interfere in operation and policy except in crisis (usually political or social).			
Federal	State	County	City
Military, Naval, Air Force, Coast Guard and Merchant Marine Academies	2-Year Colleges 4-Year Colleges Universities	2-Year Colleges 4-Year Colleges	2-Year Colleges 4-Year Colleges Universities
PRIVATE			
Ultimate governing responsibility usually in hands of an elected Board of Trustees. High dependance on tuition, endowments and gifts.			
Denominational	Regular	Specialty	
2-Year Colleges 4-Year Colleges Universities	2-Year Colleges 4-Year Colleges Universities (Many schools in this category were originally denominational)	Medicine Law Theology Art Music etc.	
* Some degree of quality control is maintained by regional accreditation boards.			

over its public schools (Table 2). There is no national programme that must be adhered to as in New Zealand. The what, how and why of curricula are determined locally.

This leads to the fourth and final point: the examination systems are different. No universal examinations are given in U.S. secondary schools; rather they are given each semester for individual courses in each school.¹ Graduation from high school is based simply on successful completion of the appropriate number and type of courses. Standards vary from school to school, making it difficult to interpret grades and transcripts, although entrance to college is based primarily on these records — and once graduated from high school, the student may move on to a variety of educational situations (Fig. 1). Because each teacher writes his own exams and grades them, even the standards within one school may be uneven.

The essential point is that every nation, and perhaps every community, has specific educational needs which influence curriculum development. Geography programmes are no exception and it would be foolhardy to suggest that 15-year old students in Timaru and Jakarta must study from the same prospectus. There are, nevertheless, sufficient similarities between the so-called 'westernised nations' to advocate that a general form and philosophy (if not precise content) of geographical education should be universally applied. Although educational and academic fashions will inevitably change, I think that the currently popular mode (out of which grew the High School Geography Project) is the best for this stage of our academic evolution. In short, much is to be gained from serious evaluation, partial utilisation, and even some imitation of *Geography in an Urban Age*; but the risks of indiscriminate adoption are in my opinion not inconsiderable.

It is, I trust, obvious that I am proselytising an approach to geographical teaching and not a specific course or publication. I earlier indicated four basic objectives of education. The problem-solving approach is a viable way to achieve those goals. Let us look briefly at each of these objectives because their concurrent accomplishment is a goal we all seek in educating, regardless of subject specialisation.

LEARNING HOW TO THINK

This is the avowed primary goal of education and its practitioners. Few teachers in fact attain the goal, and most of us share the guilt of taking the easy way out, subjecting our students to rote-learning and informational inputs which reflect our own training and experience. But learning how to think requires independent effort by the student; the teacher's function is to provide guidance at the appropriate times.

The fact that most doctoral students can only with difficulty discern and define a dissertation problem is a sad commentary on our failure to teach thinking. Although this failure occurs throughout the system, corrective measures should start early in a student's career. It is generally too late to salvage a 'drone' by the time he or she has reached the university. Also, we cannot wait for the universities to do the job, because the majority of students will terminate their academic careers at the secondary school level.

Yet all we are seeking is the ability to ask an intelligent question. Problem statement is the first, and perhaps most important step, in logical inquiry — and no matter how well one has learned to 'do' an experiment or directed exercise, understanding of scientific method is lost if there is no 'sense of problem'. Once the problem is stated, the student must learn to design and execute his own research. This is accomplished by proper use of the scientific method. Thus, we should regularly expose students to situations that demand logical inquiry and thought. Each discipline must accomplish this in the context of the particular concepts, techniques and relevant information it hopes to impart.

¹ An exception is the several private colleges and state universities who use the privately administered College Board Examinations as part of their applicant evaluations.

