

# Health education and the science teacher: invitation to a debate

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The author describes four alternative approaches to health education. These are (a) Education for bodily regulation; (b) Education for personal growth; (c) Education for awareness of the environmental and political limits to health; and (d) Education for community action in health. He suggests that science teaching is "far too heavily influenced by the academic tradition", and finds it "rather dismaying that in the many efforts to liberalise the school science curriculum . . . no serious awareness is demonstrated of the extensive literature and vigorous debates within the field of health education."

This paper was presented at a Health Education Symposium, held during the January 1984 meeting of the Association for Science Education at Exeter University.

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## Introduction

I want to use this paper to air some doubts that I have concerning the contribution that science teachers can make to health education in schools. I will suggest that they are often ill-equipped or unsuited for the demands of contemporary health education. I take no pleasure in putting forward this view: it is not that I am against "science", as such. I ought to say that science subjects, from biochemistry and bioengineering to epidemiology, loom large in my own career as student, teacher, and researcher, and I continue to find these fields absorbing. Yet I am convinced that the biological

and medical sciences have only a subordinate contribution to make to the theory and practice of health education, and that developments in the social sciences and the humanities have a far more central contribution to make.

Given this opportunity to participate in a symposium under the aegis of the Association for Science Education, I would like to develop this line of argument, and in so doing to offer a perspective which I believe may illuminate the problems of science in health education, and which may suggest some questions for further inquiry. This paper is therefore an invitation to a debate.

### Re-thinking science education

In recent discussions of science in the school curriculum there appears to be widespread agreement that school science needs vigorous and fundamental re-thinking, to remedy what a previous speaker at an ASE Conference called *The Tarnished Image of Science*<sup>1</sup>. The ASE itself in its 1979 Consultative Document<sup>2</sup> provides a useful text: "Secondary school science is still firmly characterized as being fixed and non-negotiable in contrast to many other areas of the curriculum... Changes in content that have occurred have with notable exceptions reduced the emphasis to be placed on application and social relevance, and tightened the boundaries between the sciences and other forms of knowledge. As a result secondary science has become steadily more isolated from the totality of the school curriculum."

Black and Ogborn<sup>3</sup>, in a commentary on the DES Paper *The School Curriculum*<sup>4</sup> observe that "the present school science curriculum is far too heavily influenced by the academic tradition", and they suggest that there is an urgent need for a "new kind of content, chosen for its value in living". Similarly, Ingle and Jennings<sup>5</sup> offer a broad review of attempts to go beyond the elitist and formal tradition of science education, which they acknowledge has too often been narrowly specialist and out of touch.

I am tempted to suggest that it is precisely these persistent features of science education that have led many, myself being one example, to move into the field of health education; and I find it rather dismaying that in the many efforts to liberalize the school science curriculum that are cited in recent commentaries, no serious awareness is demonstrated of the extensive literature and vigorous debates within the field of health education. Any discussion of "science for all" is, in my view, deeply impoverished and lacking in seriousness, if it does not get to grips with the ways in which the personal, political, economic, social, cultural and moral dimensions of modern

science are directly engaged in recent developments in health education.

The Schools Council/ASE/HMI working party on the Science Curriculum Review<sup>6</sup> recognized that health education may have much to offer, and an extension of this project is currently setting out "to explore and develop ways in which issues of concern to health education can form appropriate contexts for the study of important areas of scientific knowledge and understanding".

### Alternative approaches to health education

In the meantime I believe that there are already insights available from developments in health education which justify a sceptical view of the contribution that science teachers can make. In what follows, I offer a review of the range of alternative approaches in health education, and of some of the major issues about which those working in the field are concerned (some of which I suspect will have a familiar ring to many science educators). I will also try to identify some of the questions which arise concerning the role that a science teacher might occupy in each approach.

There has emerged in the last few years a fierce debate in health education about alternative strategies and approaches, about different theoretical models that can inform and guide practice, and about the relative effectiveness of different strategies. In connection with my own teaching and research in the University of London since 1977, I have drawn up and used a "map of the field" in terms of four distinct paradigms of health education. These are education for bodily regulation; education for personal growth; education for awareness of the environmental and political limits to health; and education for community action on health. I shall examine each of these in turn.

