

Netherlands Scientific Council for  
Government Policy

# **Basic Education**

Summary of the twenty-seventh  
Report to the Government

The Hague, 1987

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# 1. INTRODUCTION

## 1.1 Background to this report

In the Netherlands and in other countries, the content of primary education has become increasingly unified over time. Similar efforts have been made in the field of secondary education in various West European countries since the Second World War, with a move away from differentiated towards comprehensive education. As part of this process, basic education was extended to the age of 15 to 16. There were various reasons for doing so, such as deferring the need for 11 or 12 year olds to decide how they want to specialize, reducing inequality of opportunity, broadening cultural participation (in the sense of exposing all pupils to important aspects of the country's cultural heritage) and, in particular, the requirements sought by industry. As part of this process, basic education became a compulsory form of generalist and vocationally-oriented education up to the age of 15 to 16.

In the Netherlands, as elsewhere, ambiguity has continued to surround the first stage of secondary education. There have been various reasons for this:

- a. the polarization of views within the educational and political system concerning the integration of secondary education in the 1970s (i.e. the debate about the universal introduction of middle schools);
- b. the assignment to individual schools of the educational responsibility for the development and content of the curriculum;
- c. the emphasis on individual development as a new educational aim, which led in the 1970s to the further individualization of education at the expense of a communal curriculum.

As a result, the content and structure of the first stage of secondary education in the Netherlands are fragmentary in nature.

Reflecting developments in society the Government asked the Scientific Council for Government Policy (WRR) in December 1983 to compile an advisory report on the desirable *content, duration and structure* of basic education in the Netherlands. In the Government's request for advice, basic education was defined as the education essential for individuals to function effectively in society. The request for advice related to primary education and follow-up secondary education, but was formulated against the background of the debate about the education system, which had come to focus on the nature of the first stage of secondary education. A new Primary Education Act had just been passed, for which reason the Council concentrated in its report on the content of basic education as it might appear at the end of this stage (i.e. at the age of 15 to 16). The Council's report draws on some thirty Dutch surveys and studies by psychologists, educationalists and teaching methodologists.

## 1.2 Definition of the problem

For the purposes of this report, *basic education* may be defined as the provision of communal, general education in the intellectual, cultural and social fields with a view to enabling individuals to develop their personality, to function effectively as a member of society and to make a well-considered choice of further study and career.

The most important characteristics of basic education are:

- a. it is concerned with *basic* skills, that is, the acquisition of knowledge, skills and insights that are indispensable for the ability of individuals to function in society and which provide an essential basis for further development;

- b. it is concerned with education for *all*, that is, the content of basic education does not differ for any specific groups;
- c. it is *communal* education, that is, the education is in principle directed towards the communal assimilation of the same curriculum. Any forms of differentiation between pupils in anticipation of further education are in principle avoided.

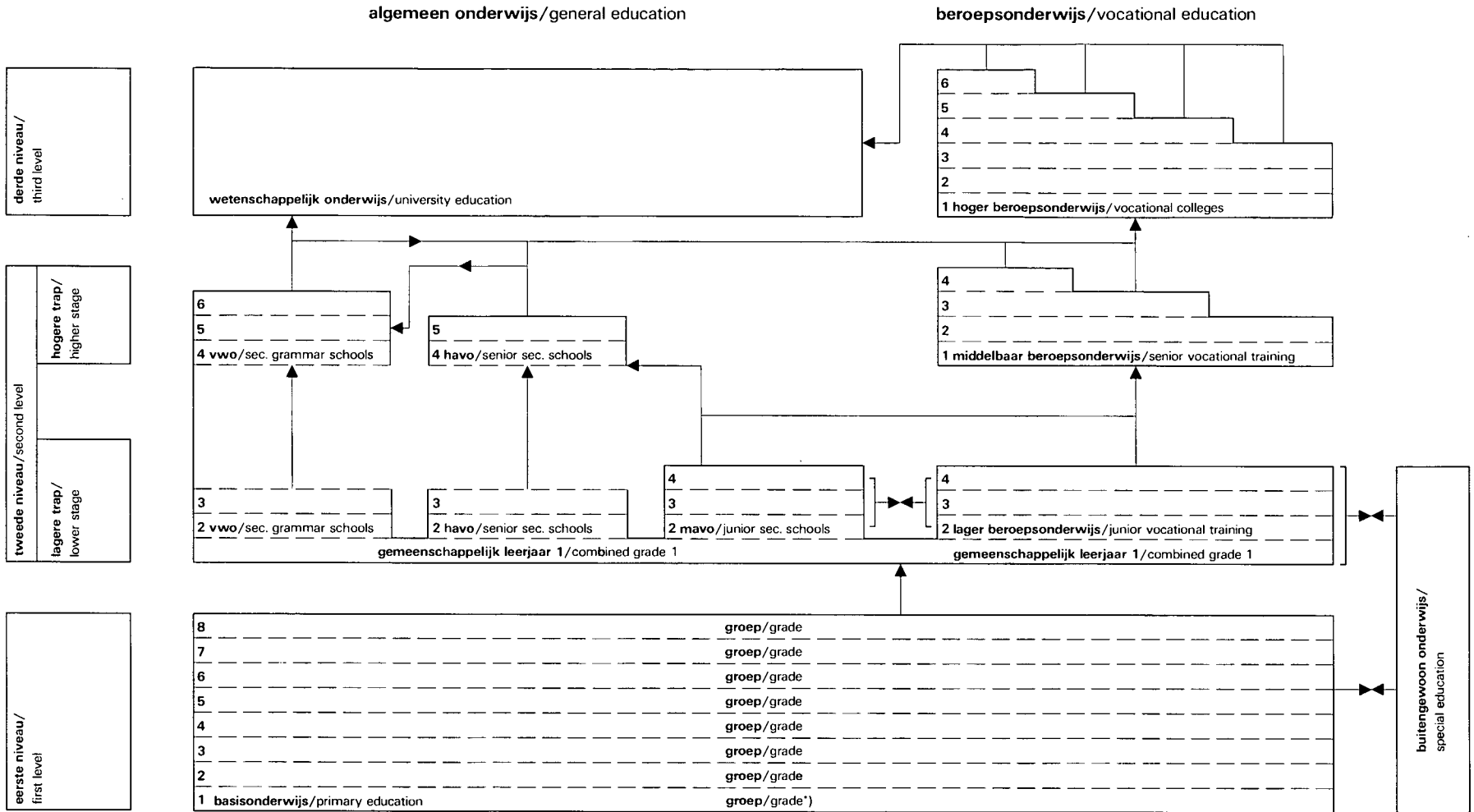
One of the objectives of this kind of basic education is to prevent pupils from being forced into a premature or primarily socially-conditioned choice of further study or career.

The report examines in detail ten key questions in the debate about a basic education and the form it should take in the first stage of secondary education. These questions are:

1. What is the balance within education between the interests of the individual and those of society? What is the balance between self-development objectives and vocational requirements, and between cultural education and the requirements imposed by economic and social developments?
2. Does the content of basic education depend solely on “society’s requirements“ or should that content deliberately be divorced to some extent from social developments?
3. Which criteria should be used in determining educational goals and the ultimate determination and selection of the numerous – in themselves commendable – possible subjects? What should the proposed *content* of basic education be?
4. How long should basic education last in order to ensure that course specialization is not based on spurious, environmentally-determined grounds? At what stage do differences in ability show, permitting a responsible judgement to be made?
5. What is the link between an extension of the period of basic education and pupil motivation, especially on the part of those pursuing junior vocational training? How should a balance be struck between the general formative part of basic education and vocationally-oriented education?
6. What is the relationship between the communal nature of basic education and the perceived need for a certain degree of differentiation? What types of differentiation are there, and at what stage of basic education should they be introduced?
7. What are the advantage and disadvantages attached to specific forms of differentiation? How can likely negative effects of differentiation be countered? Should differentiation be based on formal assessment or be a matter of informal guidance and counselling?
8. How can the quality and input of teachers – one of the main preconditions for effective education – be improved?
9. What procedures should be chosen for determining the content of basic education in such a way as to provide for a certain degree of uniformity?
10. What developments with respect to comprehensive secondary education in other countries are of relevance in helping decide the content, duration and structure of basic education in the Netherlands?

In attempting to answer these key questions a number of dilemmas arise, in that a choice often has to be made between inherently sound or desirable possibilities that cannot be selected or developed at the same time. With respect to various subjects in this report the Council has attempted to examine both sides of the argument thoroughly before arriving at a considered judgement, in the knowledge that it is not always possible to make rigorous or definitive choices – based on scientific insights – in the face of such dilemmas. Religious and political convictions are another complicating factor.

Structure of full-time education in the Netherlands



\*) starting at 4 years of age : compulsory at 5

## 2. SOCIAL DEVELOPMENTS AND BASIC EDUCATION

### 2.1 Introduction

The Council was asked to examine developments in society and to indicate the potential implications of such trends for basic education. Present and future developments in society are often analysed in the hope of deriving specific indications for a particular type of education. The Council has reached the conclusion that this holds true to a limited extent only. The relationship between social trends and the content of education tends to be indirect and becomes visible in the form of gradual shifts and adjustments in the curriculum in existing subject areas.

The most important conclusion to be drawn from social developments is the requirement for a *general increase in the level of education for all*. This is of relevance both for the subsequent career choices of individual pupils and for the functioning of society in general. Basic education can provide a means of arriving at such a general increase in the level of education. The requirements of a higher level of education and an improvement in quality also apply to traditional vocational training. Employment will in the future make increasing demands with respect to language ability, logical and mathematical thinking and technological understanding.

The Council considers that the introduction of "general techniques" as a subject for all pupils would be desirable, together with the (temporary) introduction of a new "computer studies" subject until such time as the new information-processing techniques have been incorporated as an integral part of other subjects. Until that time, a separate grounding in computer studies is required in order to make up lost ground or prevent pupils from getting behind in this field. The costs associated with the introduction of these new subjects for *all* pupils will need to be accepted as one of the consequences of the need for improved, higher-level basic education.

The Council's general conclusions about the "requirements" imposed on basic education by social developments were reached on the basis of surveys it carried out in four fields: demographic trends, socio-cultural developments, technological developments and economic trends. A summary is provided below of developments in each of these fields and of the implications for general basic education.

### 2.2 Demographic trends: consequences for basic education

The decline in the number of pupils should not have any great effect on the content of basic education. The demands imposed by society, the labour market and further education are not, in principle, affected by demographic factors.

The same does not apply to educational *facilities*, which are directly related to the number of pupils. The predicted decline in pupil numbers accordingly has a rapidly discernible effect. Schools in both rural areas and in the towns and cities may be closed or find themselves under pressure to amalgamate. The national figures indicate the seriousness of the problem: there are some 1400 schools for general secondary education and some 1300 for junior vocational training, of which several hundred are under threat of closure.

Major uncertainty can be created as a result in both rural areas and the large centres of population. Competition between different types of schools, and between schools of the same sort, will increase sharply. Uncertainty about the procurement and continuation of teaching appointments and the

often radical changes in the work situation when schools are merged can impose severe strains on teachers.

Variations in pupil numbers are a fact of life in education. After a period of steady growth, a sharp fall in numbers is particularly difficult to assimilate. Although little if anything can be done about such trends, it must be ensured that concern and uncertainty among teachers do not reach such proportions as to interfere seriously with the introduction or maintenance of a system of basic education geared to the needs of the time.

Migrant children frequently come from families at a socio-economic disadvantage. Such children need special attention, just like Dutch children in comparable circumstances. Migrant children are unlikely to return to their country of origin in any great numbers, for which reason the extra attention devoted to these children should not form a (partial) replacement of the Dutch basic education in the form of lessons in their own language and culture. In order to close the gap these children must be offered at least equal opportunities in education, which can only be done by providing them with the full basic education for Dutch children. At the same time, basic education needs to reflect the fact that Dutch society has become more multi-cultural in nature, with room in the curriculum (in addition to basic education) or provision out of school for attention to the culture, language and separate identity of ethnic minorities.

Quite clearly children in these kinds of circumstances need extra educational support. It may, for example, be necessary for them to be addressed in their own language for a certain initial period; this need is, however, more likely to be felt in the first few years of primary schooling rather than at secondary level, and will diminish the longer migrants have been in the country.

### **2.3 Socio-cultural developments: consequences for basic education**

Participation by women in the labour force has increased greatly in recent years. In view of the work that most women do *now*, this may be seen as a contribution towards and expression of the aim of equal rights for women. As regards such rights, basic education can help eliminate the sorts of spurious motives that can sometimes play a role in the choice of school or career for girls. Basic education will need to facilitate participation by women in the labour process on equal terms. This means that boys and girls should receive the *same basic education*.

If we examine changes in the familial life-cycle, we find that most people are likely to face a period in their lives of living alone, and the question arises as to whether greater attention should be paid in basic education to looking after other people and oneself. In fact many aspects of and subjects in the present system of education already stress these matters or could be developed. Many relevant aspects are readily picked up, and can be quickly learned outside school if the need arises (e.g. cooking). Other skills are less readily acquired, but also do not lend themselves readily to being taught in school. These considerations lead to the conclusion that in so far as these aspects can and should be dealt with in school, they should largely be incorporated into existing subjects (see 4.2.11).

Despite changing perceptions about work and the place of work in society, the Council sees no reason for concluding that preparation for working life is any less important for the younger generation, and basic education should remain directed towards this goal. The Council does not, therefore, regard preparation for the so-called "leisure society" as a separate task for basic education. Nevertheless, the meaningful use of leisure does (in a limited sense) enter into art education as an essential aspect of basic education. No specific subjects need be introduced to teach individuals how to operate in the numerous organizations forming part of the "organization society": the most important precondition is the provision of a sound basic education for as many citizens as possible. The subjects of civics, economics and history should more than suffice for the purpose of citizenship training.

There is little evidence to suggest that the home situation is evolving in such a way that schools need to assume some of the traditional upbringing tasks of the family. On the other hand, the problems pupils encounter at home and in their private lives are likely to come increasingly to the fore at school. These problems are best dealt with on an individual basis by teachers and student counsellors rather than by creating a new subject such as interactive skills or personal development. These aspects can also be dealt with indirectly in the course of passing on cultural traditions: the stimulation of interest in literature, drama and other aspects of the cultural tradition (including modern culture) can provide young people with the opportunity of recognizing their own problems in other people's work, thereby helping those problems to be mastered. Bringing pupils into contact with their cultural heritage can help equip them for self-development.

#### **2.4 Technological developments: consequences for basic education**

With respect to technological developments, including those in the field of computer science, the Council believes that what is called for is not so much totally new skills or knowledge in basic education as greater recourse to existing knowledge and skills.