HOW STUDENTS MOVE IN THE U.S. SYSTEM

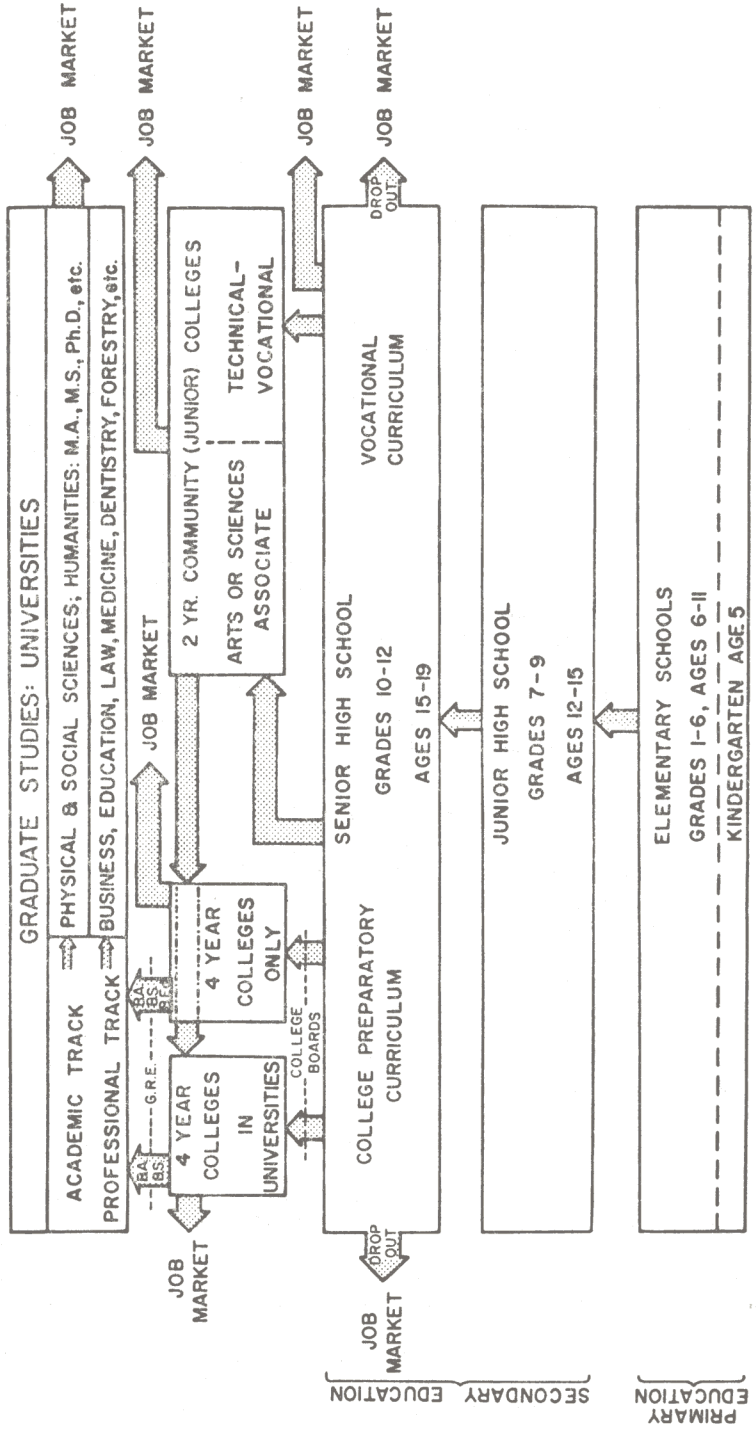


Figure 1

LEARNING CONCEPTS

There are certain basic concepts, and related laws and principles that each discipline wishes to impart to its students. It is, I hope, generally agreed that understanding these significant concepts has greater importance than acquisition of information. If, for example, a student conceptually comprehends the manner in which the earth-atmosphere system works, do we really care if he knows the mean January temperature at Muskegon, Michigan (or Hokitika, for that matter)? These data are trivial, except insofar as they are required in the problem-solving context. In any event, a good student (i.e., one who understands basic concepts and can think for himself) should be able to provide a pretty good approximation of the desired temperatures. If precision is a critical factor, he will know where to look up the answer. He may even realise that the figures in the book are not necessarily accurate and build that fact into his or her evaluation.

