MECHANISMS FOR THE CONTINUING EDUCATION OF THE PUBLIC

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Contents

Summary

In many countries of the world today public participation in environmental decision-making is mandatory, not an option, and it is a growing trend. Furthermore, in pluralistic democratic societies, pressure for socio-political change including environmental change comes from the grass-roots level in the bottom-up fashion. Clearly therefore, in order for public participation to be effective, it is essential for the public to be reasonably knowledgeable and well informed on pressing environmental issues and problems, preferably at all levels—local, national, regional and global.

The environmental landscape is not a static one in the sense that environmental issues and problems change over time in terms of priority, and at a given time one or more of the issues and/or problems becomes a priority. For example, at present the problem of global warming and its consequences is top priority because, according to many eminent scientists, it is potentially far more catastrophic for all life on Earth than terrorism or other man-made disasters ever could be. This means that the public at large ought not only to be reasonably knowledgeable and well informed especially on priority environmental issues and problems, but that they must also keep abreast of events and developments as they unfold over time. Continuing education of the public is needed for this.

Different formal and informal mechanisms available today for continuing public education are discussed in this contribution including internet-based mechanisms which, with their theoretically infinite multiplier effect for knowledge and information dissemination, have been revolutionizing the teaching-learning process. In the particular context of continuing environmental education of the public, in section 1 reference is made to the meaning of "learning" from the perspective of educational psychology, and to the fallacy, called "Enlightenment Fallacy", which presumes that learning would automatically modify people's behaviour and/or attitude. Different formal and informal mechanisms of continuing environmental education are then described in section 2, followed in section 3 by a description of the mechanisms currently available for informing the public on specific environmental issues and problems. In section 4 reference is made to an obvious shortcoming of current environmental curricula and further reference is made to the "Enlightenment Fallacy".

1. Introduction

It is common practice in many countries for members of the public to enrol in a continuing education course to study one or more subjects of their choice in their spare time. They do so because of their genuine interest in acquiring, updating or upgrading their knowledge in those subjects, and not necessarily because they wish to receive a diploma or certificate or qualification as official recognition of knowledge gained. Depending on personal preferences, the subject(s) chosen by an individual has generally been hobby-based such as foreign languages, Greek and Roman architecture or astronomy, or practical subjects such as motor car servicing, furniture-making, household plumbing, etc. However, a large majority pursue vocational courses with a view to increasing their earning potential.

Due largely to increasingly frequent media reports on environmental issues and problems, a growing proportion of the public at large is becoming interested in and opting for continuing education in subjects dealing with specific issues such as those of sustainable development, global warming, and poverty alleviation. In response to this growing demand, providers of continuing education are laying on courses dealing with such subjects, albeit rather slowly. Currently this is the evolving situation in the United Kingdom, and presumably it is the same in many other countries, too. This growing trend is much to be welcomed because in pluralistic democratic societies it is public pressure from the grass-roots level that persuades and sometimes forces governments to develop and implement policies for economic, political or environmental change. It follows therefore that the public must be well-informed in order for positive environmental or other changes to take place. In the particular context of the environment and sustainable development, empowerment of people with knowledge and information assumes particular poignancy because their participation in decision-making becomes effective only when they are well informed and knowledgeable (typically, Chapter 23 of Agenda 21, which is a four-paragraph preamble to Section III of Agenda 21, stresses the importance of broad public participation in decision-making).

Although it is generally assumed, as in Agenda 21 for example, that acquisition of knowledge of how human activities for economic development have been degrading Earth's natural environment and life-support systems would automatically bring about