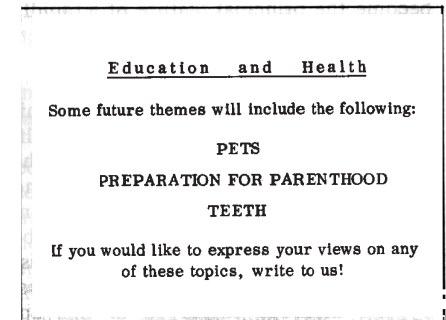
### Education for bodily regulation

This approach has long dominated the field of health education, and remains prominent in the ways that major profes-

sional groups and state agencies view their task. This "biomedical" model involves providing scientific information and advice concerning bodily functions, emphasizing individual health risks and how to avoid them. The task envisaged seems simple and straightforward; but serious doubts are now widespread concerning both the practical effectiveness of this approach, and its ethical and political justification.

In its simplest form it employs a 3-component KAB model (Knowledge, Attitudes, Behaviour) which is still found attractive by many.<sup>7</sup> However, repeated disappointments and failures with the KAB model have led to the development of more sophisticated variants, for example the *Health Beliefs Model*.<sup>8</sup> The common feature remains the use of "factual input" to activate feelings, beliefs, and perceptions so as to bring about specific behaviour changes to maintain health. In spite of the compelling directness of the approach, and despite extensive research and development efforts in the USA and the UK, the record of "success" in equipping people with useful knowledge and in securing behaviour change has proved to be extremely modest and disappointing.<sup>9</sup> A recent example of the approach in the school context is the HEC-funded "My Body" project<sup>10</sup> which has been able to claim some success in changing knowledge and attitudes about smoking in children (and apparently in their parents).

Science teachers are likely to find this approach recognizable and familiar, easy to organize, and giving them clear responsibilities on the basis of their established specialist expertise; and thus representing one obvious and accessible means of achieving personal and social relevance in their teaching. However, many of the practical instances that can most obviously illustrate "bodily regulation" are likely to be found in the work of other teachers, especially PE and Home Economics (eg. nutrition, baby care); and the science teacher may need considerable encouragement to move towards coordination and perhaps team-teaching with



colleagues on such topics. If such examples from everyday life are not drawn upon, the remoteness of science (even if notionally "applied") is likely to be perpetuated.

Moreover, there is another difficulty. Various commentators have expressed concern at the philosophical issues, of a political and ethical nature, that are raised by this approach.<sup>11</sup> Too often it is employed as "health propaganda" in which "doctor's orders" (or their biological equivalent) are imposed in an authoritarian and directive way on vulnerable individuals. Often science teachers may collude with visiting experts in promoting such persuasion tactics. One useful example of a means of avoiding this slippage into biomedical authoritarianism has been developed in an ILEA project in Lambeth, where sessions are organized called *Bringing the Medical into the Classroom*, in which a school doctor turns a routine developmental assessment clinic into a lesson, by conducting the examinations in front of the class, explaining her procedures, and answering pupils' questions.<sup>12</sup>

One further comment may be made on this approach. It also too often takes it for granted that responsibility for avoiding risks to health lies with the individual, which may in fact be simply "blaming the victim".<sup>13</sup>

### Education for personal growth

This approach is one which has emerged in recent years as a major alternative to the "biomedical" model<sup>14</sup> and it has

become the principal feature of a rapidly expanding range of curriculum projects for school and community health education.<sup>15</sup>

The key common features in this strategy are that it seeks to build self-esteem in the learner; to encourage the development of skills in life review and in personal problem solving and decision-making; and thus to help learners to be more self-assertive, to recognize and resist pressures to adopt self-damaging lifestyles. Typical methods employed in this approach are the use of non-didactic trigger materials (in the form of critical incidents, case histories, questionnaires) which give the learner an opportunity to review and reflect upon personal experience, and perception of particular social situations; and through structured group work to clarify individual values, to consider and discuss alternative plans and to rehearse options through role play etc.<sup>16</sup>

This strategy, in its focus on the biography or "health career" of the individual is essentially rooted in social psychology, but it also reflects an influence from moral philosophy in its emphasis on education for personal autonomy or "self-empowerment". These characteristics give this approach many clear points of contact with the pastoral and child-centred movements in general education.<sup>17</sup>