The way in which information is processed, stored and transmitted is subject to significant change in many areas. In some cases these changes are so radical, formalizing and reductive that there tends to be a loss rather than gain in information. Developments indicate the growing importance of being able to distinguish superfluous from usable information and to return information in reduced form to a more meaningful form. Since information is dependent on the context and often obtains its particular value only once it is applied, the actual application of information will be of major importance. In those cases where the information itself rapidly gets out of date, learning to apply information may even become as important as the information itself.

Technological and economic developments also indicate the importance of high-grade technical specialists. This applies not just to university graduates with high-tech qualifications but also to less highly trained specialists with solid vocational training. To what extent do such people need to specialize at an early stage, and to what extent might this be allowed for in basic education? These questions are important because a lengthy basic education, in which everyone is given the same instruction and career specialization is deferred, could create barriers and lead to loss of time when it comes to high-grade technical specialization.

In general terms it is fair to say that in the high-tech field, specialization has become narrower and much more widespread and that the nature of specialization is constantly shifting. In view of the limited scope and inherent slowness of basic education, it is difficult to make allowance for these rapid shifts. The same also applies quite commonly in vocational training, which can be unable to keep up with the pace of change. In these circumstances vocational training becomes reduced to the acquisition of basic job skills, with specialization and more specific training taking place closer to the point of actual application, i.e. in industry itself. The increasing incidence of supplementary company training does not, therefore, necessarily constitute an implicit condemnation of the system of basic education and vocational training, but may instead be regarded as the "natural" course of events. This shift in the final stage of specialization from schools to companies does not mean that the schools have less to do. In the first place the quality of education has become of greater importance, while secondly instruction in technical and other basic principles remains essential.

In general it is fair to say that the formation of a technical elite and the lengthening of basic education are certainly not mutually incompatible, provided that basic education satisfies the requirement of an improvement in the quality of education. Apart from the rapidly shifting nature of



specialization, other arguments for deferring specialization include imperfections in selection procedures and the need to give pupils time to decide their true preferences and abilities.

In the light of these developments, the Council has also gone into the merits of making computer studies part of the basic education curriculum. By computer studies is meant that aspect of information science with which everyone will need to have at least some familiarity in the future.

One question that arises is whether everyone should be able to programme a computer, if only in simple computer language to deal with simple problems. The Council does not, however, regard this as a basic skill. For those who wish to proceed to professional training in computer science, early familiarization with simple programming during basic education confers negligible advantages. Moreover, a number of skills exercised with the aid of programming already form part of the curriculum.

The ability to programme a computer is not, therefore, an indispensable skill and a separate computer studies subject is not vital. Familiarity with using computers, however, is a different matter. Many people will later come into contact with pre-programmed information and computer systems, and this demands a certain amount of skill in using those systems. Providing due restraint and caution is exercised, computer and related information systems can be an aid in the transfer of knowledge and skills at school. For these two reasons – building up a certain level of competence in using computer systems and the support that computers can provide in the transfer of knowledge and skills in basic education – the use of information and computer systems deserves to be approached positively. The risk of excessive expectations and undesirable applications should, however, constantly be borne in mind.

## **2.5 Economic trends: consequences for basic education**

Three developments are of importance for employment in the future:

- a. the need for industrial restructuring in response to international specialization. A high-tech sector is vitally important for the process of industrial adjustment and, although the sector will never be a major employer, highly trained specialists in technical fields will be required;
- b. the continuing application of information technology in production processes will lead to a reduction in the number of people directly involved in production. Whether this negative effect on employment will be offset will largely depend on whether the application of information technology will lead to an improvement in Dutch competitiveness;
- c. the growth in employment in the services sector depends primarily on the industrial sector, not just on account of the complementarity between the two sectors but also on account of the contribution that manufacturing and complementary services can make to a resumption in growth of disposable income. The resultant growth in private consumption, coupled with changes in the pattern of consumption, may lead to a rise in employment in the services sector.

The production technologies now becoming available offer great scope for job improvement in many areas. This should not, however, be seen solely in terms of the humanization of work. The upgrading of labour also flows from the changing market requirements for industrial products and the relevant production processes. The need simultaneously to satisfy the requirements of efficiency, quality and flexibility requires a different approach characterized by participatory rather than supervisory management, teamwork and technically qualified staff.

The change in existing professional qualifications and the coming into being of new ones mean that the labour force – including higher age brackets – stands in need of continual retraining. Industry will therefore have to pay considerable attention to internal training, while the education system will need to equip future employees with the ability to adapt in an

uncertain future. Education will have to teach people how to learn. Vocational training will need to equip people for a range of possible functions, rather than just one specialized job, and the level of education will need to be correspondingly higher.

The potential labour force will continue to grow for demographic reasons and because a higher proportion of people seek work, although the rise will taper off after the year 2000. The increased rate of participation in the labour force by women will be structurally influenced by the higher level of education, smaller family size and the move towards equal rights for women.

The school-leavers entering the labour market each year will of course pull up the general level of education of the labour force. The proportion of people with basic education only will continue to decline, while the number of persons with senior and higher vocational training and university education will increase in both absolute and relative terms.

Analysis of the category of unemployed youth reveals the importance of apprentice-type qualifications for obtaining a job. It is, therefore, important that the stages of general basic education/vocational training/apprenticeship dovetail smoothly. In this sequence, junior vocational training should occupy an important position. In the Netherlands, however, this type of training has become firmly labelled as "residual" education. The negative reasons given for selecting this type of school, the narrow social background from which most pupils come (i.e. the lower socio-economic groups) and the type of counselling pupils receive at primary level with respect to choice of secondary schooling make it clear that this type of school is seen very much as a last resort. The Council would therefore conclude that the government, employers, employees and school administrators should jointly do all they can to improve vocational training with respect to the basic education and preparation for working life provided at these schools.

## **2.6 Out-of-school education: consequences for basic education**

Leaving aside the family, schools are not of course the only place where children develop basic skills: the social activities in which children take part out of school are also important. Changes in out-of-school education would release schools from certain educational tasks, so that certain subjects or parts of subjects necessary for the development of basic skills would no longer need to form part of the timetable.

The full report examines these out-of-school influences, especially the media: radio, television, newspapers, books and libraries. The general conclusion to emerge from the studies commissioned by the Council is that while the transfer of knowledge and skills outside the school is extensive, it is often unstructured and heavily dependant on the individual child and its social background. Schools cannot and should not, therefore, rely totally on out-of-school supplementation, since the existing differences in learning ability and achievement would then grow unchecked.

In so far as changes are taking place in the field of out-of-school education it may be concluded that these do not directly relieve schools of some of their burden. Schools will continue to retain their central position in basic education for a long time to come: the out-of-school transfer of knowledge and skills and basic education in schools is complementary rather than competing.

## **2.7 Conclusions**

The general conclusion to emerge from the above is that, during the coming decades, it will not so much be a matter of adding totally new skills and knowledge as of drawing on skills already being taught. Adaptability, the capacity to learn and the ability to select and apply information are already important, and will become more so. In order to enable existing skills to be used more effectively, it will be necessary for the quality of basic education to be improved.

Given the results currently being achieved and the length of time required, an improvement in the quality of basic education would in all probability mean that this stage of the education process would have to be extended, e.g. up to and including grade three of secondary education. There are also other arguments in favour of such an extension, such as the flaws in selection procedures and the need to give pupils time to sort out their true preferences and aptitudes (i.e. deferment of selection).

### 3. CHOICE OF BASIC SKILLS FOR INCLUSION IN BASIC EDUCATION

#### 3.1 Introduction

There is no one-to-top relationship between basic skills and the subjects making up the basic education curriculum. The desired content of basic education may be defined in terms of a number of characteristics, such as independence, perseverance, interest in culture, productivity, decision-making ability, accuracy and orderliness, the ability to use sources and so on.

All these in themselves admirable characteristics, which make desirable basic skills, can, however, be acquired in all sorts of ways, both in and out of school, and have no direct association with particular elements of the basic education curriculum. This is the problem of the relationship between basic skills and basic education: the various desirable skills can readily be expanded into a long list, whereas the component elements of the curriculum are by definition limited by the time available and the school situation. Nevertheless, there is a marked tendency for people to “translate“ perceived skill shortcomings into a corresponding desire for new subjects or greater attention to particular aspects of existing subjects. On the basis of presumed or established deficiencies in social skills, a case is, for example, made out for the introduction of “interactive skills“ as a subject; similarly the rising incidence of suicide among schoolchildren leads some to argue in favour of the introduction of “personal development“ as a compulsory subject. Refuting such arguments is particularly difficult; the skills in question are ones that one would genuinely like to see developed to the full among schoolchildren. Similar arguments are encountered with respect to the development of new skills associated with subjects such as peace studies, world studies, European studies, sex education and road safety.

These examples indicate the problem of basic skills to be one of choice. Similarly, structuring the content of education is a selection problem; a particular package of basic skills can be divided among the different subjects in various ways. There are no hard-and-fast or theoretical arguments in support of any one choice.

#### 3.2 What is basic knowledge?

##### (i) *As a basis for development*

Basic knowledge is generally taken as meaning mastery of elementary principles: a person has a basic knowledge of chess if he knows how the pieces move and knows the object of the game; of French if he can make himself understood and follow a conversation, and of algebra (“basic algebra“) if he understands a minimum number of formulae and knows how to use them. In some cases basic knowledge relates to “knowing“ a formula, but it is often more important to know *how* that formula has been derived. Basic knowledge is, therefore, the ability to analyse phenomena, establish their essence and represent them in an abstract formula. Basic knowledge thus extends beyond abstract knowledge; it covers factual knowledge and in particular understanding of the complex relationship between reality, experience and abstraction. Basic knowledge must be able to serve as a basis for development for further knowledge, in the sense that knowledge can be generalized and transferred to different situations or applied by analogy. In addition the term “basic skill“ often refers to the ability to put the knowledge that has been acquired to some sort of use.

Basic knowledge of and skill in a modern language comprises 1) a knowledge of the structure of the language, or grammar, and 2) the ability to do something with it, i.e. conduct a conversation, as well as 3) insight into the human environment of that language, i.e. a knowledge of the relevant culture and literature.

Similarly a basic knowledge of economics may be said to consist of 1) a knowledge of the structure of the subject, i.e. the principal laws and relationships; 2) the ability to do something with that knowledge, such as budgeting, book-keeping or drawing up/reading a profit and loss account; and 3) insight into the economic world of banking, industry, public finance, taxes and so on.

A basic knowledge of nature would consist of 1) a knowledge of the fundamental laws of nature as described in the structure of the natural sciences (together with their mathematical basis); 2) the ability to deal with natural phenomena such as force, mass and energy, and knowing what takes place when electricity or chemical substances are used; and 3) insight into the culture created by the natural sciences, i.e. an understanding of the scientific view of reality.

Three constants recur in the above examples:

1. a knowledge of basic structures, often of an analytical and abstract nature;
2. the ability to do something with that knowledge;
3. insight into the cultural environment, i.e. the ability to orient oneself in a complex environment.

Basic skills (i.e. knowledge, skills and insights) thus broadly cover these three elements, which are moreover interlinked. If the imparting of basic skills were to be confined to just one of the three, for example “book learning“, or “practical guidelines or rules of thumb“, pupils would find themselves seriously handicapped in practice. It may also be noted that these three elements apply just as much to the humanities as to the natural and social sciences. Under this interpretation of basic skills, the antithesis between “cognitive“ and “practical“ skills is seen as a spurious one, and for educational purposes it is important that all three aspects come into play. Basic knowledge is, therefore, more than just the assimilation of information.

The relationship between the above constants in basic education is by no means problem-free. If the knowledge of basic structures, which is often analytical and abstract in nature, comes to play too great a role in education, there is a danger that knowledge of “the subject“ will start to become an aim in itself. Pupils often have difficulty in relating school knowledge to the world they live in, and also in applying the knowledge gained in one field (e.g. mathematics) to other subjects (e.g. physics or economics). The step from knowledge to skills and insights and from abstraction to application is often a difficult one. This can adversely affect motivation and academic progress, but above all it can undercut the whole process of basic education, for which reason basic education should to a large extent be relevant and practically-oriented. To some extent this approach to basic education also coincides with what is sometimes termed “fitting in with the child’s perception of its environment“. This can, however, be a misleading description; relevant and practically-oriented education need not necessarily take the immediate daily environment as the starting point. Research has indicated that in the early years of secondary schooling, pupils are not just interested in the familiar and close at hand but, more particularly, in that which is exotic, novel and unknown and hence exciting and challenging.

Greater attention to the world outside the school is not always positive. In shifting to more relevant and practically-oriented education there is a risk of overshooting towards adult problems which – at least in the form in which they are often presented – go beyond the child’s experience. Needless to say this can have an adverse effect; particularly in relation to the major social issues for which adults themselves have no answer, feelings of impotence can be aroused among children, thereby leading them to shut themselves off from what the school has to offer.

Education that is directed towards children's experience should be concentrated in the early stages of basic education, with the more structural elements of subjects being added later. At the right educational moment, instruction in the organizing principles of a subject will enable the pupil to see things in perspective. Undue concentration on the context or on the application side of education can result in pupils become unable to distinguish the wood from the trees – in which circumstances those most likely to suffer are the weakest pupils.

The question as to whether pupils find themselves permanently handicapped in their citizenship role if they are not exposed to one or more of the elements of basic knowledge provides an indication of which skills should form part of the basic education curriculum and which should not. This may be illustrated with an example: is cycling a basic skill, and should a basic knowledge of cycling be regarded as an essential element of basic education? Cycling is, unquestionably, a vital skill in Dutch society. Pupils will not, however, be seriously handicapped if this skill is not taught at school: most will just pick it up or be taught by their parents. At the same time, it cannot necessarily be assumed that school children will all have an understanding of the laws of motion ("basic knowledge") or insight into the artificial environment (i.e. traffic regulations and transport in general). From this it may be deduced that road safety should be taught at primary level but not cycling itself. In terms of preparation for working life, "bicycle repairing" in a technical sense could be included in basic education as an optional subject, but it would not form an indispensable aspect: however desirable this might be in itself as a skill, people do not suffer serious or lasting disadvantage if it is not taught at school.

The same line of reasoning could be applied to all sorts of other skills that come up for discussion, such as cooking or the ability to read a rail timetable. On the basis of these considerations the following selection criteria for basic skills may be derived:

- a. a skill which, if not acquired, cannot be acquired at a later stage;
- b. a skill which, if not acquired, remains a lasting obstacle to effective participation in society;
- c. a skill that acts as a basis for building up further knowledge and developing skills;
- d. a skill that is not imparted outside school.

