

EDUCATIONAL POLICIES FOR SUSTAINABLE DEVELOPMENT

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Contents

1. Introduction
 2. A Historical Perspective
 - 2.1. Fragmentation of Knowledge
 - 2.2. Becoming a School Subject
 - 2.3. Approaches to Integration
 3. A Political Perspective
 4. A Conceptual Perspective
 5. A Curriculum Perspective
 - 5.1. Rationale
 - 5.2. Contents
 - 5.3. Organization and Interdisciplinarity
 - 5.4. The Knowledge-Creating Procedures: Students' Activities
 6. Conclusion
- Glossary
Bibliography
Biographical Sketches

Summary

The operational consequences of educational policies for sustainable development are discussed in four steps:

- the historical perspective describes earlier initiatives that tried to overcome the compartmentalization of knowledge;
- the political perspective discusses how Agenda 21 can be implemented and raising awareness in society;
- the conceptual perspective of how sustainable development as a dynamic concept can overcome subject boundaries to deal with the complexity of current problems; and
- the curricular perspective, focusing on curriculum guidelines (rationale, organization, and procedures).

Further, open questions and dilemmas facing educational policies are described and the

main changes required to overcome these constraints are identified: changes (1) in the curriculum, (2) in teacher training, and (3) in innovative learning strategies.

1. Introduction

The idea of sustainable development came up in the first reports of the Club of Rome about 1980. These ideas are supported by people who believe that: (a) human beings are a part of nature and their existence depends on the ability to draw sustenance from a finite natural world, (b) economic activity must account for the environmental costs of production; our development cannot be stolen from the next generation's future, and (c) to maintain a livable global environment depends on a development that the whole human family can establish.

These ideas were not taken into account by educationists until the late 1980s. There seem to be two important consequences of this: first, that the plans must be made for a longer future and, second, that it is necessary to evaluate the permanent impact not only of the different policies but also of the impact of the actions of human beings.

Converting this into an operation that can be used in particular contexts may be done in two ways: ethical issues and concrete guidelines. The ethical issues include integration, stewardship, shared responsibility, prevention, and conservation. Managing the economic and the material resources for the benefit of present and future generations leads humankind to make the balance of the decisions for today's and future impact in light of this. This promotes an understanding of how economic decisions are made and the effects of implementation.

In a formal way, it appears it is not difficult to deal with these consequences: using the concept of sustainability to educate students to become aware of the possibilities and opportunities of improving the quality of life and at the same time to be equipped to make their way in a modern world as an enlightened citizen discerning enough to not be affected by powerful pressure groups.

In looking closer at the concept of sustainable development, one is confronted with hundreds of definitions. The words seem to be used by everyone (from industries to politicians) or for everything (from new products to the establishment of a new ethic). Is the concept of sustainable development the philosopher's stone, and not just another fashion? The authors would like to follow *The Economist*, which stated on September 17, 1987: "Sustainable development is still useful. Like many important ideas, it is better than nothing for as long as there is nothing better."

Here is not the place to discuss the definitions and its implications in depth; the global definition from the 1987 Brundtland Report (*Our Common Future*)—"Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs"—is sufficiently vague to cover the meanings of most of the other ones. In the following, the concept of sustainability is understood in a dynamic way, as an indispensable instrument for achieving a sustainable future. It focuses first on the relationship between social development and economic opportunities, and second on the requirements of the

environment, thus improving the quality of life in a global setting.

According to the question of educational policies for sustainable development, the operational consequences will be discussed in four steps:

- **A historical perspective:** A number of initiatives (integrated science, science-technology-society (STS), environmental science, education for all, etc.) have tried to overcome the compartmentalization of knowledge, established by the academic structure of instruction, which are not useful in the general educational system.
- **A political perspective:** On a supranational level, an awareness of sustainable development is stated as in the agreement of Agenda 21 of the Rio summit (1992). The unsolved question is how these goals can be implemented nationally and locally, how an awareness of sustainable development in societies can be achieved, and how a shift in national educational policy goals can be attained.
- **A conceptual perspective:** Sustainable development was to be understood as a dynamic concept implying that traditional subject boundaries have to be overcome in order to address complex problems of today's world. Integration, therefore, is not a value in itself but a necessity to deal with the complexity of problems that can only be solved and/or understood in an interdisciplinary way.
- **A curriculum perspective:** The political way to implement changes is through curriculum guidelines. Under the premise that a public willingness to share the ethical implications of the sustainable development concept can be achieved, the rationale of these kinds of syllabi are discussed as well as examples of what has so far been done to realize them.

Although these four areas are regarded as the main areas of consideration for educational policies, they are not given the same treatment: the sections on the political and theoretical perspective might be important, but they are not areas dominated—and thus influenced—by educational administrators. The sections on the development of educational practice described here under a historical and a curriculum perspective are the domain of educational policies, administrative outlining, and the teaching of the educational practitioners.