For the science teacher in schools, in principle, health education programmes based on this approach should offer a direct route away from the didactic, formal and normative traditions of

science education, and a route into a more humanistic, interpretative style, that is sensitive to individual pupils' needs and interests — as called for by the ASE 1979 discussion paper.<sup>18</sup> On the other hand, of course, such programmes offer a link into tutorial activities and the pastoral system. In practice, many science teachers are suspicious of this way of working, and are resistant to it. A teacher in an ILEA school, interviewed in 1978 by Jane Jenks about approaches to health education,<sup>19</sup> commented that:

*The boys, we say, need a certain amount of information about drugs, about their attitudes to sex, cigarettes, alcohol. Right, there's a time set aside, that's that, information is imparted. But it's not a caring thing, in that no more than anybody timetables Geography as a caring subject ... you can't timetable something as a caring subject.*

Another teacher in another ILEA school interviewed in 1980 by Eileen Carnell about his experience of recent Health Education developments<sup>20</sup> observed:

*I would just like to remind you that we are teachers and not Social Workers, Clergymen, or Psychiatrists. We are teachers and it seems to me that a great deal of the work you seem to think comes into health education in fact belongs more to the Social Worker, Psychiatrist, and so on.*

A study carried out by a University of Aston team found that teaching the personal and social curriculum (on topics like parenthood) presented teachers with particular difficulties not found elsewhere in the curriculum. One teacher they interviewed in 1980 remarked<sup>21</sup>:

*I keep sitting back and thinking, here am I, I'm going to talk to kids now about marriage and relationships, and I think I'm the last person in the world who should be doing it.*

Another difficulty with the personal

development model is the danger of the invasion of the private domain — of personal values, of individual and family biography — that it may involve.<sup>22</sup> Moreover, the emphasis on personal development can too easily slip into a crisis orientation, especially when pupils disclose serious personal problems which the teacher finds difficulty in handling.<sup>22</sup> In such a circumstance, the skills required are elusive, and labour-intensive, and are perhaps rarely possessed by science teachers, and in any case may be the focus for derision or rejection by colleagues, pupils and parents.<sup>23</sup> It is then easy to see why the style of work can too often degenerate into routinized disciplinary and custodial activities, with personal development and useful scientific information about health altogether lost to view.

There may be the further suspicion that in its emphasis on self-disclosure and self-conscious life planning, the personal development model may over-emphasize a particular middle class set of values and social codes which may be "unrealistic" for working class children. An ILEA teacher interviewed by Eileen Carnell<sup>24</sup> about the developmental approach argued that:

*It goes so counter to the children's other experiences that I feel to place too much emphasis on it in the school would make the work unreal... we may change their expectations in a way which will eventually be discounted.*

### Environmental and political limits to health

This approach, which has come to attention recently in health education, emphasizes the societal rather than the individual dimensions of change in contemporary lifestyles.<sup>25</sup> Its key feature is to educate for an understanding of the ecology and politics of health, to increase awareness of the forces within the social, economic and legal environment which constrain the choices any individual can make in matters of health; and to improve "political literacy" in these areas, through study

of those features of public policy that determine health (eg. housing standards, welfare benefits, traffic control, advertising codes, food subsidies, work place safety regulations, etc.).

This approach has many features in common with social studies today in schools<sup>26</sup> and is increasingly prominent in radio and television programmes about health matters.<sup>27</sup> Two examples of the approach within health education are the "Health Careers" programme for schools<sup>28</sup>; and one unit (on "Healthy Environment") in the Open University "Health choices" programme for adult/community education.<sup>29</sup>

Here again, there might be thought to be obvious scope for science teachers to employ this framework as a means of bringing the "social context" of science into focus in the school, as called for by many of those concerned in rethinking science.<sup>30</sup>

But again, science teachers may be reluctant to enter this area: in my own courses at the Institute of Education, student teachers of history, geography and sociology turn out to be more interested. The problem here is perhaps the familiar one of multidisciplinary. Ingle and Jennings, in a discussion of the difficulties of teaching science in a social context, and science across the curriculum,<sup>31</sup> observe that:

*There can be no doubt that most of those teachers educated in our own system of specialist sciences have been reluctant to teach the broader science courses, preferring the safe territory of their own particular discipline.*

Indeed, the very view of science that is held by science teachers is likely to run counter to the stance required in teaching about the political, economic, ethical, and legal dimensions of health. To quote Ingle and Jennings<sup>31</sup> once more:

*School teaching has continued in the main to present science as a large body of factual knowledge. Furthermore, the methods of*

The next issue will include an article

by

Dr Robert Snowden

(Director, Institute of Population Studies, University of Exeter)

on

"Fertility-regulating behaviour and the secondary-school pupil"

science are usually portrayed as demonstrating the neutrality and objectivity of this factual knowledge.

Yet, some of the most obvious examples of "biologism" or "reductionism" in modern science are to be found in fields to health,<sup>32</sup> and perhaps the most challenging accounts of the moral and political dimensions of modern science are likewise in the health field.<sup>33</sup>

There are likely to be severe conflicts of perspective, and communication barriers when the coordinated teaching that this approach calls for is attempted. Yet the contribution of science teachers could be crucial: many of the issues at the centre of debates about the politics of health involve highly detailed scientific information and arguments, which need to be fully explained alongside of the complex policy making machineries of the systems of Health and Welfare in the modern state. Of course, if the scientific expertise is not "unmasked" we perpetuate the effective disenfranchisement of the public from their rights in environmental health and health policies that this whole model is intended to challenge.

### Education for community action in health

This final line of approach in health education is also quite recent, but is attracting rapidly-increasing attention. The pedigree of this approach is mixed and includes "community development" work<sup>34</sup>, self-help movements<sup>35</sup>, and others which share the "community" orientation.<sup>36</sup> Its principal feature is the commitment to help local groups to take action on specific local issues that they themselves identify as needing attention. The role of the health educator in this style of work is to offer resources, to clarify alternative courses of action, to suggest solutions, etc.

This approach has much in common with some aspects of the "community education"<sup>37</sup> movement and has so far been furthest developed in the adult sector.<sup>38</sup> It is intriguing to see how often

health issues show up in the programmes of schools with an explicit community education role.<sup>39</sup> One programme of school health education has been developed which incorporates this approach, where a school and its local community (local Health and Welfare professionals alongside of parents) have begun to work together to explore local health issues.<sup>40</sup> Another example is in Bristol, where the LEA sponsored a local community action project involving food education, backed by food collectives on a community-wide basis.<sup>41</sup>

Within this model of health education, the inquiries that are embarked upon remain closely in touch with the local cultures and ways of life of the communities served. This poses new difficulties for the teacher (and not just the science teacher) in that any such "outreach" work challenges the prevailing ways in which teachers perceive themselves and are seen by outsiders.

Putting their skills at the service of the wider community beyond the school-gates, perhaps to act as advocate for improved local facilities and services, may be an especially effective contribution to "science for all" and even to "health for all"; but it is likely to be an uncomfortable role for all but a few.

Perhaps the science teacher can learn something from colleagues in PE in this respect. They may have fewer inhibitions in this "outreach" work, and community-based extra-curricular activity programmes with a health focus seem to be on the increase.<sup>42</sup>

### Conclusion

I sub-titled this paper *Invitation to a debate* in the expectation that the perspective I am offering will lead to a brisk exchange of views. There was a further thought in my mind, too, which was that this examination of the place of school science in health education implies at every point an invitation to science teachers to join in a debate within their schools. This debate will be about science and the individual, about science and society, and about science and local communities.

It seems to me that recent health-education initiatives raise many questions about fundamental features of schooling today. The debate about the relation between science and health education does, I believe, reach out both inevitably and constructively to wider current

debates<sup>43</sup> about knowledge and social control, about curriculum and ideologies in schools, and about the education system as an agency of cultural change. I hope that these larger issues will not be ignored.

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I am pleased to say that we have a FORUM in this issue. Two people heeded the previous plea. But two people out of 16,000 is a poor proportion. So, please write. Let "Education and Health" be a lively and interesting journal of opinion and comment. **Write now!**

Yours sincerely,

The Editor