These selection criteria are not, however, conclusive, since much depends on where pupils will experience obstacles if they fail to acquire certain basic skills at the basic education stage: in the labour market, in later employment, in unpaid work, in further education or in their leisure time.

(ii) *As a preparation*

The uncertainty as to where obstacles will be encountered means that basic knowledge needs to be viewed not just as a "basis for development" but also as a "preparation", in the sense of knowledge required for acquiring further knowledge. Basic skills are those skills that are required in order to perform other activities, especially participation in society, successfully. Basic skills interpreted in this manner would include reading, writing, reckoning and ability to express oneself and conduct a conversation.

Basic knowledge as preparation therefore takes different forms:

1. preparation for citizenship;
2. preparation for working life;
3. preparation for further education.

A basic education required to fulfil this preparatory function for "society", working life and further education runs the risk of becoming very extensive. The three preparative functions are to a certain extent in conflict with one another: concentration on preparation for working life could be at the expense of the acquisition of skills and knowledge required for further education. Conversely, the assimilation of knowledge solely with a view to further education, e.g. university study, can lead to serious deficiencies in citizenship skills; an overly passive knowledge of a language, or lack of

familiarity with technology, would, for example, have an adverse effect on a person's ability to function in society.

Basic education will not, therefore, be able to impart all the basic skills required for a complete preparation in these three spheres. A balance will instead need to be struck in which none of the three preparative functions is neglected.

In this respect the ultimate aim of basic education becomes important. Looking to future choices, individual pupils may aspire to more than just a minimal basic education. As just noted, basic education should strike a balance between the skills required for each of the three spheres. Anything going beyond basic education can concentrate on preparation in a particular direction. Depending on their preferences and aptitudes, pupils could therefore add a differentiated element to the communal education, taking the form either of greater study in depth of the basic education curriculum or a broadening of the curriculum itself.

### 3.3 The selection of basic skills

Notably little systematic research has been conducted into the basic skills and characteristics that should form an indispensable part of basic education. The literature is scarce and marked by major variations in the degree of abstraction. Apart from skills such as "ability to think critically" and "independence", skills such as "ability to read a newspaper", "cooking" or "knowledge of a citizen's rights and obligations" are sometimes put forward. The OECD study *Compulsory Schooling in a Changing World* cites eight broad and abstractly formulated fields of experience as the foundation for a common core curriculum, namely aesthetic/creative, ethical, linguistic, mathematical, physical, scientific, social/political and spiritual.<sup>1</sup> Deciding on a reasoned foundation for basic education is harder in the first stage of secondary school than at the primary level because it is more difficult to strike the appropriate balance between general and more specific, vocationally oriented skills. The same applies to the balance between the skills for those who proceed to further study and those who wish to leave school at the minimum school-leaving age. The highly abstract spheres of experience provide some indication of what is needed, but the way in which they are "translated" in practice can almost literally go in any direction; much depends on the practice of the institution in question.

In the Netherlands, the Dutch educationalist Van Bruggen has made a valuable attempt to provide an indication of the types of skills likely to be needed in the future. Van Bruggen has done so on the basis of various departments of life for which pupils need to prepare themselves: professions and business; technology and trades; family and other primary contacts; politics, administration and the system of government; transport and communications; and recreation and leisure. For each of these departments of life he assigns special preparative fields of learning.

"By analysing these life situations it should be possible to discover the qualifications, aptitudes or basic skills required to cope with them. Once the necessary qualifications have been identified, a comparison with data from the social sciences, the disciplines relevant for instruction at school, and educational theory should make it possible to arrive at a soundly-based choice of education content, organization, teaching methods and so on"<sup>2</sup>.

This analysis is, however, set against a rather speculative conception of life in the first quarter of the 21st century and so banks heavily on a particular vision of the future: the pupils of today are required to prepare themselves now for what they will not be facing until their thirties and forties. For all the merits of this method, it is therefore very vulnerable. Is there any point in preparing pupils aged between 14 and 16 for a situation in the year 2020? It would be better to impart basic skills that pupils most needed in the first few years after completing their education and that gave them an adequate

basis for acquiring other skills they needed in life, experience being, after all, the best teacher.

Other sources touching on the problem of identifying basic skills, and some of the advisers consulted by the Council, put forward definitions such as “promotion of moral, religious, ideological and political values and beliefs“, “cultural participation“, “practical skills in daily life“, “improved voter behaviour“, “familiarity with cultural background“, “critical literacy“ and so on.

Howard Gardner points out, however, that a description of curriculum and educational objectives at this level of abstraction is not very helpful. The more specifically the objectives are formulated the better. “Educating individuals to discover their potential“ is less precise than “achieving sufficient literacy to read a newspaper“. In the latter case, it is possible to specify what needs to be done educationally for the objective to be achieved, and to devise ways of assessing success, whereas with the first type of aim there is no such scope for evaluation.<sup>3</sup> Statement of explicit goals also brings to the fore potential conflicts or contradictions. The vagueness with which the objectives of basic education are presented in official policy documents, can therefore mask a large number of conflicts behind an exemplary – and largely incontestable – set of wishes.

The method employed by Gardner himself for determining basic skills is based on research into different kinds of intelligence. Gardner distinguishes six mutually independent forms of intelligence<sup>4</sup>:

- linguistic intelligence;
- logical-mathematical intelligence;
- musical intelligence;
- spatial intelligence;
- bodily/kinesthetic intelligence;
- personal-social intelligence.

Gardner sees these types of intelligence as basic skills and examines the extent to which people who failed to acquire those skills may be said to lack the corresponding form of intelligence. Gardner also examines the component elements of these basic skills and places them in a social perspective, indicating for example why literacy is an indispensable skill. All healthy people are capable of developing their linguistic intelligence, a form of intelligence that everyone possesses and that is necessary for everyday existence.<sup>5</sup> Why, in Gardner’s view, is language so important? He gives four reasons:

1. the rhetorical aspect: the ability to use language to convince other individuals of a course of action. This is the ability that political leaders and legal experts have developed to the highest degree;
2. the mnemonic potential of language: the capacity to use this tool to help one remember information, ranging from shopping lists to rules of a game and procedures for operating a new machine;
3. the role of language in explanation: teaching and instruction occurs through language, which supplies the metaphors, adages and sayings;
4. the reflexive aspect: language enables people to reflect on themselves.

These four aspects indicate why linguistic skills and language should be treated as part of people’s basic equipment in life and form a powerful argument for making the development of linguistic skills a major part of basic education. The three elements characteristic of basic skills are also to be found, implicitly, in Gardner: 1) knowledge of the rules and grammar; 2) skill in speech and expression; and 3) sensitivity towards and insight into the meaning of words and sentences. Seen at this level and as systematized and supported by educational theory, “linguistic skills“ can, therefore, be treated as one of the essential basic skills.

Gardner applies the same approach to the other five forms of intelligence.<sup>6</sup> Logical-mathematical intelligence or skill is particularly important for the formal, mental operations of increasing importance in our society, and for the capacity to deal with abstract symbols standing for objects, relations, functions and other operations. Logical thinking also forms part of this skill,



and can, up to a certain point, be learned by everyone. The capacity for abstraction and generalization are basic skills that can be learned through mathematics, and which have become indispensable in many areas of modern industrial society. Scientific endeavour and the drawing up and testing of hypotheses are also grounded in logical-mathematical skills.

With this theory of Gardner it is possible to lay a solid theoretical foundation for the content of basic education, with special emphasis on language and culture, knowledge of the basic structures of mathematics and the natural sciences and the acquisition of social skills and citizenship training. At the same time, however, the six basic skills distinguished by Gardner do not correspond precisely with the content of individual subjects.

### 3.4 Head, heart and hand: in search of balance

In its request for advice to the Council, the Government names a number of other skills, namely social, expressive, analytical, emotional, technical and manual skills. (Motor skills might also be added to this list.)

The emphasis often placed on these skills springs from the desire to compensate for the alleged cognitive bias of traditional education. It is, however, questionable whether modern culture – including school culture – can still be designated as overly cognitive. A striking feature of the above summary of skills is the way in which each of them forms one *aspect* of skills in general. By splitting skills into aspects there is a risk that certain aspects will become too closely linked to certain parts of the curriculum or even that new subjects may be specially introduced. Thus some argue in favour of a special “interactive skills” subject in order to impart social skills, and for “creative arts” to impart expressive skills. It would not, however, appear possible for the content of basic education to be determined on the basis of particular aspects, since various aspects of desirable skills will and indeed must be acquired in any given subject. The reading of Hamlet in an English class will, for example, simultaneously develop social, expressive, analytical and emotional characteristics. An aspect-oriented approach on the other hand, can serve to highlight what are in fact largely spurious distinctions, such as that between cognitive and expressive skills. Many expressive skills require a firm cognitive base, while the assimilation of cognitive skills will proceed hand in hand with the acquisition of social and expressive skills (e.g. the group solution of a maths problem).

The expression “head, heart and hand” indicates a desire to arrive at a particular *combination* of skills. Such integration is not, however, readily achieved since it finds little serious practical expression in the surrounding culture. It would appear as though the shortcomings and imbalances in the surrounding culture need to be redressed by means of education. In the absence of practical examples of such integration in science and culture, however, such a requirement imposes an excessive burden on the content of basic education.

The main aim of such integration is to prevent basic education from bias in either a cognitive or a technical/expressive sense. The aim of basic education is precisely to overcome such contradistinctions among pupils. In analysing the objectives of basic education and the nature of basic knowledge, it was seen that it is not an “either/or” choice; overcoming such contradistinctions is much more a matter of the *how* than the *what* of basic education. In other words, the way in which lessons are given and various objectives simultaneously taken into account is more important for basic education than the simple choice of deciding to teach just the abstractions of a particular subject, or just the concrete facts or context. One of the tasks of basic education is to find a didactic approach in which these apparent contradistinctions are by-passed.

### 3.5 Conclusions

The historical and social background to basic education does not provide any immediate frame of reference for determining the desired content. The analysis of the meaning of basic knowledge resulted in a number of indications of the *nature* of the elements of basic education, namely abstract knowledge of the basic principles, practical skills of application and insight into the artificial environment.

On the basis of an analysis in the Council's report of various aims of basic education and of the selection criteria referred to earlier, it may be concluded that special emphasis should be placed on the following skills:

1. linguistic skills and literacy;
2. knowledge of Dutch history and culture and of other cultures;
3. logical-mathematical knowledge and skills;
4. knowledge of nature and technology;
5. preparation for working life and job orientation;
6. expressive skills.

None of these skills can be made up for if not acquired at the right time, and failure to acquire them will remain a lasting handicap. In addition they all contain a nucleus for further development acquired only with great difficulty outside school.

The analysis of social trends indicated that the level at which such general skills are acquired must not be set too low, and that there was no a priori reason for introducing totally new skills.

These skills have been translated below into a divergent set of subjects. In doing so the aim has been not to depart too widely from existing subjects and courses, thus avoiding an undesirably radical break with the current content of secondary education.

## 4. THE CONTENT OF BASIC EDUCATION

### 4.1 Basic principles

Given the major differences in the content of education both between and within schools, and given also the indeterminate level reached in non-examination subjects, secondary education in the Netherlands does not at present provide a guaranteed basic education for all.

Our knowledge of the present content of education contains significant gaps. We know the subjects that are provided but little if anything is known about how much time each pupil spends on each subject and what the content of the courses is. This means that in defining a universal basic education, there is little if any possibility of referring back to a communal core content of the subjects taught in the different schools and types of schools. We simply do not know whether such a communal hard core exists.

In the Council's view, the content of basic education should follow that of the present curriculum. A rearrangement of existing subjects in which elements from the various subjects were brought together (with, for example, a view to greater social relevance) would be both premature and risky – premature, because the presumed advantages of such a rearrangement (improved pupil motivation, and greater social relevance) are not fully established, and risky because the clarity and quality of the curriculum would be seriously at risk.

### 4.2 The pros and cons of various subjects

The proposed curriculum for basic education (see 4.3) is based on an analysis of the following potential subjects: Dutch, modern foreign languages, mathematics, biology, physics, chemistry, computer studies, history, civics, social studies, geography, economics, general techniques, domestic science, health and hygiene, music, drawing, handicrafts, physical education, vocational subjects, and religious and humanistic instruction. The analysis of the potential place of these subjects in basic education draws on a number of studies compiled by educationalists on behalf of the Council.

#### 4.2.1 *The national language: Dutch*

##### **Why Dutch in basic education?**

The place of Dutch in basic education is probably the least contentious of any subject. Children need language as an instrument of further study and as an effective and efficient means of communication in social intercourse; they need language as an expression of their cultural tradition and as a factor promoting unity in a plural society; and a sound knowledge of Dutch is conducive to linguistic skills, especially the oral and written presentation of analytical thought.

##### **What content?**

What should education with all these aims cover? Not everything has to be learned at school; language skill has a nucleus and a periphery. Each child acquires the nucleus of its mother tongue by the age of six, in the form of a basic vocabulary and the main rules of grammar. Schools are required to concentrate on peripheral skills, i.e. those skills that most pupils would be unable to learn without the help of the school. This is important because most of the peripheral skills are necessary for participating in social life.

Basic education needs to cover such aspects as conversational skills, phraseology, the production and interpretation of complex sentences and the use and understanding of written Dutch.

To achieve the aim of social preparation, the teaching of Dutch must accord priority to education and training in those peripheral skills that are frequently needed and/or which are of decisive social importance for any user of the language. Opinion surveys on language use among former pupils of junior secondary and junior vocational schools have identified the following skills:

Oral linguistic usage:

- a. ability to provide precise descriptions, e.g. of the way home or a person's appearance;
- b. making enquiries (e.g. at the post office or job centre);
- c. listening to news broadcasts, etc.;
- d. conducting business conversations with partners of higher social status (e.g. one's employer or the doctor) in which one's own interests are at stake;
- e. the ability to pose or answer questions during a course of instruction or examination.

Reading:

- a. reading a newspaper;
- b. looking up information in a file, radio and TV guide, telephone directory or dictionary, etc.;
- c. ability to read business letters and official documents;
- d. ability to understand examination questions.

Writing:

- a. jotting down notes, e.g. during a telephone call;
- b. writing a letter on a business matter to an official body;
- c. writing a letter of application;
- d. doing written tests.

Competence in Dutch is not the same as competence in their mother tongue for all pupils in Dutch schools. For some, Dutch is a second language, and basic linguistic skills that come automatically to native speakers have to be learned as a peripheral skill. This means that during the basic education period they have to be trained in speaking and listening in everyday linguistic situations.