LEARNING TECHNIQUES AND INFORMATION

Techniques of analysis and research are merely tools whereby we describe, manipulate and interpret theoretical models and real-world data. Cartographic, mathematical and photogrammetrical techniques are commonly-used geographical tools; but we often overlook training in a most important technique — extensive and proper use of the professional literature. Learning to use techniques is necessary because it makes our work more efficient and allows us to gain insights we might otherwise have missed. Such methods should not, however, be learned for their own sake. They should follow the need to solve a problem and examine a concept. Learning rate and retention increase appreciably if technique is presented in this context.

It is obvious that I consider factual information a by-product of problem-solving and the conceptual approach. This does not mean that I am against information. There is a time in everyone's life when he must *know* things. We cannot learn everything by the discovery method, and trial and error; there simply is not enough time. Also, education cannot consist only of what the 'this year's' students find relevant and interesting.

This presents a serious pedagogic dilemma and challenge: to bury students in formally-presented concepts and facts or to let them learn a few things well to the exclusion of others? Obviously the answer lies in compromise. Information should be accrued whenever possible as a useful by-product of problem-solving efforts, but students must occasionally grit their teeth and learn concepts and facts in the traditional, painful manner. Such activities are important and the discipline they develop will later hold the student in good stead.

Equally important to this discussion of general educational objectives (space does not permit discussion of the framework and particulars of geography), it is essential that a geography syllabus at any level should have strong conceptual flavours of (1) systems explained by process, (2) an ecological (man-land) approach, and (3) an appreciation of spatial and temporal relationships.

RISKS FROM COURSE ADOPTION

It is in these latter areas, where geographic subject matter is defined, that I see the greatest risk in the institutionalised adoption of any prefabricated course or syllabus, including products of the High School Geography Project. There is always a 'high risk, high gain' aspect to innovative programmes. They are designed to replace traditional, and often stifling, secondary school prescriptions with new and relevant material. In this sense, their adoption should be encouraged. The problem is that new materials and methods, once accepted, can become a new gospel as authoritatively entrenched as the traditions they displaced. Thus, programmes which present *one* approach to geographic education, such as *Geography in an Urban Age*, may receive wide-spread acceptance to the exclusion of alternative and equally useful treatments of the subject.

The teaching community has always presented a facade which leads the public

to believe it is continuously changing and up-dating school materials. This is probably good public relations, but the hard fact is that instructors and administrators at all levels in the educational system are loath to give up their precious dogmas. It may be possible to teach an old dogma new tricks, but he will balk if you try it too many times. This is particularly true if a given programme has been institutionalised through long labours and eventual bureaucratic blessings.

This then is a major dilemma and challenge in geographical education: how can we take advantage of innovative programmes now and remain free to introduce subsequent materials as they are developed? Institutional inertia must be overcome, as well as the tremendous two-way communication lag between universities, teachers' colleges and secondary schools (this lag has probably been more serious in the United States than in New Zealand).

The problem is exacerbated by the fact that we have recently become overly-reliant on government grants to finance educational change. There is no question that educational innovation costs money, but civil servants, politicians and tax payers seldom view education as a field requiring large developmental investments on a continuous basis. Recent experience indicates that society is willing to pay the bill for major change about once every generation. This is not surprising considering that the academic community talks the public into major investments for educational reform by assuring them that the latest version is the best and final one. Thus, adoption of new materials is apt to leave us in an irrevocable position for many years. We are victims of our own inertia and the 'one shot' approach to educational budgeting.

It follows, when accepting new programmes such as *Geography in an Urban Age*, that we are as the boy who rode the tiger. Our options are unsatisfactory whether we continue the ride or decide to get off. I am not convinced, however, that the problem is insurmountable—especially in the United States where decentralisation of our educational system allows some freedom to manoeuvre. In New Zealand, where national testing rules the curriculum, the solution may be more difficult.

