Curriculum change and the Schools Council Geography 14-18 Project

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Summary. *The exploratory phase of Geography 14–18 suggests that effective adaptation of geography curricula to continuing change requires more than new textbooks and syllabuses. The project's developmental strategy aims at promoting curricula which are both more scientifically rigorous and humanistic. It entails evolving new forms of in-service support for teachers and new inputs from university geographers.*

In September 1970 a Schools Council Curriculum Development Project was set up to initiate a programme of curriculum development in geography for the 14–18 age-range which would (1) offer more intellectually exacting study for more able as well as average children; and (2) contribute more substantially to general education. It was felt that geography is still often taught with an implicit emphasis on description and simplistic forms of analysis and explanation, and that the emphasis might be more on promoting the student's understanding of important concepts, models and methods of enquiry drawn on in the subject.

The project's work, which will last until 1974, is being undertaken by a team of three, financed by a Schools Council grant of £53,000 and based at the Bristol University School of Education. The first phase of its work, which is just being completed, was exploratory, and research-oriented. What follows is a dangerously condensed summary of conclusions, drawn from this phase.

Changing perspectives on curriculum development

It is possible now to draw upon a range of tried general precepts on re-designing teaching programmes. We know, for example, that traditionally-organized subject-matter can be made more intellectually challenging if it is re-analyzed in terms of (a) the root problems which gave that subject-matter structure and significance in the first place; and (b) the resultant structure of concepts and principles (see for example; Schwab, 1962; Bruner, 1966). We also know that greater clarity by both teachers and students about their objectives, and the provision of better feedback on their achievement, can rapidly improve the effectiveness of teaching (Mackenzie, 1970; Beard, 1970).

Recent progress is perhaps best exemplified by the teaching materials produced by the American High School Geography Project (HSGP). Benefiting from grants amounting to a million pounds and from the input of ideas from some of the most talented American geographers, its materials demonstrate that many key ideas in geography can be identified and translated into learning activities capable of making students think hard for themselves.

Despite this progress however, curriculum change will be no straight updating of geography teaching through an all-conquering educational technology. New teaching materials devised by outside experts have limitations. To realize their potential, the teacher must understand how the structure of ideas that they embody is related to the particular form of enquiry from which they derive. Otherwise he will be unable to question students perceptively and adapt his teaching in changing situations. The HSGP, in fact, as it became apparent how its materials were often used, turned to preparing Teacher Education Units designed to help teachers to use its materials flexibly.

Although geography teachers in this country generally have a more specialized knowledge of geography than American teachers, they have not necessarily been any better initiated into its forms of enquiry. In our experience, for example, many teachers are already using quantitative techniques unimaginatively, over-emphasizing precision rather than encouraging the search for hidden patterns and the relaxed but critical use of models. Teachers may often need to ' unlearn ' scientistic conceptions of enquiry dominated by their own school experience in the physical sciences (Ziman, 1968).

Basic philosophical questions rear their heads here. In school geography, for example, should we teach how facts demonstrate concepts and models, or how concepts and models reveal facts? Assumptions made here crucially influence teaching styles and learning experience. Need teaching be restricted to what Kuhn (1970) calls ' normal ' science, i.e., puzzle-solving within pre-determined frames of reference? Or can geography be taught so that it encourages the review of alternative frames of reference in resolving anomalies in experience?

It is not surprising that many teachers are unclear about what constitutes scientific enquiry and ' new geography '. It is not really what is found in professional journals, for this is merely its outcome. Teachers lack models of the formative processes of *informal* reasoning, clarification and criticism of which research reports and theories are but the surface grammar. Of course, these informal processes have to be both taught and learnt intuitively in some measure, through example and imitation, but part of the reason why they are not being communicated may be that to university geographers they are so implicit that they are taken for granted. If university geographers could reveal more of the value inputs in their work, and of how their thinking has changed through criticism, then teachers may come to interpret changes in the subject more in terms of the search for new insights than the retailing of techniques and discrete findings.

There has, however, been some reaction, particularly by teachers in the United States, to curriculum reforms of the 1960s style. It is argued that they replace traditional fact-retailing with ' religions of research ' of no greater cultural relevance. Shrill though such responses are, they constitute a challenge to university geographers which is too seldom met, that of effectively communicating the *cultural implications* of their ways of viewing the world, their relation to tradition bound ' common sense ' perceptions, and hence to practical moral judgments (Habermas, 1971).

The project's central aims and values

With these perspectives and with the prospect of continuing rapid change both in geography and in schools and society, the project decided that though the immediate need was for new teaching materials and textbooks, there were equally important longer-term needs. Without teacher development, new materials and ideas are adapted to the prevailing teaching-learning system, rather than vice-versa. We therefore needed a frame of reference which would enable us to co-ordinate the production of new materials, teacher development and organizational change.

We found it helpful to see curriculum change in terms of socio-cultural change, in which roles, status and values, as well as ideas, are involved. A key need, therefore, is to help teachers develop appropriate ' conceptual skills ' (as opposed to ' technical skills ', abilities to work only within pre-determined frames of reference). It is difficult to condense our approach to this task but it can be illustrated partly through our work in ten varied pilot schools. In each school we are helping the departmental team to think through an experimental O-level course in geography designed to give teachers and students more flexibility and responsibility, while maintaining standards of comparability. The courses will be assessed as follows: Final examination 50%; Course work 30%; Individual study 20%. The course work element gives teachers scope for divergence, especially in local studies and in studying in adequate depth complex socio-geographical problems, such as those of urban-planning, conservation and world poverty.