For the development of analytical ability, the teaching of Dutch has to include learning to use the written language as an analytical aid; language may be regarded as a "helpmate" for obtaining insight into a problem. Language in written form permits an individual to order his subject matter, to construct subtle or complicated linguistic and logical connections and to think things through at leisure. The ability to put together a lengthy, analytical text is a skill that should form part of the teaching of Dutch, in the sense that the writer must be free to formulate his thoughts without being distracted by the actual business of writing. Not everyone has to be able to write essays; but learning to take down and use systematic notes can also help develop analytical ability.

The aim of the transmission of culture is of course furthered by instruction in the skills noted above, which form part of the linguistic culture (including literature) of the Dutch-speaking part of the world. Familiarity with classical and modern literature should therefore form part of basic education; this applies also to pupils in junior vocational education.

### **Introduction problems**

Given the lack of knowledge about the way in which subjects are at present taught in the early years of secondary school, it is difficult to say to what extent the content of Dutch instruction as proposed above would represent a break with present practice. Closer attention to peripheral

linguistic skills and hence to literacy standards might appear to some teachers as a departure from the aims of creativity and personal development that held sway in the 1970s. Concentration on written linguistic skills as an analytical aid demands a lot of the teacher, who then has to check pupils' efforts. Finally, for many pupils and teachers, the teaching of literature as a standard part of basic education would be an innovation; as far as we know, literature is not, for example, often taught as part of junior vocational training. On this point the introduction of a universal basic education would, therefore, require certain adjustments.

### **Differentiation**

Should the teaching of Dutch be differentiated? Education, including the tuition of Dutch, should always be a challenge. Pupils must always be occupied with something slightly beyond their reach yet capable of being mastered with effort and proper guidance. Inevitably, this means differentiation; perhaps in no other subject are the differences between pupils so pronounced as they are with respect to command of language. Similarly the differences in learning speeds compels a certain amount of differentiation: what one child will pick up in its stride another will need to practise at length.

Such differentiation can certainly not be achieved within a heterogeneous group bringing together pupils ranging from junior vocational to secondary grammar level. One difficulty is the tradition of sectarian education and the consequent lack of teachers with experience in handling such groups. But even in countries where differentiated schooling has long been replaced by a single type of school in the first stage of secondary education, differentiation in the teaching of the mother tongue is the rule rather than the exception. If education is indeed to be a challenge for every pupil, including the ablest and the weakest, a certain amount of differentiation in course objectives will also be required, always ensuring that the essential elements as described above would (at the appropriate level) form part of the instruction.

#### *4.2.2 Modern foreign languages*

##### **The debate about modern foreign languages in basic education**

Given its prevalence in Dutch society, its importance in many professional fields, such as commerce, technology and science, and its international status as a lingua franca, English may be regarded as an indispensable subject in basic education. Whether German and French should also form part of the curriculum is less clear. There are two considerations: desirability and feasibility. Opponents argue that these languages are less used and less important in society in general and in professional fields. Proponents point to the fact that (as verified by surveys) large groups in society need proficiency in these languages for study and professional purposes and in their dealings with foreigners. They argue furthermore that failure to include French and German in the basic education curriculum would be at variance with the function of basic education to introduce pupils to a common cultural heritage. The reputation and tradition that the Netherlands has in the field of foreign-language teaching is a further point.

The question of feasibility would appear more relevant than the arguments just advanced. On these grounds the inclusion of a second language in basic education runs into fewer objections than that of a third language. The most important questions in this respect are whether less verbally gifted children are over-burdened by the requirement to learn another (or even third) foreign language in addition to English; whether the teaching of a second or third language is at the expense of other subject matter of equal or greater relevance in terms of basic education; and finally how the undoubted need for proficiency in these languages is to be met if French and German do not

form part of basic education. No agreement exists on these questions, either among experts in the field of foreign-language tuition or elsewhere.

The danger of over-burdening pupils is something that is voiced particularly in junior vocational circles. By contrast others argue that reasonable results are obtained with the standard provision of three foreign languages at the Waldorf (i.e. anthroposophic) schools and at a number of combined junior vocational/general secondary schools and middle schools. The debate about over-burdening relates, it should be noted, to a comparatively small number of pupils, at least as far as the second language is concerned. At the present time some 70 per cent of all pupils learn three modern languages in the first stage of secondary education and some 80 per cent at least two. There are no signs to suggest that pupils are over-burdened as a result or that there is a higher drop-out rate than in other subjects. There would, therefore, appear to be no significant barriers to the inclusion of (at least) a second foreign language in basic education, although arrangements may have to be made for pupils with learning problems to be exempted.

Efforts are currently being made to make the teaching of German and especially French more accessible for junior vocational pupils. French, in particular, is barely taught in these schools, and a one-year "orientation stage" for both French and German is being devised for the first year of secondary education. The actual learning of the language is not the main focus at this point; the main aim instead is to acquaint pupils with these languages and to give them an insight into their possibilities in these fields. It is, however, uncertain whether the new teaching method and different syllabus will result in a dramatic reduction in the over-burdening problem. The schools that could have "signed up" for the project have mainly decided to wait and see, perhaps because they consider "personal decision-making" too limited an educational aim.

The question as to whether languages displace other essential elements of basic education is meaningful only if the amount of time available for basic education is limited. Such limits do of course exist, but where do they lie? The upper limit to the amount of time available for basic education is set by the school-leaving age, less the time that must be set aside for vocational training. If that time is set at one year's full-time education and two years' part-time education (during the period of compulsory part-time education that follows full-time compulsory education in the Netherlands), this leaves a maximum of three years for basic education after primary schooling. It is not, of course, possible to answer the displacement question without taking the entire basic education curriculum into account. A table at the end of this chapter sets out the way in which the available time might be divided over the various subjects.

And then there is the third question: how can one guarantee that sufficient pupils will learn a second or third language if room is not created for such instruction at the basic education stage? There are two possible solutions. One is to pass on the responsibility to the next stage of education. In all probability this will, however, have the result that fewer pupils go on to study a second or third language than at present; in many vocational training courses the teaching of foreign languages is at best marginal.

Another possibility is to create a "free" part within the basic education curriculum in which pupils could if they wished learn French or German. In other European countries with comprehensive secondary education, this is easily the most common arrangement. An additional argument in favour of this system is the fact that learning a language takes a lot of time and would consume a disproportionate amount of time in further education. For those who consider that a third language does not fit into basic education and that transferring the responsibility to continuing education affords too few guarantees that sufficient pupils will acquire sufficient proficiency in the language, a free space in the curriculum should be a logical solution – but this too runs into objections, in that opponents fear that using the free part for language teaching might convert it into a screening device for progression to further education. This argument is, however, insufficient in itself to reject

the provision of language tuition in the free space. Whether or not the results obtained in the basic education course should provide the basis for selection does not depend on the content of that education but on the attitude towards selection. Even if all pupils were to be taught the same subjects, the results would vary and would, if one so wished, provide a frame of reference for selection.

This analysis has led the Council to the following conclusions. Many pupils will need French and German in further education and later life and the study of these languages forms an essential part of the introduction to culture that education is required to provide. French and German should therefore form an integral part of the basic education course. The only grounds for deciding otherwise is the argument that the shortage of time means that more important subjects are displaced.

Where there are doubts or disagreement about the feasibility of teaching these languages the maximum effort should be made. Experiments to make the teaching of French and German more widely accessible should therefore be pursued. In expectation of the results of those experiments, French or German should for the present be included under basic education in addition to English, without specifying which of the two pupils should choose. In contrast to present practice, the language not chosen should be offered as an optional subject in the free space at the first stage of secondary schooling at all schools. The possibility that this third language might come to act as a prerequisite for admission to continuing education would have to be countered by preventing such schools from refusing pupils on the grounds that they had not studied a third language.

#### **What content?**

Languages are included in basic education primarily on the grounds of their importance as an instrument of communication. Training in the practical use of language, or "communication skills", should therefore be central. In contrast to previous practice, the content of language teaching should be geared to the actual use pupils will have to make of foreign languages during and after their studies. The best possible estimate must therefore be made of such situations, on which basis the linguistic material that has to be mastered (i.e. phonological, morphological, lexical and syntactical) can then be determined. No such specific identification of the content of English, French and German teaching has so far been made, although there are a number of examples of content descriptions in terms of "language use situations", which could serve as a starting point for curriculum development remaining to be carried out in the field of basic education.

The direction in which development work will need to proceed may be described as follows. In the context of communication skills, a number of practical situations may be distinguished according to whether a person is speaking, listening, writing or reading. All four of these skills will need to be reflected in the course objectives, although the accent will need to lie on oral skills and reading ability.

The level of proficiency reached in both languages at the end of basic education should enable pupils to communicate adequately in a representative set of situations. For English the number of situations could be higher, as English is a compulsory subject in the last two years of primary school (i.e. some 100 contact-hours). Course descriptions in these terms are available for all three of these languages, and could be used in deciding the required minimum level of proficiency.

#### **Differentiation**

As the principal aim of foreign language teaching, language proficiency cannot be replaced by other such as "personal decision-making", since this would otherwise disrupt the balance between the various functions of basic education; preparation for demands inherent in education would then be

over-stressed. Given the differences in learning speeds, differentiation is therefore required. In principle, the formulation of goals in terms of communication skills affords the opportunity of arriving at a certain substantive “unity in diversity“, in the sense that the desired level of proficiency can be viewed in various ways: the number of representative situations; command of the language in terms of fluency and accuracy; and the nature and scale of the linguistic material required. Equality of content can apply with respect to representative situations, while differences will occur in the degree of proficiency and in the nature and scale of the linguistic material.

### **Introduction problems**

The adjustment of language teaching to the aims set out above requires, in the first place, curriculum development: existing courses are not geared to the “unity in diversity“ described above but are still partly based on analysis of linguistic structures. Particularly now that the most experienced teachers are gradually disappearing from the first stage of secondary education following the revision of salary scales, extensive help from outside schools will be needed. Experience in junior secondary schools, for example, indicates that the burden of changes in the curriculum cannot be borne in its entirety by teachers. Further training will also be needed for teachers. In the case of English the stress will need to be placed on the transition from primary school (where English has now been made a compulsory subject) to secondary education. As regards French and German, priority will need to be given to further training in ways in which the teaching of these subjects can be made more accessible to pupils at junior vocational schools.

#### **4.2.3 Mathematics**

##### **Why mathematics in basic education?**

Like Dutch, mathematics is universally accepted as a necessary subject in basic education. The need for pupils to achieve familiarity with elementary arithmetical operations and mathematical concepts at primary and secondary level is not in dispute and is justified (although often without supporting arguments) in terms of its universal importance in everyday life, occupational activities and in further education in nearly all fields.

##### **What content?**

There is less unanimity about what mathematics should cover at secondary level. At primary level, there is no disagreement: in both professional and non-professional circles it is accepted that children should acquire a basic proficiency in mental arithmetic and that they should learn to do calculations, work with proportions and percentages, fractions and decimals and master the basic principles of measurement. The way in which this is done varies greatly.

In broad terms two streams may be distinguished at primary school: the traditional “learning by rule“ teaching of mathematics, consisting mainly of the learning of standard solutions and algorithms, and application-oriented teaching along “Wiskobas“ lines. “Wiskobas“ is an innovatory method of teaching mathematics at primary level in which children acquire their knowledge in an active way and the knowledge is put in a meaningful context. Supporters of the “Wiskobas“ approach claim that it is more than just a methodological variant of traditional maths education. Instead they regard it as application-oriented education with fundamentally different objectives, which helps make mathematics accessible to a much wider range of pupils. Both claims – different objectives and a broader range – are of great importance in deciding the form that the teaching of mathematics should take in basic education.



To start with the question of range, the results currently being obtained with the teaching of arithmetic at primary school are not satisfactory. Surveys among 13 year olds have revealed that a substantial proportion – nearly 50 per cent – of primary schoolchildren absorb little if anything of the subjects which, on paper, should form the subject of instruction in the higher grades: fractions, percentages, proportions, area, volume, averages and decimals. After the third or fourth year of primary school, therefore, it is no longer possible to speak of a communal basic education on which secondary education can build. In these circumstances it makes no sense to lay down a minimum curriculum at secondary level to take over where primary school left off. Instead, each and every addition to the course only means that pupils who entered secondary school with an inadequate grounding in mathematics get even further behind and that the concept of basic education becomes even more of an empty shell than it already is at primary school.

The disappointing results obtained with the teaching of arithmetic at primary school cannot be attributed to uncertainties about what the course should cover, which is the subject of widespread consensus both within and outside the education system. No actual improvements are therefore to be expected from defining the required content more precisely. Instead ways must be found of enabling much greater numbers of pupils to achieve the goals of the present primary education. Schools need to know not just *what* children should learn but also *how* that is to be realized; and this applies equally to primary school and to the first stage of secondary education in which basic education is provided. A description of basic education needs therefore to consist of a description of what pupils need to know and be able to do plus a description of the course available to that end. As a third element, there needs to be a set of textbooks and teaching manuals.

This recommendation is based on the assumption that a radical improvement in educational results is achievable. Are there prospects of this kind? The experience with the “process-oriented” teaching of arithmetic and mathematics referred to above would suggest there are. A notorious stumbling block such as long division, for example, is mastered by many more children if it is tackled as a problemsolving exercise rather than as the application of rules and if pupils are able to test and gradually streamline their own solutions. The growing acceptance of this kind of teaching, and the large measure of agreement among those directly concerned on the form it should take, would appear to offer good prospects for the introduction of a basic education at primary school more deserving of the name than the present instruction in mathematics. Those pupils proceeding to junior secondary and junior vocational schools – who make up the majority – obtain particularly little benefit from an abstract introduction to mathematics. In the interests of their subsequent school careers and for later life, these pupils need a less formal curriculum more closely geared to practical application.

An “advanced arithmetic/mathematics” subject to round off the basic education in mathematics at secondary level could comprise the following: working with numbers, including the use of decimal figures in practical situations, such as measurement and doing sums with money, and the relationship between decimals and fractions. Differential goals would include more extensive formal calculation with natural numbers, whole numbers, fractions, decimals and roots, and applications thereof. Further work should also be done with proportions and percentages, with the range of applications being extended: mixtures, fair shares, coinage systems, links between variables, scales and so on. Differential goals might apply to congruence, exponential growth, graphs and functions. As far as measurement is concerned, mensuration, estimates and actual measurement, the determination of appropriate quantities and the processing and reading off of measurement data from graphs should form the subject of instruction; other matters that should be taught include the relationships between the usual variables for length, area and volume, the measurement of angles and one or more statistical averages. More formal operations in metric systems

could be the subject of differentiated goals. At secondary level geometry should be taken further with a more advanced treatment of physical shapes and regular figures, coordinate geometry, symmetry and congruence, Pythagoras's theorem, vectors and goniometry. Other subjects that should form part of basic education mathematics include vectors and matrices, working with formulae, computing with powers, solving equations and functions. Finally pupils need to be taught how to use a calculator properly and simple programming could be done to increase familiarity with computers.