SOME OPTIONS

Secondary school educators should be able to select from a variety of options in geographical education. In addition to a course focusing on urban geography, there should be similarly organised courses dealing with such themes as environmental and physical geography, regional geography and cultural geography. There is a precedent for this in the several versions of biological sciences now taught in secondary schools. It is unlikely that governments will today fully support the developments of such courses, if only for obvious fiscal reasons.

There is no reason, however, that geographers should not initiate new projects on an intramural basis. That, after all, is how things used to be done. If enthusiasm can be generated amongst individuals within geography, our professional organisations certainly have the capacity to provide an intellectual forum and organisational leadership. I would further suggest that we terminate the silly practice of expecting educational change to be initiated solely from the research-orientated universities. This is a hierarchical status game and in large part responsible for the slow percolation of geographic concepts and methodologies through the system.

Many informed and interested secondary school teachers are aware of research trends. Why shouldn't they take on the responsibility for curriculum innovation? They are, after all, the persons best qualified to analyse and reform secondary school geography. There is no need to wait for the lead to come from universities and teachers' colleges. By thus forcing the issue, it is probable that greater interest and closer co-operation will be obtained from the university sector, especially when that community sees its traditional role threatened. Who knows? It might even be possible to develop a more meaningful two-way conversation, one that will both enhance geography and allow more effective presentation of our subject at all levels in the system.

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NOTES

WAIKATO SOCIAL STUDIES ASSOCIATION

The Association is gaining strength and now has a membership of over 600. Their journal *Social Studies Observer* has been well received in this new format and the cyclostyled newsletter *Broadsheet* has been broadened in scope to include a fuller account of activities. Special publications of the Association are also selling well. During the winter term 1972, in conjunction with the Department of Education, the Association organised a course for teachers on the new social studies which met one night a week over 10 weeks at Hamilton Teachers' College.

Topics for meetings during 1972 included Professor A. McNaughton, Auckland University, talking on a new approach to evaluation in social studies; Mr M. A. Mills, Palmerston North Teachers' College, on New Zealand studies in Form 1-4 social studies; Mr M. J. Stone, Auckland Secondary Teachers' College, on closed circuit television; audiovisual media in social studies from Mr P. Miles, Curriculum Development Unit, Wellington; applications of Edwin Fenton's inductive approach to teaching history in social studies teaching were discussed by Mr E. R. Doolin, Hamilton Teachers' College; and a group of teachers contributed their approaches to teaching a unit on social control. Meetings this year have included Mr Turoa Royal on social studies and the Maori child; a workshop session on the Nuffield Humanities Project materials led by Professor McNaughton and Mr David Heap of Heinemann Educational Books; and an evening on models in social

studies and geography with Mr Colin Knight of the Inspectorate in Christchurch.

President of the Association this year is Mr R. Laybourn and Secretary is Mr C. Crow, both of Hamilton Teachers' College. Enquiries about membership and publications should be addressed to the Treasurer, Miss A. Jones, Waikato Social Studies Association, P.O. Box 4137, Hamilton East.

NUFFIELD HUMANITIES PROJECT

Since 1967 the Schools Council—Nuffield Humanities Curriculum Project has been studying the problem of development of young people's understanding of controversial issues of universal human concern. The project is based on five major premises. 1. Controversial issues should be handled in the classroom with adolescents. 2. The teacher accepts the need to submit his teaching in the controversial areas to the criteria of neutrality at this stage of education; it is part of his responsibility not to promote his own view. 3. The mode of enquiry in controversial areas should have discussion, rather than instruction, as its core. 4. Discussion should protect divergence of view among participants rather than attempt to achieve consensus. 5. The teacher as chairman of the discussion should have responsibility for quality and standards in learning. This sort of approach could provide the basis for more pupil involvement and responsibility for learning in the classroom in a variety of subjects.