The degree of responsibility it gives teachers, and the resource this offers for teacher development, may be judged from the following extract from the syllabus:

> "The aim of the syllabus is to enable pupils to use important skills, ideas and models drawn on in geography in classifying and interpreting their everyday experience; for example, in discerning order in landscape and in bringing regional and world problems into appropriate frames of reference.
>
> Thus the basic criteria used (a) by participating teachers in selecting places, regions and themes to study; and (b) by participating teachers and moderators in formulating questions for the final examination, are that they contribute significantly to promoting pupils' understanding of:
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> 1. (i) the geographical character of the local area, and of the British Isles considered as a unit; the use of 1 in. and 2½ in. OS maps
>   (ii) significant contrasts and similarities in (a) other economically developed regions of the world, and (b) less developed regions of the world
>   (iii) the working of wider physical and economic systems at a world scale.
> 2. (i) the *processes* underlying landscape and spatial patterns
>   (ii) environmental inter-relationships considered in terms of *systems and sub-systems;* and hence with *multiple or cumulative causes*, rather than simple cause and effect or deterministic explanations
>   (iii) how landscapes and spatial patterns *change*, and may be expected to continue to change, especially in the context of technological change
>   (iv) the role of *decision-making*, and of the *values and perceptions* of decision-makers, in the evolution of patterns in human geography
>   (v) the importance of the *scale* at which patterns and systems are considered
>   (vi) how ideas, models and maps *simplify* complex geographical reality."

As a result of this pilot study, we hope to identify the key processes in this way of working, and to extend them to a much larger number of schools.

Evolving new teaching materials

Curriculum developers use the term ' curriculum ' to mean the total learning experience provided. They mean, for example, the influence of forms of assessment and differing patterns of classroom interaction as well as subject-matter on what students really learn. As Schwab (1969) has shown in a form particularly relevant to university geographers, the basic resources in education are not textbooks, lectures, or field-work, but identifiable situations engaging students in recovering and articulating meanings, painfully acquiring the art of research, understanding what is really entailed in making judgments and achieving self-esteem and self-understanding.

Of course, teaching materials are essential to build up basic knowledge and skills. Ideally, they would also demonstrate for teachers how key ideas and strategies of enquiry can be translated into student learning activities, and how they can be related to more general concepts of the relationship between feeling, thought and action. Put another way, teachers need materials which resolve the apparent paradox that a more scientifically rigorous geography curriculum needs also to be more humanistic. By this we mean materials providing resources which stimulate the mind's complementary capacities for precision and the counter-intuitive, and for the romantic and non-rational, for example in reaching out for new frames of reference or shared feelings, through the cross-application of concepts and through imaginative re-enactment. Teachers and students need, for example, to be aware of the role of hunch and error in scientific activity; of the sense in which the environment is constituted by culturally-rooted images, and hence is never quite what it seems.

Project exemplar materials, for example, will focus teaching more on concepts such as ' systems ' and ' networks ' while bringing out their dangers; on human geography considered within a social sciences frame of reference emphasizing the role of the culture and values of both observer and observed; and on geographical

illustrations of some of De Bono's aphorisms (1972), for instance, that ' Proof is often no more than lack of imagination—in providing an alternative explanation.'

Implementation strategies

Recent studies in management and the social sciences (Bennis, 1969; Gross, 1971) suggest that the effective, sustained *implementation* of changes in how people work (as opposed to nominal acceptance of change) requires more than the diffusion of ideas. Frequently the strongest influence on the implementation of change is the formal and informal organization of institutions. If change entails teachers un-learning habitual roles and ways of interpreting experience, the degree of encouragement that institutions and colleagues provide may be crucial.

Thus it is an essential element in the project's work that changes in what geography is taught, and how it is taught, are linked with changes in curriculum discussion and planning processes in schools. In turn, this entails changes in the teaching-examining system. At the moment, examining boards and teachers are caught in a vicious circle, each blaming the other for slowness of response to change. Schools need more scope and support in trying out new ideas, but this will entail the evolution of new roles by the examining boards.

The potential role of the university geographer

If there are to be more effective inputs into the school teaching-examining system, some university geographers may also need to evolve new roles. The need is increasingly less for them to write school textbooks simplifying the surface-grammar of university research, than to write flexible materials and articles which mediate the changing sub-culture of university geography to the teacher and intelligent layman. At the moment, the mediating role is left too much to chance, individual good will, and the *Geographical Magazine.*

The task is intellectually exacting, for it demands a philosophical self-consciousness, an exhuming of basic concepts, cognitive strategies and frames of reference often taken for granted. Moreover it entails the university geographer making a specific effort to understand the sub-culture of the school and of the adolescent. Cultural relevance in university geography begins here just as much as through involvement in planning and conservation issues. The project is already being helped by a small group of Bristol University geographers, working with local teachers to produce new teaching materials in physical geography, and we hope this process can be extended.

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