positive changes to learners' behaviour and attitude to nature and the environment, apparently it is seldom so. For there is what is called the "Enlightenment Fallacy" (Berry, 2004) which refers to the gap between knowledge gained on one hand, and on the other the extent to which it positively modifies learners' behaviour. Mere acquisition of knowledge does not automatically translate into a change in learners' attitude or behaviour. This Fallacy has its counterpart in Educational Psychology, too, where "learning" (through cognitive or behavioural approach) is defined as a *hypothetical construct* in the sense that it can only be inferred from learners' observable behaviour and cannot be observed directly (see section 3.3 of *Importance of Teaching Environmental Education at an Early Age*). In other words, learning is a process that modifies (or should modify) the behaviour of the learner fairly permanently (Coon, 1983; Gross, 2001). Otherwise it cannot be said to be learning. So, the question to be addressed is this: does acquisition of environmental knowledge by the public amount to learning in the sense that it changes (or could change) their behaviour and attitude to nature and the environment fairly permanently, from one of gross exploitation as at present to that of genuine respect and prudent husbandry? Regrettably, the answer has to be largely negative as the following would typically illustrate. Based on the empirically observed fact that while the profligate and hedonistic life-styles of the affluent are generally acknowledged to be responsible for increasingly unsustainable patterns of production and consumption, they (the affluent) have been doing little or nothing to adopt less consumptive and less polluting life-styles commensurate with Earth's ecological capacity to provide, as they are urged to do in *Our Common Future* (WCED, 1987, page 9). On the contrary, the trend is for the affluent to indulge in ever more fanciful and open-ended consumption for instant sense-gratification with apparently supreme disregard for the environmental consequences of such behaviour (also see section 4). We reluctantly conclude, therefore, that what today goes by the name of "education" or "learning" is little more than acquisition of knowledge and information for purposes other than for learning in the true sense of the word as defined in educational psychology. The ethos of adult learning also confirms this. Vocational education—and adult learning is largely if not exclusively vocational in nature (see section 2.1)—is and has always been about earning a "meal ticket" so to speak, and seldom about changing people's attitude or behaviour if at all.

Continuing education of the public in a specific issue is also provided by a relevant authority if or when it deems necessary or appropriate to do so. For example, in order to increase recycling of household waste, currently some of the municipal authorities in the Greater London area have undertaken continuing programmes to inform and educate the public on why and how they ought to separate household waste at source to facilitate recycling. Interested or not, householders are obliged to learn about the modalities of household waste separation at pain of financial penalty.

2. Mechanism for continuing public education

Depending on the depth and scope of what is to be learned, and subject to local availability and access, an interested member of the public may choose one or more of the following methods of continuing education to acquire new knowledge or to upgrade and/or update his/her current knowledge in a subject-area of his/her choice. In all cases fullest utilization of the immense and growing wealth of information on the internet is

highly recommended.

A formal mechanism is a supervised and structured study programme that leads to the award of a certificate recognising the new or upgraded knowledge and/or skills gained by the candidate, while an informal mechanism is a self-taught programme of study, which can be structured or unstructured, undertaken by the learner to satisfy his/her curiosity or interest at his/her own volition.

2.1. Adult learning

Formal "Adult Learning", also called "Adult Education", has been the traditional method of learning by adults world-wide. As the definition of "adult" varies from culture to culture and may be based on an individual's age (e.g. 18 or 21 when one is said to become legally an adult), biological or psychological state, or behavioural maturity, the following has much to recommend itself as a generic definition of adult learning: "Activities intentionally designed for the purpose of bringing about learning among those whose age, social roles, or self-perception define them as adults" (Merriam and Brockett, 1996). Philosophically, adult learning is underpinned by the conceptual construct that education is life, and that therefore life itself is education too. It is a truism to say that we learn unceasingly throughout our entire life by constantly trying to make sense of our perceptions of the world around us. And so it is that adult learning, like all learning, is a continuing process, not an event. Furthermore, what one learns in adult education is built around the needs and interests of the learner, unlike conventional curricula-based education in which the student is required to adjust to a prescribed course of study that may be of less than genuine interest to him or her (Lindeman, 1989). Interestingly, the word *pedagogy,* which is one of the two elements of a curriculum (the other element being content), literally means *teacher-centred* science of teaching children. On the other hand, while the original meaning of the word *andragogy* had been "the art and science of helping adults to learn", it has now taken on a broader meaning and refers to *learner-centred* education for people of all ages (www.agelesslearner.com). Indeed, unlike *pedagogy*, learner-centred education for people of all ages is the guiding principle of modern *andragogy.*

Historically, the impetus for providing the means for adult education came from societal need to lift the masses out of poverty. For example, in modern times it was in the early 1960s that poverty alleviation through adult literacy became a political issue in the USA. To that end, during the Lyndon B. Johnson administration federal legislation was passed (notably the Economic Opportunity Act, 1964, under which the first Basic Education Programme was created), and targeted programmes launched aiming to end poverty in the USA by making education widely accessible. Adult education was an important element of that effort (Knowles, 1977). The legacy of this implicit conceptual connection between poverty alleviation and adult literacy still endures in the sense that nearly all adult education courses on offer today are vocational in nature, or potentially so. Even a cursory examination of the courses offered by a typical adult learning centre would confirm this.