### **Differentiation**

Levels of achievement vary enormously in secondary education. For this reason it would be neither feasible nor desirable for the same instruction in mathematics to be given to all pupils for an extended period; setting will be required in or after the first year of secondary schooling.

The subjects covered in the various sets should be as equal as possible, differentiation taking the form of different speeds and thoroughness. Highly individualized tuition should be avoided, since it would be incompatible with the concept of a basic education for everyone and with the aim of realistic, applied education.

### **Introduction problems**

The education development work required for continuing basic education has already been discussed. In addition there are staffing requirements, of which training and retraining are the most important. The favourable experience obtained with refresher training for primary school teachers in recent years and the well-developed infrastructure of associations and working groups in the field of mathematics teaching provide a promising foundation.

#### *4.2.4 Biology, physics and chemistry*

### **Why biology, physics and chemistry in basic education?**

The natural sciences form part of basic education for closely related and in some cases identical reasons. Pupils need to obtain insight into the properties and laws of the natural world, into the place of man in nature and his potential impact on it. An understanding of this kind is needed to enable pupils to bear the responsibility for their personal welfare and that of the people, animals and plants in their surroundings, to enable a rational use of technology in everyday life and their later occupations and to permit pupils to see the consequences for themselves, society and the natural environment of their behaviour as a consumer of raw materials and energy. Each of the three subjects of course stresses different aspects of the natural environment and has a significance of its own as regards preparing pupils to play a role in society.

### **What content?**

Biology centres on the study of the human body, and learning to care for oneself and the people, animals and plants in one's surroundings. Such a study takes in the most important elements of health and hygiene. More specifically, biology is concerned with the assimilation of knowledge about internal and external construction, vital functions, the behaviour and environment of human beings, animals and plants, as represented pictorially, diagrammatically or in writing: food chains, food webs, biological communities and ecosystems. As a logical concomitant, pupils should be brought to recognize the biological aspects of various problems: the eradication of disease, the impact of man on the environment, over-population and food shortages and surpluses.

Physics is concerned with physical principles and laws of relevance in everyday life and with which children come into contact in technical applications. The curriculum should at least cover the following aspects:

- a. variables and units, where indispensable for the elements referred to below;
- b. mechanics (examples and properties of forces and motion; work performed by a constant force; power; kinetic, potential and mechanical energy; moments and centre of gravity);
- c. solids, liquids and gases (phase transformations, upward force, pressure, particle structure);
- d. energy (heat and temperature, transport of heat, volume changes resulting from temperature changes, types of energy, energy conversions);
- e. noise (vibrations, frequency, amplitude, pitch, sound sources, resonance);
- f. geometric optics (rectilinear motion of light, parallel, convergent and divergent beams, reflection, flat mirrors, refraction, convergent power of a convex lens, divergent power of a concave lens);
- g. electricity and magnetism (positive and negative charges, insulators and conductors, voltage sources, properties of electric currents, resistance, series and parallel resistors, short-circuits, magnetic fields, electromagnetic induction);
- h. electronics and solids (motion of electrons in metals and in substances with a particular atomic structure, emission of electrons from materials);
- i. nuclear physics (nucleus, atoms, protons, neutrons, isotopes, alpha, beta and gamma radiation, nuclear reactions, nuclear fission, principle of nuclear reactions).

Wherever possible pupils should be introduced into the methods of scientific research by doing research of their own, carrying out simple experiments and writing them up. An appropriate choice of the contexts in which these subjects are placed can also contribute significantly to pupils' understanding of the relationship between the natural sciences and their immediate environment. Instruction should not, however, be overly tied to the context: one of the essential features of physics is the ability to identify particular phenomena and to explain those phenomena on the basis of one or more assumptions. If, to take an example, subjects from the field of mechanics were to be strictly handled in the context of "transport": only, the study of physics would fail to come into its own, for pupils' insight and understanding would be obstructed, and their pleasure in the subject spoiled. One of the most attractive features of physics is the fact it can be applied in so many different contexts, and education that fails to generate a sense of wonder in the pupil is not worthy of the name.

A certain amount of understanding of chemical phenomena is required by everyone so as to enable them to deal carefully and responsibly with chemical products, drugs, do-it-yourself products, cleaning materials, pesticides, herbicides and foodstuffs, and with all sorts of processes in everyday life in which chemical aspects play a role, such as combustion, corrosion, decay and weathering. A certain degree of understanding is also required in order to follow the debate about social problems such as energy and raw materials supply and environmental control.

On the basis of these considerations the following aspects of chemistry should form part of basic education:

- a. chemical properties (combustibility, solubility, toxicity and the like);
- b. chemical reactions (chemical changeability of substances and the associated properties, decomposable and non-decomposable substances, combustion with oxygen as a special case, reaction speeds, role of energy in chemical reactions);
- c. chemical immutability of the building blocks of matter (chemical elements, atoms, molecules, rearrangement in chemical reactions).

For the purposes of basic education it would appear sufficient for these subjects to be dealt with primarily in qualitative terms, i.e. in instruction concerned with directly observable properties. This would presumably also enable basic education in chemistry to be provided in combination with

biology and physics. The discussion of more abstract explanatory principles is of relevance only to those needing chemistry in continuing education or professionally, and as such has no place in basic education.

### **Curriculum design**

The risks of subject integration and the uncertain nature of its often proclaimed advantages were noted earlier. In the case of the natural sciences, however, there are arguments in favour of an integrated approach, at least in the early stages of continuing basic education. These relate to the best way of introducing pupils to the analytical world of the natural sciences, arousing their interest for a more analytical approach to the phenomena that form the subject of study and enabling them to link that interest to their own environment.

In an introduction concentrating on the more formal, theoretical side of the subject, there is a real danger that many pupils will fail to see its practical relevance, let alone be able to apply it in practice. In the first stage of secondary school, the approach should therefore be highly practical in orientation: questions in which children of that age are interested should form the starting point for “natural sciences orientation” in first grade. In most cases such questions will not be concerned with biology, chemistry or physics alone but will enable phenomena to be examined from various points of view (in these subjects) in a specific context.

An integrated approach should not, however, be pursued for too long, since the disadvantages rapidly come to outweigh the advantages for both pupils and teachers. Less able pupils benefit particularly from a clear, systematic approach, and a consistently general treatment of interesting subjects runs the risk that essential aspects will get obscured and that pupils will be confused. The aim of the organizing principles on which scientific disciplines are based is to describe and explain phenomena as simply as possible, with a minimum of axiomatic assumptions, and instruction along these lines in each of the three subjects can provide pupils with clarity and a frame of reference.

For teachers, too, the integrated teaching of scientific subjects can become an excessive burden if prolonged. Integration demands not only an overall knowledge but also a solid specialist knowledge of related scientific disciplines – which, even at this level, can vary widely.

### **Differentiation**

Given the differences in aptitude and learning speeds, differentiation is also inevitable in the exact sciences. Teaching needs to take place at at least two levels for these differences to be taken into proper account. Although a good deal of development work would be required, it might be possible to achieve such differentiation in the first year of secondary education in mixed ability classes, particularly if the main focus in that year is on biology, where the scope for grouping is somewhat greater. In the case of physics, experience has been gained in a number of projects with grouping in mixed ability classes, although these did not contain any junior vocational pupils. While the results in the early stages were reasonably favourable, they also indicated that setting – i.e. grading pupils by progress – should not be delayed too long, or abler pupils will be insufficiently stretched. This would apply all the more given a full range of pupils of the same age, from junior vocational through to grammar school ability. If, as proposed earlier, chemistry is taught in conjunction with biology or physics, the same form of setting would, for practical reasons, need to apply as in those two subjects.

### **Introduction problems**

The prospects for basic education biology are reasonably favourable. The subject is taught in all types of schools, and by drawing on the experience

with the teaching of health and hygiene and on the knowledge of teachers of this subject in junior vocational schools, the “home care“ side of basic education biology would also come into its own. There is, however, a need for a national coordination centre where the many experiments and ideas in the field of a new-style biology could be brought together, and which could guide and support the introduction of that subject in basic education.

The introduction of physics and chemistry as part of the basic education course will undoubtedly throw up more problems. A particular problem arises in junior vocational schools, which at present simply teach “nature studies“, a subject that traditionally concentrates on biology.

Attention will also have to be paid to the re-training of teachers. This would need to cover recently added subjects, such as nuclear physics and solid-state physics; learning in contextual settings; internal streaming; laboratory work; and the scope for integrating the natural sciences. A further problem is the lack of staff or facilities; many schools, for example, lack a lab assistant, making it difficult to organize practical work.

#### 4.2.5 *Computer studies*

##### **Why computer studies in basic education?**

A number of social developments of potential relevance for education are discussed in the report. These include developments in the presentation, transfer, storage and processing of information, of which the advent of the computer is easily the most notable.

The social importance of these developments will not be discussed here, but what implications do they have for education, especially basic education? Should schools play a role in promoting “computer literacy“ among pupils or, in broader terms, should schools familiarize pupils with the possibilities and limitations of information technology? There are good reasons for answering this question in the affirmative. The movement towards an “information technology society“ has major consequences for employment now and especially in the future, when two out of every three workers are expected to be concerned with the production, procurement, processing and dissemination of information. Industrial production and employment in the administrative sector are undergoing radical change. A high proportion of pupils now at school will need a mastery of information technology in their future employment, while computerization is also making its presence felt in other areas of life. Not only is society in general becoming increasingly dependent on data-processing equipment, but the introduction of that equipment is leading to changes in control and power structures and to changes in the use of leisure time. Here again, virtually everyone is affected.

To prevent certain groups of pupils from falling by the wayside, schools must take on the task of familiarizing pupils with various applications of information technology – not so much because of the applications themselves (which are changing so rapidly that no school can keep up, and the knowledge is out of date before pupils take their final exams), as to show that computers are a usable tool, with enormous potential for mastery over the surrounding world.

The question that arises is whether a separate subject is required, or whether these aims can be realized in the teaching of other subjects. It is a question that has been the subject of lively debate in recent years. Some people fear that the introduction of computer studies in existing subjects will be too slow, that it will tend to be concentrated on the sciences, and that computer education will, in consequence, be fragmentary and unbalanced.

On the other hand, there are a number of arguments against introducing a new “computer studies“ subject. The introduction of social studies and general techniques was not a particular success because of uncertainties about what was meant to be taught, which lead to wide variations in the actual courses. In addition, opponents question the merit of “dry runs“ with the computer and point to the very wide range of data processing and

storage functions in virtually all subjects on the present curriculum, from Dutch to mathematics and from music to history. Would it not, they maintain, make more sense to avoid the need for the laborious search for practical applications and contexts characteristic of so many other subjects, and instead make use of the numerous possibilities in the field of information technology in existing subjects to give pupils the necessary familiarity? If the scope for computer-aided education were fully exploited, they argue, and computers were used as a versatile instrument in the classroom, a separate computer studies subject would not be needed.

So are computer studies required or not? A practical and cautious answer put forward from various sides is that it should be set up as a separate subject, but with a limited number of lessons. It is a practical solution because computer applications in education are not yet well-developed and pupils cannot therefore learn a great deal in this way. A separate subject at this point would guarantee that all pupils at least received a basic grounding. And it is a cautious solution since the circumstances in which the teaching of computer “literacy” and the practical introduction of information technology in secondary education make sense, can change rapidly. The more widespread the use of computers becomes both within and outside school and the more that computers are used as normally and widely as the telephone, motor car and television, the less need there will be for a separate computer studies subject.

### **What content?**

For the time being, the main aim of computer studies should be to familiarize pupils with ways in which modern data-processing equipment can be used. The central questions should be what such equipment can do and how it works or, more specifically, how can I make it do what I want? This should then lead to an exploration of possible applications: computerization in relation to the storage, arrangement, processing and retrieval of data; production management; the compilation, storage and editing of texts; and playing and working with pictures, graphics, and sounds. The emphasis should be on “exploration”, rather than mastering all sorts of programmes, which change so rapidly that knowledge is soon dated. The same applies to knowing how to make computers do what one wants. Pupils clearly need to have some understanding of what programming and programming language mean, but this does not mean that programming itself should form part of basic education. Such skills would be superfluous since there is ever-improving, cheaper and more versatile commercial software for many types of applications. Nor are there any indications to suggest that an early familiarization with programming language is an advantage in further study. Finally, by no means the least important consideration is the time-consuming nature of programming studies, which would inevitably have to be at the expense of other essential aspects of the curriculum.

As with other new subjects such as general techniques and social studies, the idea of teaching computer studies is often overloaded with all sorts of highly abstract or ambitious aims. It is seen as a way of providing a quantitative approach to the real world, of developing algorithmic thinking and of clarifying the impact of information technology on the social and cultural structure of society. Such goals are not being proposed by the Council: education – especially basic education for young pupils – should not be burdened with questions to which the world of science itself has no answer, and the social consequences of information technology fall into that category. It is also pointless and even misleading to formulate goals for computer studies that come into their own in other subjects as well; algorithms and a quantitative approach to reality are not the prerogatives of information technology. Quantitative analysis also comes into physics and economics and “algorithmic thought” is equally as stressed in a number of other

subjects. Nor is this confined to the pure sciences; even language teachers train their pupils in algorithmic thinking at certain points.

### **Differentiation**

Given the modest goals and the practical nature of the proposed approach to computer studies, only a minimum of differentiation will probably be required. Experience with the teaching of this new subject will have to bear out whether this is so.

### **Introduction problems**

The teaching of computer studies in basic education would not have to start from scratch. Many schools are already experimenting with the subject; computers are well established in schools and will soon be common property. Progress has already been made with special training for teachers, and an ambitious special training programme is being worked up which will, among other things, cover the use of computers in other subjects.

The most difficult point is curriculum development. A course will have to be negotiated between the risk of a rigid, set curriculum that could rapidly get overtaken by events, and the risks of giving schools complete freedom, in which case their interpretations of what was required could vary widely and nullify the aim of a basic education in computer studies for all.