2. A Historical Perspective

Planning of educational policies should consider the historical perspective that will help in thinking about and understanding the most crucial issues for implementing innovations and changes. Stenhouse saw this need for history and remarks that history provides an authentic context for hypothetical actions. The force of history is evident in syllabi and textbooks as well as school buildings and indeed in schoolteachers, an overlay of generations and a time lag of views and values. The problem of planning new policies or curriculum is itself shot through with vestiges of the past, and in future solutions even radicals inevitably carry something of the past with them.

The experience of the 1990s has shown the limitations of ahistorical or transcendent approaches at the level of curriculum reform. Historical events must be known in order to develop a cumulative understanding of the historical contexts in which contemporary

policies and curriculum are embedded. The historical context reflects previous patterns of conflict and power, but it does not suffice to develop a static notion of the historical contexts and constraints inherited from the past, because they should be reexamined in terms of contemporary action. Much of the curriculum debate can be interpreted in terms of conflict between subject over status, resources, and territory. Concentrating attention at the micro level on individual school subject groups is not to deny the crucial importance of macro level economic changes or changes in intellectual ideas or dominant values in educational systems. Macro level changes, which may be actively interpreted at the micro level, present new choices to subject sub-groups, associations, and communities. To understand how subjects change over time as well as the history of intellectual ideas, it is necessary to understand how subject groups take up and promote new ideas and opportunities. This does not mean that subject groups are all-powerful in engineering curriculum change, but their responses are very important: The way society selects, classifies, distributes, transmits, and evaluates the educational knowledge considered to be public reflects both the distribution of power and the principles of social control.

2.1. Fragmentation of Knowledge

Doubtless one of the main reasons for looking at science integration and school subjects in general is the trend away from integration in the social production of knowledge: the increased specialization of knowledge, the fragmentation of information, and the sectorization of societies. These three phenomena are linked with a phenomenal increase in the amount of information being generated, in the information flows being diffused, and in the data control occurring within the framework of the great corporations (multinational companies, international organizations, financial movements, mass communication companies, etc.). Specialization itself encourages the creation of new disciplines bordering on the great areas of research in experimental science, social science, and technology (biochemistry, genetic engineering, bioethics, biophysics, etc.). The fragmentation and dramatic increase of information creates a situation in which individuals, faced by such a vast accumulation of data, are unable to control and keep up with it. The sectorization of the production of goods and services aims to bring efficiency to specific information flows at the cost of the loss, by individuals, of their sense of identity and of belonging to a particular community.

All in all, the most devastating effect of the abovementioned phenomena is the sudden loss by individuals and citizens of their global understanding of the world in which they live and, therefore, of their ability to become integrated as independent subjects in the complex, changing societies awaiting them in the near future. The loss of autonomous understanding and of an appreciation of the world and of what occurs in it diminishes our powers of expression and of action when faced by the problems that arise, expectedly or unexpectedly, for both individuals and groups in post-industrial societies. This is why it is necessary, in compulsory education, to endow students with sufficient guidelines, instruments, values, and knowledge for them to decipher the densely packed information networks they will inevitably have to live with. The challenge facing educationists then is to offer strategies for a global understanding of reality, not trying to integrate disparate knowledge or to reduce it to a minimum, but rather to provide integration processes that enable people to gain access to the world and to participate in

it.

At the school level it is argued that the school subject stands as the archetype of the division and fragmentation of knowledge within our societies. Encapsulated within the subject microcosm, broader debates about the social purposes of schooling are pursued, but pursued in an insulated manner and segmented in the range of internal and external levels and public and private arenas of discourse.

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Biographical Sketches

Kurt Riquarts studied history and physics. After working in curriculum development and evaluation projects, he is now a senior researcher at the Institute for Science Education (IPN) at Kiel University. His research interest is in educational policy and evaluation. His recent publications include *Framework for Science Education in Germany* (Kiel: IPN, 3rd edn., 2001) with Carsten Wadewitz, and *Teaching as a Reflective Practice: The German Didaktik Tradition* (Mahwah, N.J.: Erlbaum, 2000) co-edited by Ian Westbury and Stefan Hopmann. At present Dr. Riquarts is chair of the International Organization for Science and Technology Education (IOSTE).

Maria J. Saez studied biochemistry. After working in the U.K. and the USA, she is now professor for education at Valladolid University in Spain. Her research interests are educational innovation and evaluation. Recent publications include *La cultura científica: un roto educativo* (La Muralla, 1998) and *Conceptualizando la evaluación en España* (Alcala de Henares University Press, 1995). At present Professor Saez is vice-chancellor at Valladolid University and is chairing IOSTE's special interest group on sustainable development.