Adult learning courses cover a bewildering range of issues and subjects for which there is manifest or potential demand or social need. Most of the courses lead to vocational

qualifications whose quality is monitored by an external statutory agency charged with the responsibility of maintaining high quality standards. In the United Kingdom, for example, the Adult Learning Inspectorate (ALI) performs this task. Working within what is called the Common Inspection Framework, it gives an "independent public account of the quality of education and training, the standards achieved, and the effectiveness and efficiency with which resources are managed" (www.ali.gov.uk/htm/inspection_purpose.htm). Teaching-learning facilities are usually provided at purpose-built Adult Learning Centres. Sometimes the facilities are also attached to or housed in established colleges or institutions of higher education, mainly because synergy and/or economies of scale can accrue from this arrangement. However, due to the rapid growth of distance education in recent years (see section 2.6), teaching-learning is increasingly being transferred to the electronic medium. As a result, the conventional concept and importance of an Adult Learning Centre as a specific geographical space, where knowledge and skills are to be acquired, is being eroded. Adult learning is usually funded from the public purse. In the United Kingdom, for example, it is funded by the local authorities, while in the USA funding for all kinds of adult learning programmes comes mainly, but not exclusively, from the federal budget.

2.2. Full-time and part-time courses

These formal courses, which last 12 months or longer, are usually offered by universities and institutions of higher education in a wide range of disciplines. They are meant for those who wish to acquire in-depth knowledge in the thematic area of a course. Depending on the level of the course studied, a degree or a diploma is normally awarded to those who complete the requirements of the course and satisfy the examiners. Normally an individual is motivated to undertake such a course of study by one or more of the following: prospects of promotion in the case of in-service professionals; prospects of a better job; and genuine desire to acquire new knowledge or to upgrade and/or update current knowledge in the subject. Often the part-time courses are tailor-made for in-service professionals who usually undertake them in their own time and at their own expense unless they are sponsored (usually by their employers).

2.3. Short courses

These are mostly formal or informal intensive courses, conventionally given in the face-to-face format over a period usually not exceeding five days. However, due to rapid developments in electronic communications world-wide, in future they are increasingly likely to be delivered via electronic systems (e.g. the internet, online and video-conferencing). Normally short courses do not end with a test or examination, and so they do not lead to the award of a certificate or qualification as official recognition of knowledge gained by the participants (also see section 3.2.1 of *Continuing Education for Decision-Makers including Politicians, Senior Government Officials and Chief Executives in Industry*). The purpose is for the participants to acquire new knowledge, or upgrade and/or update their current knowledge and/or skills in a specific subject. Usually given by a team of experts, a short course is at its most effective when it is dedicated to a well-defined thematic area that has local professional demand, and its delivery organised in a structured format including one or more of the following as deemed necessary or appropriate: computer work; hands-on work in the field and/or

laboratory; case studies; group discussion; brain-storming; and site visits. These courses are most popular among those in-service professionals whose participation, in the judgement of their employers, is likely to accrue benefits to their organisations. Because of growing demand, currently there is a thriving market in such courses organised by a wide variety of providers. Usually in-service professionals are sponsored by their employers to attend such courses, while other interested individuals attend them in their own time and at their own expense.

2.4. Conferences

Conferences are probably the best informal mechanism for disseminating the state-of-the-art and/or for reviewing advances in a specific issue or subject. Depending on its importance and nationalities of the participants, a conference may be international, regional or national in scope. However, in all cases it is common practice to structure a conference with at least one "plenary" session, together with a number of "ordinary" (or scientific) sessions. In the former, acknowledged authorities in the specific issue(s) or subject area(s) of the conference are invited to make key-note addresses on the state-of-the-art, and/or to review up-to-date developments. The key-note addresses are meant to set the "scene" of the conference or to provide its thematic background. In the ordinary sessions selected contributions on thematic issue(s) or subject area(s), which in practice often turn out to be papers on latest research and/or development, are presented by their author(s). In each of these sessions it is common practice to reserve time for questions from the audience to which those making presentations are invited to respond. While the usual duration of a conference is between 1-5 days depending on, among others, the total number of presentations to be made, large international conferences can and do last longer. The 2002 World Summit on Sustainable Development (WSSD) in Johannesburg is a typical example of the latter.