#### *4.2.6 History and civics*

### **Why history and civics in basic education?**

The particular contribution of history in basic education lies in teaching pupils to think in terms of time dimensions and change and to help them acquire knowledge of and insight into the historical processes underlying present-day society. In doing so it helps contribute towards the development of individual and group identity, while in terms of the general desirability of acquiring a sense of history there are a number of more specific reasons. Thus it is important for children to learn that people do not continually live in changing circumstances but that they themselves contribute to such change, and that contemporary developments have historical origins and are interrelated. In order to interpret and understand their own existence, children must learn to distinguish the development and interconnection of values and norms. Practical relevance is therefore the keynote: the knowledge, skills and attitudes acquired should contribute towards full participation in society. This applies also to civics, which is not at present taught as a separate subject at secondary level in the Netherlands, but which comes into the teaching of history and social studies. In order to understand his personal and democratic rights and obligations, every citizen should be familiar with the structure, principles and working of political institutions.

Insight into the evolution of decision-making structures in society can contribute significantly towards an understanding of the way in which they work, for which reason it would be advisable for civics to be assigned a specific place in the teaching of history.

### **What content?**

The content of history as a subject is in such a state of flux that it is not really possible to make a concrete, detailed proposal of what should be taught in basic education. There have, however, been a number of developments that deserve to be encouraged since they help achieve the aims of teaching history more effectively, and which indicate the lines and criteria on which the content of history teaching should be based.

Until the 1960s, history consisted largely of the teaching of important political dates in Dutch history. The teaching of history at school followed

that at academic level, namely a historiography in which military, political and diplomatic events and exploits were recounted and classified. Until a few decades ago, this "historicism" determined the content of history books at primary and secondary schools.

In the 1970s, a new emphasis emerged on "world orientation". The national context ceased to have such primacy, and the history of political and military events largely gave way to thematic teaching, in which social, economic and socio-psychological factors and structures, and attention to values and norms, came to be central. Greater interest was expressed in the social relevance of history as a subject. According to current thinking, the teaching of history should strengthen pupils' consciousness of the historical dimension of their society. There was also a growth in interest in historical research methods: history was no longer just seen as a story, but pupils were expected to acquaint themselves with historical research by discovering things for themselves. In addition history concentrates more on the everyday life of ordinary people and has become more socially oriented. The way in which the course should be arranged – i.e. chronologically or thematically – also came in for discussion. The most extreme forms of thematic teaching have since been abandoned, because a (primarily) chronological approach provides greater assurance that pupils will be able to see historical phenomena as an interrelated whole and enables them to fit new information into a historical context. The teaching of history now also takes express account of developments in international relations, the problem of war and peace, patterns of cooperation and conflict and inequalities and imbalances. As a subject civics has been traditionally concerned with the way in which binding decisions are made within a society. This leads to three subsidiary questions: 1) how did earlier societies organize decision-making, and how is the evolution of the Dutch system to be explained; 2) how is decision-making formally regulated in the Netherlands, and 3) how does decision-making in the Netherlands actually take place? A related question is the way in which individuals are able to influence decision-making. These distinctions do not as yet say anything about the actual choice of subject-matter and the way in which it should be taught. In very general terms, the subject matter should be designed to get away from the traditional, static model of the three powers of the state and to concentrate instead on a systems approach that examines the demands and wishes of society, and the formation, adoption and implementation of policies and their social effects. This would cover such topics as interest groups, political parties, extraparliamentary action, the mass media, advisory councils, the formation of new governments, coalitions, legislative and administrative provisions, civil servants, institutions within the community and the judiciary. Attention should also be paid to the role and function of international governmental and non-governmental organizations, including the integration of Western Europe. All these factors in the political decision-making process emphasize the dynamic nature of the political system.

### **Introduction problems**

Both junior vocational schools and general secondary schools currently teach history, although in the former it is not greatly emphasized and is bracketed on the timetable with geography. As far as one can tell, the subject of civics does not come in for systematic treatment, although occasional attention is paid to political issues in the teaching of social studies. The most important problem in introducing history and civics will therefore be to find teaching methods that appeal to junior vocational pupils and can be handled by their teachers.

### **Differentiation**

In the light of these considerations differentiation will certainly be required but it should be ensured that the present differences in the content



of history education are not consolidated as a result. Perhaps more than any other subject, history provides a grounding in a common culture – one of the main aims of basic education – and particular groups of pupils should not be excluded from instruction in historically important periods and subjects. Ancient cultural history or the history of art should therefore form part of the teaching of history rather than separate subjects, and should be universally provided rather than just to a select group.

#### 4.2.7 *Social studies*

Social studies were introduced in the past as an unstructured subject: only the function that the subject was meant to perform, rather than the content, was laid down. The subject was required to cover something not dealt with by other subjects, namely making clear the social relevance of school learning and so injecting greater coherence into the fragmentary view of the world acquired by most pupils at school. Later the emphasis switched more to an educational ideal of an emancipatory nature: arousing social awareness among young people. The subject came accordingly to concentrate on social and political training: the development of attitudes such as tolerance, solidarity and cooperation, thereby rendering a contribution towards the process of democratization throughout society.

The unstructured introduction of social studies led to enormous problems for teachers, who were saddled with the task of deciding how the intended aims of social studies should be turned into actual instruction – a problem still by no means resolved. There is an enormous diversity of curriculums, subjects and methods: a diversity which, especially in the beginning, was actively encouraged. Numerous groups and committees expressed their views on the aims of the subject. While it is true a certain consensus has emerged over time, that consensus in fact concerns a vacuum. The aims of social studies are still divergent and general, and there is a lack of specific content: every social studies teacher can, and does, maintain that his teaching of the subject is derived from the general aims laid down.

Ironically, the aims originally laid down for social studies, and which were evidently felt to be lacking in the curriculum as it was up to that point, have now been gradually adopted in other subjects. Similar efforts at increasing the practical and social relevance, and greater emphasis on the knowledge and skills required by pupils for citizenship purposes, are to be found in such divergent subjects as biology and history and Dutch and physics. The more that other subjects stress the factor of social preparation, the less the justification for a separate subject for this purpose. The introduction of social studies has had the effect of bringing social reality into the school. Now that other subjects have come to serve that purpose, the *raison d'être* for social studies in basic education has disappeared. The inclusion of civics as a regular part of the teaching of history would ensure that all pupils acquired the requisite basic knowledge in the functioning of the political system and the rights and obligations of individual citizens.

Finally, an observation which, strictly speaking, goes beyond the scope of this study. Social studies are also generally taught in junior vocational education, usually with the specific function of preparing people for the world of work and introducing them to the rights and obligations of employers and employees. This is a function of considerable and direct practical importance in the labour market, and it could be asked whether the teaching of social studies should not therefore form part of the basic education. Interest in this subject – and hence the benefits of teaching it – is, however, likely to be appreciably greater among older pupils on the point of entering the labour market than among younger pupils who still have to decide how they want to specialize or what they want to do.

#### 4.2.8 *Geography*

##### **Why geography in basic education?**

How do the earth and our habitat look, and what have people done to them? That in essence is the subject of geography, and these questions also express why the subject is an indispensable part of basic education: it helps children to explore and understand their environment and to familiarize themselves with variations in the environment and the way in which it has been used throughout the world.

##### **What content?**

Essential topics in the teaching of geography in basic education at secondary level include:

- a. structure and origins of the earth and, in conjunction with that, the origins of different regions;
- b. weather and climate; climatic and vegetation regions;
- c. population distribution and density and types of society as related to the possibilities of the natural environment;
- d. distribution and consumption of natural resources and raw materials as related to economic development;
- e. industrialization, urbanization and planning;
- f. topography: pupils should have a sound knowledge of the topography of the Netherlands and neighbouring countries and a sufficient basic knowledge of the topography of the rest of the world to enable them to follow the news properly. Competence in using reference works and reading maps forms part of this knowledge.

While the treatment of these topics will need to concentrate on the Netherlands and surrounding countries, the leading features of other parts of the world will also need to be covered. Much of this subject-matter will already have been dealt with at primary school, but in view of the freedom such schools have in determining the actual course, the ground will need to be covered again at secondary level.

##### **Introduction problems**

The introduction of geography in basic education should not encounter particular problems since the reasonably extensive courses currently taught in all schools (with the possible exception of junior vocational schools) should provide a suitable basis. If differentiation were felt to be necessary to reflect differences in ability, special care would need to be taken in deciding the criterion on which this differentiation should be based. Generally speaking, differentiation is based on the degree of extensiveness with which a subject is taught. Instead it would be preferable for the same subject-matter to be taught to all pupils, and differentiation to be based on the degree of complexity with which the course was covered. Drawing up courses varying in terms of complexity is, however, particularly demanding and would probably be asking too much of teachers, so that outside help would be required.

#### 4.2.9 *Economics*

##### **Why economics in basic education?**

By no means all secondary school pupils at present come into contact with economics. The subject is compulsory only at junior secondary schools and certain junior vocational schools, where it is referred to as "commercial studies" – a description which, at least at junior secondary schools, is no longer applicable. The term does, however, serve to indicate the historical

origins of the subject, which used to be a preparation for office jobs, commerce and self-employment. It is little taught in the first stage of grammar schools, senior secondary and junior vocational schools, while at senior level it is an optional subject only.

The most important reason for making economics a standard part of the curriculum is that it has become indispensable for preparing people to take part in society – a function which indicates the required content of the subject. Everyone finds himself in economic roles in present-day society; they have to make their way as a consumer and producer and as a participant in democratic processes in which political decisions are to a large extent economic ones. Education in economics helps develop social skills in economic activity as a consumer, producer and citizen. This has become all the more important with the growing difficulty of finding one's way in the increasingly complex network of social and economic regulations, relationships and laws. The teaching of economics also helps generate the knowledge and skills required to improve living standards.

Apart from preparation for society there are two reasons why economics should form part of basic education. In the first place the subject provides important back-up for other subjects in which economic terminology is frequently used, such as history, civics and geography. Secondly, it is difficult to acquire economic knowledge systematically outside school, partly because of the complexity of the subject matter and partly because the political and economic interests at stake mean that the subject is often presented in an incomplete or tendentious manner.

### **What content?**

The new economics course introduced in junior secondary school provides a good starting point for the economics course at the basic education stage, which should cover the following elements of that course:

- a. the buying and selling of consumer goods;
- b. budgetting and accounting, especially family budgetting;
- c. saving and borrowing;
- d. public affairs: government, legislation, social security and taxation;
- e. work: employment in the formal and informal sector; motivation to work;
- f. international economic relations: world trade, Third World.

### **Economics and domestic science**

In the discussions below of domestic science and health and hygiene it will be noted that the proposed content of "home care" partly coincides with that of economics. The subjects listed above are indeed all covered under home care, but from a different angle. Home care is more specifically concerned with the immediate home environment: what is needed by way of economic knowledge and skills for the purposes of running the home and feeding and clothing the family. It is precisely this everyday relevance that facilitates the introduction of economics in basic education. Where other subjects not taught in junior vocational schools have to be restructured, economics is already a practically oriented subject that is related to the needs of everyday life and geared to the capacities of less verbally gifted children. The provision of economics as a standard part of basic education would be able to draw on these characteristics of junior vocational training, especially if an optional variant of the subject were to be provided in the form of domestic science slanted towards home economics.

### **Introduction problems**

Following the nation-wide campaign to introduce the new junior secondary curriculum between 1979 and 1984, in which many junior vocational teachers also took part, no major problems are to be anticipated with respect

to the further training of economics teachers. If the introduction of economics can draw on this group there should be no shortage of teachers. A problem may, however, arise with respect to the development of domestic science “new style“, although the lack of information on the current content of the subject makes it difficult to indicate how far-reaching such adjustments would need to be. Obviously, however, household management and training in practical skills such as cooking and housekeeping now occupy a fairly prominent place in such education. Accentuating the economic aspects of household management and harmonizing the economics and domestic science courses will require extra curriculum development work.

### **Differentiation**

The need for differentiation in economics is lessened by the fact that it is a new subject for all pupils at secondary level and that everyone therefore starts at the same level. In principle this should afford greater scope for working in mixed-ability classes, at least in the early stages – especially if the applied variant of the subject were to be taught at that stage, which would at the same time provide abler or verbally more gifted pupils with an excellent introduction to the subject.

Nevertheless differences in learning speeds will once again create a need for a certain amount of differentiation. If basic education in economics is to be taken seriously, differentiation must be based not on an extension or limitation of the subject-matter but on more intensive treatment of that subject-matter for the abler pupils.

#### *4.2.10 General techniques*

##### **Why general techniques?**

As this subject can vary greatly from school to school, it is not really possible to discuss its desirability in basic education without examining its possible functions and content. Which functions form an essential part of basic education, and how should these be reflected in the course?

The subject of general techniques as currently taught at junior vocational schools falls into two main categories, namely vocational orientation and introduction to technology and technics. In most of these schools the subject entails an initial familiarization with the particular vocational streams taught at senior level in the school in question. The second function of introducing pupils to technology can be interpreted either narrowly or broadly. It may centre on the teaching of practical skills in and about the house, learning to deal with technics, on instruction in technical applications as a means of teaching theory, or on acquiring insight into the positive and negative effects of technological developments.

Given the links with specific vocational fields, the first of these functions is not easily reconciled with the concept of basic education. With respect to the second function, that of introducing pupils to technology, the last of the elements noted above would certainly be pitched too high for this level of education and for these age groups; the effects of technological developments on society are highly complex and the relationship between technological and social developments too little understood. This leaves practical resourcefulness and familiarization with technics and technology as a path to theoretical understanding. Are these matters with a place in basic education? Should there be a subject in which pupils are introduced to technics?

Technics is a generic term for all sorts of appliances and activities with which people can help control their environment. This includes the manipulation of materials, energy and information in line with human requirements, and the design and utilization of equipment for that purpose. Technics is generally derived from a systematic survey of the natural environment based on the natural sciences. Conversely the development of

the natural sciences is in large measure attributable to the systematic application of technical equipment. Technics is a distinguishing feature of human culture. In fact we only speak of culture once the human species has reached the stage of "homo faber" and is able to intervene actively and purposefully in its environment. "Technics" therefore also stands for the wealth of ideas and skills that go to make up the human heritage in the field of "making". Cultural introduction – one of the most important functions of basic education – therefore also involves an introduction to technics, i.e. familiarizing pupils with the communal stock of knowledge that forms an essential part of our culture by teaching them to process materials and to use tools and appliances and understand their construction and operation.

### **What content?**

The content of general techniques will have to be drawn from a very wide field. At this stage it is possibly only to provide certain indications of the directions in which those choices should be made rather than a detailed description of the subject-matter. The course needs to cover technology "close to home" (without becoming trivial) and the technological skills and knowledge needed now and later in everyday life. It should concern knowledge and skills of broad application that can help solve new technological problems, with a view to helping pupils to develop their practical skills and technological insight and to discover and develop their potential and interests in this field. Many aspects of the practical subjects currently taught at junior vocational schools would undoubtedly be of relevance for the new subject of general techniques, and would provide a suitable starting point for working up the syllabus.

### **Introduction problems**

As an introduction to the world of technology, general techniques as a subject in basic education has to be designed almost from scratch. Junior vocational schools are at something of an advantage, in that they have instruction rooms and practical teachers whose experience will be of great value in deciding what the subject should cover. Their input can help ensure that general techniques does not become "learning *about* technics" but centres on practical, technical applications. This is not to say that there will be no teacher problems at junior vocational schools; general techniques will need to be more than just an introduction to the courses provided at higher level in these schools, so that teachers will need extra training.

General secondary and grammar schools will have to start right from the beginning: they have neither suitably equipped rooms nor staff capable of teaching the subject. If future school mergers were to aim at combined schools with both a general secondary and a junior vocational element, the prospects for the introduction of technics would improve considerably. A large sum would, however, have to be set aside for fitting out classrooms and running costs. The fitting-out costs alone are estimated at over 200 million guilders.

### **Differentiation**

Surveys and practical experience have shown differentiation to be required for general techniques. Surveys in bridging classes have revealed major differences in the positions pupils start out from. Senior secondary and grammar school pupils score higher than junior vocational pupils. Knowledge turns out to be a significant factor for implementing practical skills according to a fixed plan. Despite a higher score with respect to information, girls generally score lower than boys in certain sections of the test (knowledge, practical skills and attitude). Migrant children also tend to score lower than Dutch children.

Differentiation therefore appears to be required and, as current education practice shows, that cannot always be internal grouping. This is another subject in which mixed ability grouping would impose severe demands on the teacher who, in guiding pupils, needs to be able to deal with different types of jobs and working methods and with different levels of ability and learning speeds, while at the same time enabling pupils to progress systematically. In addition, internal grouping requires a sound organization, particularly in practically-oriented subjects.

#### 4.2.11 *Home care (domestic science, health and hygiene)*

“Home care“ is not at present taught at secondary level. Proposals have been made – for example by the advisers consulted by the Council – for the subjects of domestic science and health and hygiene to be combined into a new compulsory subject known as “home care“. The main elements of this subject would be drawn from domestic science and health and hygiene as currently taught in the lower stage of certain junior vocational schools. The proposed structure of the subject and a preliminary indication of the more specific content is as follows:

- a. growth and development (including growth and sexuality; care of babies, toddlers and the elderly);
- b. nutrition (including dietetics and the preparation of food);
- c. housing (including furnishing, outgoings and maintenance);
- d. personal relationships (including role patterns and dealing with conflicts);
- e. clothing (including buying, care and mending);
- f. work and spare time (including means of saving energy and time (ergonomics) and the active and passive use of leisure);
- g. personal care (including the relationship between life-style and health; bodily hygiene);
- h. consumption (including housekeeping budgets, consumer information, saving);
- i. use and misuse of materials and substances (including medicinal drugs and alcohol and tobacco);
- j. prevention of and coping with sickness (including the most common illnesses for that age group, and health care facilities);
- k. safety and first aid in the event of accidents;
- l. personal responsibility for the environment (including energy and energy consumption, household waste).

Why should a subject along these lines be included in basic education? Those favouring its introduction do so mainly in terms of the fact that basic education is meant to prepare people for society and that nearly everyone will at some stage or other be required to manage their own household for a shorter or longer period. They will need to be able to look after their own health and in many cases they will need to care for other members of the household unable to look after themselves. Changes in life-style and role patterns also mean that boys will be increasingly required to join in the running of the household and to care for others. Those who favour this particularly support the introduction of “home care“ as a subject since it would prepare boys for these tasks and thereby accelerate the general process.

These arguments are not in fact seriously contested. Few deny that household and home care tasks will play an important and probably increasing role in most people’s lives. What is contested is the conclusion that schools should therefore help prepare people for these tasks. Opponents of the introduction of home care as a subject argue that schools are not necessary for the purpose, and that the knowledge and skills required for these types of tasks are largely picked up by children at home or can readily be picked up if the need arises, when people will be highly motivated. Prospective parents will, for example, be more engrossed with the subject of child care than 12 or 13 year-olds.

Although the Council shares these views, it also considers that they do not do full justice to the current teaching of domestic science and health and hygiene, and certainly not to the proposed subject-matter of home care, which is considerably broader than the sometimes rather disparaging comments made about the subject pre-suppose. That very breadth, however, creates a problem referred to earlier, namely that home care would deal with all sorts of subjects already touched on in other subjects at general secondary schools, such as economics and biology.

The broad definition of the subject is undoubtedly related to the history of lower domestic science education as taught in junior vocational schools. As with junior vocational training as a whole, the length of the course has been extended, first from two to three and eventually to four years. This meant the subject could be taught in greater breadth and depth and that it was no longer just concerned with imparting practical skills. This applies to both the lower stage, in which the emphasis has been on general training since 1975, the year in which junior vocational education was extended from three to four years, and the upper stage, where pupils specialize. It appears that this broadening and deepening of lower domestic science education has taken the form not so much of an addition of subjects from the general secondary sector as of an expansion of traditional lower domestic science education subjects. In no other subject in junior vocational education do individual schools have the same freedom to determine the curriculum, and this has undoubtedly facilitated and even encouraged the trend just noted. The hitherto separate development of lower domestic science education and general secondary education has never led to serious problems of overlap between subjects. This would change if home care were to be made a compulsory subject.

What would the course content be? The essential aspects of the subject in terms of preparation for society include budget management (which also comes under economics) and dietetics, the prevention of and coping with sickness and environmental matters (all of which come up under biology). If the proposed subject of home care were stripped of all these aspects already dealt with in other subjects, little else would remain than a training in practical skills for which it is questionable whether schools should bear the responsibility. In that case no subject at all would remain.

Dividing home care up over other subjects is not, however, free of disadvantages. The teaching of practical subjects is often justified on the grounds that certain pupils (especially those in junior vocational education) only arrive at insight and understanding through practical activity. The didactic tradition of subjects such as economics and biology could prove unsuitable and the abolition of practical subjects could mean the elimination of teaching methods particularly suited to such pupils. What was lost in one area would have to be re-developed elsewhere, in the same way that efforts are being made to make general secondary subjects more practically-oriented and socially relevant. This is being done not just in order to compensate for the difficulties faced by a particular group of pupils but also out of the conviction that such an approach is more in line with the preparatory function of education and that it can act as a motivating and effective educational strategy for pupils in general.

We are therefore left with a dilemma: leave home care out of basic education, but then biology and economics would need to be broadened to cover the aspects listed above; or drop biology and economics from the curriculum and transfer the content of those subjects to home care.

Both solutions would impose a heavy burden on the future. The home-care course remains to be developed, while the content and teaching methods of biology and economics would need to be radically adapted.

If, as in this case, the scrapping of subjects would create too many risks and uncertainties, a middle path needs to be found. What we would propose is as follows. In the United States (but also elsewhere), it is customary for certain elements of education to be presented in both a theoretical and a more practical variant, for example "home economics" and "applied

science“ alongside economics and the pure sciences. The subjects at issue in the Netherlands lend themselves to a similar solution. In specific terms, this would mean that the essential aspects of home care would be included in basic education, i.e. budget management, nutrition, prevention of and coping with sickness and environmental matters. Schools would be free to offer these topics either through practical subjects or through biology and economics. This would be more feasible if the existing subjects of domestic science and health and hygiene were *not* integrated into a single new subject. A number of hours could then be jointly assigned to biology and health and hygiene in the basic timetable. In order to make clear that these are didactic variants with the same content, it would be advisable for the substantive links between the subjects to be reflected in their titles. The same would be advisable for economics and domestic science. In practice a school could, depending on its needs and possibilities, offer either economics or domestic science or it could devise parallel courses for different groups of pupils. It would not be desirable to tie these variants to differing final levels, e.g. a practical or a theoretical variant; they should instead be worked up as didactic variants with essentially the same content and course objectives.

In our view the solution proposed for home care would fit in with present school practice and be capable of development in the future. Whether that development would ultimately lead to full-scale integration remains to be seen. The experience in Sweden with a similar arrangement for the teaching of mathematics – i.e. parallel courses with the same content but different didactics – point in the direction of the convergence over time of the two variants.

#### 4.2.12 *Art education (drawing, handicrafts and textural arts)*

##### **Why art education in basic education?**

Art education comprises drawing, handicrafts and textural arts. The latter two are interchangeable in most timetables: pupils are generally taught one or the other. The three subjects have certain goals in common, but differ in terms of the materials used and the relevant skills. Art education is an essential aspect of basic education if pupils do not just acquire proficiency in using certain materials but also gain insight into the meaning of images and how they are arrived at. Both elements – the creative and the reflexive component of art education – are important for enabling pupils to assimilate the flood of visual information on television and also in industry (e.g. product design), the built environment, clothing, newspapers and other forms of artistic expression.

Should pupils be taught all three subjects, or is the present situation in which they usually do drawing and one of the other two handicraft variants to be preferred? Or is it enough to set aside space for one of the subjects, as selected by the school and pupil? As far as communal goals are concerned, the provision of a series of subjects is not strictly necessary: those goals can be achieved by means of any one of the three subjects. It would therefore be best to let pupils choose for themselves (always pre-supposing that all three variants are available).

##### **What content?**

The question as to what the scale and content of a basic package for all should be in art education cannot be answered precisely at this stage. In general terms, it will need to cover working with various techniques and materials, art criticism, and an understanding of how images come about.

The teacher associations for art education recently produced a “list of concepts“ which may be regarded as an initial attempt to define the main subject-matter, working methods, concepts and aspects of art education, on the basis of which the course for basic education could be devised. Similarly the exams that have been introduced for these subjects in secondary



education could have a positive effect on the structuring and deepening of the courses in art education at a more junior level and on thinking generally about basic education in this field.

### **Introduction problems**

As will be evident from the foregoing, the most important problem lies in the field of curriculum development. Another difficulty concerns the undeveloped state of teaching methodology: the universities do not pay attention to this field, while teacher training in art education does not concentrate as much on the actual teaching side as it might do. The lack of suitable teaching material, especially for junior vocational pupils, is another handicap. A further problem at junior vocational level is the vocational twist already given to these subjects: handicrafts and textural arts are often mainly concerned with knowledge of materials and processing techniques, rather than with art education in the broad sense.

A positive point is the infrastructure that has been developed in connection with the introduction of examinations, which enables new ideas in the field of curriculum development and pedagogics to penetrate into the field more quickly than before.

### **Differentiation**

In the absence of any generally accepted opinion about the content of art education at the basic education stage, it is not as yet possible to indicate whether differentiation is necessary or desirable, or along what lines it should take place.

#### **4.2.13 Music**

##### **Why music in basic education?**

As an expression of inner feelings and ideas, as a means of sharing the feelings and conceptions of others, and as relaxation and an aesthetic experience, music has deep significance for many people. Most children aged between five and fifteen have a certain musical talent and interest that can be developed. Some of these talents go through a critical period in which they can be developed with considerable facility, whereas catching up at a later stage is much more difficult or even impossible, for which reason music needs to be provided as part of basic education. The development of musical interest and talents does not proceed autonomously: it is not a process of unfolding and natural growth but requires attention, direction and guidance and the provision of situations in which talent can flourish. School is indispensable for this purpose: music instruction outside the school does not reach all children (depending as it does on the interest and financial possibilities of the parents). Music lessons also have the function of providing an introduction to the expressive elements in the common culture, a function for which basic education is responsible. An essential part of that familiarization consists of an introduction to various musical traditions and acquaintance with different musical styles.

##### **What content?**

Within basic education in music, a distinction needs to be drawn between technical skills and musical content. The two cannot, of course, be entirely separated: the development of practical skills and the content of music are necessarily linked. It is neither possible nor desirable to specify the actual musical content that should be covered by basic education. In line with the observations above about the functions of basic musical education, however, it is clear that schools should introduce pupils to a *diversity* of musical

instruments, styles and traditions. This should at any event include attention to music outside the present musical youth culture.

The technical skills that need to be taught as part of basic education remain the same irrespective of the type of music: pupils need to develop a sense of rhythm, pitch, harmony, dynamics, tone colour and articulation. They need to learn to distinguish and name variations within each component and to reproduce such differences themselves. This can only be done by active music participation, for which a basic ability to read music is essential.

### **Introduction problems**

The introduction of a basic musical education at the present time is not feasible, the main reason being the inadequate state of music teaching at primary level. The teaching of music at secondary school should in theory build on the technical skills acquired at primary level, but in practice many primary schools fail to come up to the required level. Few teachers are capable of giving musical lessons; there is not enough money to appoint specialist music teachers; and the musical advisers appointed to oversee the teaching of music are assigned too many schools to do the job properly. Out-of-school music lessons are unable to compensate for the deficiencies in primary school music teaching since they apply to only a limited number of pupils.

The introduction of a basic education in music would therefore require the standards of music teaching at primary school to be raised. Short of that, music teachers at secondary level can do little more than to try and extend the musical horizons of their pupils in so far as their state of musical development permits.

### **Differentiation**

The pronounced differences in the quality of music teaching at primary school and the selective nature of participation in out-of-school musical education means that the differences in the level of musical attainment between pupils is particularly great and that for many pupils, a basic education in music is not even feasible. In these circumstances it is not really possible to indicate how the differentiation that may be necessary in basic education on the grounds of differences in aptitude or interest should be organized.

#### *4.2.14 Physical education*

### **Why physical education in basic education?**

Social developments have, if anything, heightened rather than lessened the need for physical education. Technological changes have meant a reduction in physical activity; not just adults but also children often find themselves one-sidedly engaged in mental activities, which can be injurious to both mental and physical health. The need for schools to provide physical education as a counterweight has become all the more pressing in the economic recession, which has had the effect of reducing out-of-school participation in sport in the lower-income groups. Physical education at school has the potential to reach every pupil, apart from which a broader range of activities can be offered than by sporting associations, which generally concentrate on a particular sport. Finally schools enable attention to be paid to children with poorly developed motor skills for sporting who would otherwise find it difficult to participate actively in sporting associations.

## **What content?**

The debate about a physical education curriculum in the Netherlands has scarcely crystallized out. While it is possible to specify the objectives of providing physical education as part of basic education, these can be achieved in many ways. The objectives may be summarized as follows: the subject must contribute towards the development of motor skills and to an improvement in physical fitness, and must prepare pupils for active recreational activities after they leave school. In addition it should promote emotional well-being by providing relaxation from mental strains and should develop social skills by teaching children to cooperate and the rules of fair play. These goals can be achieved by making a balanced choice from activities in the following fields: gymnastics (climbing, balancing, jumping and swinging), ball-games, self-defence (striking and dodging, judo), musical movement, athletics (running, jumping, throwing and knowing one's physical limits) and swimming.