Sometimes a major conference is combined with an exhibition of latest hardware, software and/or books relating to the subject-matter of the conference. For example, in the case of a conference on waste water treatment, relevant industrial and business enterprises may be invited to exhibit their latest offerings in waste water treatment technology including hardware and software, and publishing houses to exhibit their latest publications in the area. It is also common practice these days to include a "Poster Session" in a conference in which recently completed or on-going research and development work in the thematic area is described and exhibited in posters. Both exhibitions and Poster Sessions add value to a conference. For a serious learner the benefits of attending a conference are these:

- Acquisition of knowledge of the state-of-the-art and up-to-date developments in research, from presentations made in the plenary and ordinary sessions. In most cases all (or sometimes a selection of) the presented papers are published in the proceedings of the conference in the printed and/or the CD format as a permanent record. Often edited discussions that take place on the conference floor are also included in the proceedings.
- Those who make presentations to a conference, or are invited to do so, gain academic kudos from the publication of their papers in the proceedings of the conference. However, as conference papers are generally not rigorously reviewed,

generally they carry less academic weight than papers published in a scholarly journal that are (also see item (b) of section 3.2.1).

- An important benefit of a conference is that it provides a common forum for like-minded people, or people working or doing research in the same or similar fields, to meet both formally and informally during the conference. This facilitates direct exchange of ideas in ways that would not be possible otherwise. In particular, informal meetings often lead to making new friends or reinforcing of old friendships, whereby greater collaboration in study, research or development can occur among the participants with potential benefits for all concerned.

However, attending a conference costs money. Participants have to pay for their travel to and from the conference venue, accommodation and other living expenses there, as well as the registration fee which is sometimes waived or discounted for those making presentations. These costs can be high, and often they deter genuinely interested individuals from attending conferences, especially from poor developing countries, unless they are sponsored. However, exciting developments in video-conferencing technology in real time are now taking place, and hopefully the problem of costs will be alleviated in due course when this technology becomes widely available and affordable.

2.5. Seminars and workshops

Defined as a small class at a university for discussion and research, or a short intensive course of study, in practice the distinction between a short course (2.3 above) and a seminar is often blurred because both tend to have similar formats and objectives. Consequently, like a well structured short course, a seminar often proves to be an effective mechanism for the discussion and/or study of a specific issue or subject with a view to unravelling its complexity. However, normally effective participation in a seminar is contingent upon the participants having reasonable background knowledge of the issue or subject-matter under discussion.

Defined as a meeting for concerted discussion or activity, in practice a "Workshop" turns out to be a structured process that guides independent people to a common goal— learning to dance in a "Dance workshop" for example. Thus hands-on work, training or practice is the defining feature of a workshop. It is helpful to think of a seminar in terms of "theory" and a workshop in terms of "practice". Clearly, a seminar combined with a workshop would therefore be the mechanism of choice when it is essential for participants to learn not only about the theory, but also the practical aspects or application relating to a given issue, or solving a given problem.

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Biographical Sketch

Professor Bhaskar Nath received his Bachelors degree in Civil Engineering from the Indian Institute of Technology, Kharagpur (India) in 1960, followed by a Ph.D. from the University of Wales, UK, in 1964. In 1983 he was awarded a D.Sc. degree by the University of London for his outstanding original research (according to citation) in numerical mathematics. In 2001 he was awarded the Doctor Honoris Causa (Dr.H.C.) by the University of Chemical Technology and Metallurgy, Sofia (Bulgaria), for his contribution to environmental education.

Prof. Nath taught at the University of London for twenty-seven years till 1994. Currently he is the Director of the European Centre for Pollution Research (ECPR) and Executive Director of the International Centre for Technical Research, London. He is also consultant to a number of UK and US companies.

He has organized eleven international postgraduate teaching and training programs and four major international conferences and fifteen dedicated short courses in various European countries.

Professor Nath's professional interests include elasto-hydrodynamics, numerical mathematics, philosophy, environmental protection, environmental management, environmental education, and sustainable development and related issues. His publications on these subjects number over 100, including sixteen books. He has been founder and editor of three international journals, including Environment, Development and Sustainability.