## **Differentiation**

Differentiation has never played a part in physical education: pupils are graded into different types of schools on the basis of academic ability, and sporting ability does not come into it. Differences in individual aptitude, in the extent to which the different socio-economic groups take part in sport, in sporting facilities at schools and the provision of physical education instruction at primary school (which is by no means always given by trained P.E. teachers) lead to pronounced differences in sensomotor in the 12–15 year-old age group. Coping effectively with such a wide range of ability within the one group will test a trained P.E. teacher to the limit but can be done if the right activities are selected.

## **Introduction problems**

The inclusion of physical education in the basic education course presents fewer problems than most other subjects. In the first place physical education is already on the curriculum in this age group; secondly it is a subject in which mixed ability has always been the rule. Curriculum development and the question as to whether more standardization is required will, however, require considerable attention. In view of the increasing pressure on the education service for public accountability, evaluation techniques will also be needed in the field of physical education, for which further training will be needed for teachers.

### *4.2.15 Vocational subjects and labour-market orientation*

The inclusion in basic education of vocational subjects such as those currently taught at junior vocational schools (e.g. bricklaying and metalwork) would be a contradiction in terms since these subjects are, in varying degree, directed towards specific occupations and therefore of relevance only to those wishing to specialize in them. At the same time, however, the vocational subjects taught in junior vocational schools and especially the general, practical subjects such as domestic science, health and hygiene, and general techniques, have a function wider than that of preparing for a job, namely orienting pupils for further study or choice of career. That function is also important in basic education. At the end of the period of basic education – and in some cases, as will be seen, during it – pupils have to decide on their choice of career. This presupposes that they will have gained sufficient insight into their own potential and interests and into the requirements and nature of the various occupational fields. Exploring one's own potential and interests is a natural part of basic education, which can and should come into its own in all subjects. To some extent, familiarization with the requirements and nature of the various occupational fields could undoubtedly

be realized in this way if greater attention were to be paid in teaching to practical relevance. In addition, however, pupils will, as at present, need systematical information on further study or careers, and to be given individual guidance in making those decisions.

#### 4.2.16 *Religious and humanistic instruction*

Although religious and humanistic instruction does not form part of the prescribed list of subjects in secondary education, all schools set aside time for such instruction, even in the bridging classes between primary and secondary school, where the subjects that schools are required to teach are the most strictly defined.

The denominational side of life has always had a place in Dutch education, although the name given to such instruction varies widely: religious and humanistic education, religion, catechism, Bible studies, religious and humanistic movements, religious life and studies and the history of Christianity and humanism. Schools are free to set the precise syllabus themselves.

What is comparatively new is the requirement introduced under the Primary Education Act for the teaching of religious and humanistic movements. A major consideration behind the decision to include this subject in the curriculum was the importance attached to providing pupils with insight into and understanding of the various religious and humanistic movements relevant to Dutch society, instruction in which can help pupils to respect the achievements of their own and other cultures. Instruction in religious and humanistic movements and their background may be regarded as an indispensable preparation for their future in a (world) society dependant on cooperation and tolerance.

The description "religious and humanistic movements" has been chosen so as to get away from the notion of actual involvement in a particular faith or way of thought, the aim of the subject being instead to provide a general orientation towards the various movements of relevance in Dutch society. The subject sets out to inform pupils about these movements and to provide an insight into the religious and humanistic backgrounds to human activity and institutions. Equality of treatment of the various streams is the keynote.

By a religious or humanistic stream is meant a movement whose adherents provide answers to the fundamental questions of life within a coherent system of assumption and beliefs. The adherents regard these answers as providing the basis for human conduct, the organization of their lives and the formulation of attitudes towards social and other problems. These beliefs and views amount to a more or less coherent and integral vision of man and society shared by a considerable number of followers over a considerable period of time. Within these streams, a distinction may be drawn between religious faiths (e.g. Christianity, Judaism, Islam, Hinduism and Buddhism) and movements with a non-religious view of man and society (e.g. humanism, liberalism, socialism, Marxism and fascism).

What is the relationship between religious and humanistic instruction in the broad sense and denominational education? Religious and humanistic instruction is undoubtedly one of the subjects most closely related to people's sense of identity, and it cannot be denied that there is a certain conflict between the even-handed treatment of various faiths and movements on the one hand and denominational education on the other. In the latter case, the teacher tries to impart to the pupils the special nature of the belief system of which the school forms part. This necessarily amounts to a much more thorough exploration of one particular set of beliefs. Now there is no reason why this type of instruction should necessarily be at variance with a general orientation towards other religious and humanistic movements. Such an orientation can help people deepen their own frame of reference and explore the meaning and significance of life, and promote understanding of social phenomena and one's own and other people's norms and values. Ultimately, however, it will be a matter of deciding, in the light of one's own religious and philosophical experience, where one fits into the whole and

how one confronts these questions. In doing so the identity of the school in question inevitably plays a major part, and the right to establish that identity can cut across the ability to provide instruction in religious and humanistic movements in general. If this is so, it can act as a significant barrier to the inclusion of religious and humanistic instruction as a compulsory subject with clearly defined course objectives.

Nevertheless, there are two social trends that provide reason for including religious and humanistic instruction. In the first place there is the trend noted earlier towards a multi-cultural society, insight into which is impossible without an understanding of the different norms and value systems that go to make up that society. Secondly there is the fact that denominationally-based schools now draw their pupils from widely differing backgrounds.

Despite the incontestable importance of these developments, there are a number of reasons against the provision of separate "religious and humanistic movements" subject in basic education. To begin with, curriculum development is still a virgin field, in the sense that it is not yet sufficiently clear what and how pupils in the 12–16 year-old age group should be taught in this field, although various attempts to define a course have been made. In Britain, in particular, a number of promising and pioneering experiments are under way, such as the Chichester project, which take as their starting point the various forms of religious expression: church services, mosque worship, the sacrament of marriage, and so on. Secondly, it would be possible for instruction in religious and humanistic movements to be incorporated in various other subjects in basic education, such as history and geography and, to a lesser extent, art education and foreign languages.

These considerations, together with the importance of the subject in terms of personal identity and the need (which is not at issue in the Netherlands) to leave schools free to decide how their own identity should be given expression, lead the Council to the conclusion that religious and humanistic instruction should not be included as a subject in basic education. At the same time, room will of course have to be set aside in the timetable for schools to use as they see fit for such instruction. The introduction of a basic education system as proposed in this report would require certain basic course objectives to be drawn up. In view of the Dutch educational tradition that would not be feasible in the case of religious and humanistic instruction – another reason why it has not been included in the core curriculum below.

### **4.3 Conclusions: a core curriculum for basic education**

It has been argued above that the following subjects need to form part of the core curriculum in basic education: Dutch, English, a second modern language (French or German), mathematics, biology (with as a possible variant health and hygiene), physics (including certain aspects of chemistry), computer studies, history (including civics), geography, economics (including home economics), general techniques, art education (with a choice between drawing, handicrafts or textural arts), music and physical education.

Apart from this core curriculum, room needs to be set aside in the timetable in which, depending on their interests and aptitudes, pupils can do additional subjects or explore subjects on the core curriculum in greater depth. Other ways in which the free part could be used would be for remedial teaching, vocational orientation and, for those schools that wish, denominational education. For reasons mentioned elsewhere, one option in the free space should always be a third modern language.

Under the present system, tuition is based on a "curriculum framework". Each school has its own such framework, setting out the minimum number of lessons that should be given in each subject or set of subjects and the number of lessons that the school itself considers it should devote to compulsory and optional subjects. It may well be that this system is no longer needed once the course objectives have been drawn up as proposed in this report. To begin with, however, it would appear desirable to provide schools with a frame of reference in the form of a suggested curriculum

framework setting out the way in which the available time should be divided between the core curriculum and optional subjects. A table is provided below (purely by way of illustration) of how the time might be divided up in a way commensurate with the importance and content of the individual subjects. The table assumes that basic education would last for three years, with 30 lessons of 50 minutes each week for 40 weeks a year, or a total of 3,600 lessons. Needless to say the breakdown could vary from grade to grade, and not each subject would need to be taught in each year.

|   | Total number of lessons |
|---|-------------------------|
| Dutch                                     | 400                     |
| English                                   | 280                     |
| second modern language (French or German) | 240                     |
| mathematics                               | 400                     |
| biology/health & hygiene                  | 120                     |
| physics                                   | 200                     |
| computer studies                          | 20                      |
| history and civics                        | 200                     |
| geography                                 | 120                     |
| economics/home economics                  | 80                      |
| general techniques                        | 180                     |
| art education                             | 160                     |
| music                                     | 160                     |
| physical education                        | 360                     |
| free part                                 | 680                     |
|   | 3600                    |

The Council considers that laying down course objectives for all pupils affords the best guarantee that everyone would in fact receive a basic education. In nearly all subjects, however, this will mean a need for differentiation in course objectives if pupils are to be given learning tasks that are within their reach but which are at the same time sufficiently challenging. Course objectives should as far as possible be common as regards their content, with any differences centring on the depth in which the course is covered. Achieving a “unity in diversity“ that leaves room for variations in individual ability while at the same time making sure that no-one is deprived of essential instruction is one of the great challenges of basic education. In view of the pronounced differences in ability between pupils (due partly to environmental factors, especially as regards language skills) and the results obtained at primary school (e.g. in mathematics), setting according to progress will be needed in certain subjects.

With the possible exception of physical education, course objectives need to be defined in each subject, although the monitoring of those objectives would not have to take place at the same level in all subjects. In most subjects it will be both possible and necessary to assess pupils’ attainment in terms of the course objectives. With respect to other subjects it would provisionally be sufficient to have school inspectors assess what schools were offering. The latter form of evaluation will to begin with need to take place with the new (or comparatively new) subjects of computer studies and general techniques, and in those subjects in which no tradition has as yet been developed of individual assessment, such as music and art education – although here too the scope for individual assessment will need to be explored and developed.

Given the range of subjects in the core curriculum it would be desirable for the subjects to be divided over the various years. This means that assessment (both individual and at school level) would not be confined to the end of the basic education period but in some subjects might take place earlier.

## **5. PUPILS, TEACHERS AND THE PRECONDITIONS FOR BASIC EDUCATION**

The proposed basic education course imposes great demands on the education system. In its request for advice on the subject, the Government asked that a balance be struck between those demands and what schools could actually do. This called for further research into the educational possibilities at schools, including the development of learning ability among pupils, pupil motivation, and teacher motivation to implement changes in education. The research into these considerations contributed to the conclusions reached by the Council on the desirable duration and level of basic education.

### **5.1 The development of learning ability**

The development of learning ability is a necessary precondition for obtaining effective results in basic education. It also provides a basis for further education at a later age (e.g. adult education). Learning ability may be regarded as a complex set of personal attributes affecting individual attainment. Depending on the development of these attributes a certain level of attainment will be achieved, varying from pupil to pupil. Some of these properties can be influenced by school; learning ability should not be regarded as something monolithic or innate which children have to a differing degree. A general basic education programme is possible provided arrangements are made to improve the learning capacity of certain groups of children, especially those from disadvantaged backgrounds. An exception has to be made for the comparatively small group of low achievers with certain cognitive and sensory handicaps. These children would continue to qualify for special education. Two important characteristics affecting educational attainment are prior knowledge and conceptual ability.

#### **Prior knowledge**

Children acquire knowledge of their physical and social environment both at home and at school. This knowledge, often picked up without effort, is required by children, and later adults, to operate effectively. Numeracy is, for example, useful for controlling the physical environment, while literacy and the ability to express oneself orally are useful in the social environment. Reading, reckoning and similar attainments require a certain degree of prior knowledge; similarly these skills themselves constitute an essential basis for the development of other knowledge and skills (e.g. one has to be able to make calculations in order to do carpentry).

Skills of this kind are therefore often acquired in sequence. To be able to tell a story, for example, a child must be able to form sentences. If previous skills in the hierarchy have not been properly mastered, this will create difficulties when dealing with more complex problems. Subsidiary skills need to reach the stage of being largely routine before more ambitious skills can be acquired. For one pupil, a new task can be a relatively simple problem once the required prior knowledge has become routine; for another who has not yet reached that stage, the problem will be troublesome and time-consuming. Not all skills, however, are built up in a hierarchical fashion; a person can, for example, learn to play a musical instrument without being able to read.

It will be evident from the above that differences in prior knowledge need to be taken into account from the beginning of basic education since the differences in pupils' learning ability and achievement will otherwise

increase sharply. Some children when they start school lack the necessary elementary knowledge, for example of the relational terms (less than, equal to, etc.) needed for the teaching of arithmetic and for following instruction in general. Alternatively they may lack the basic vocabulary used in education. Other examples include the need for a certain familiarity with numbers and counting, the possession of adequate motor skills, the ability to structure the material in books and to display relatively fixed behaviour patterns in structured situations (such as unpacking one's things and tidying up). In so far as basic skills were lacking in these areas, efforts would have to be made in basic education to impart them.

Awareness of the hierarchical structure of knowledge throws a new light on the analytical distinctions often drawn between two types of cognitive skills, namely factual knowledge and reasoning ability. Problem-solving depends on reasoning ability, but the latter in turn depends on a certain degree of prior knowledge. An effective problem-solver is someone who is able to make a rapid synthesis of the known facts and, with the application of reasoning, arrives at instruments for resolving complex problems. One of the psychologists consulted by the Council noted in this respect:

For a long time it has been argued that it was particularly important to teach methods for acquiring knowledge and problem-solving. Knowledge was said to get rapidly out of date, but if children had a mastery of methods they would be in a position to acquire knowledge at any time. More recently, however, evidence has come to light that methods lacking real substance do not work. Research has shown that prior knowledge explains a very large part – up to 50 per cent – of the variations in pupils' achievement. When it comes to the emphasis on knowledge, the "back to basics" movement must therefore be acknowledged to be along the right lines.

Pupils' ability to assimilate new knowledge is, therefore, determined to a large extent by their prior knowledge.

### **Capacity for abstraction**

The individual development of children is not only characterized by an increasing need to acquire complex knowledge and the growing possibilities for doing so, but also by a notable increase in the need for conceptualization for problem-solving. Nearly all children have a certain capacity for abstraction before starting primary school. This applies to the two main meanings of the concept of abstraction, i.e. the ability to interpret behaviour and statements in terms of their intentions, and the ability to understand or use symbolic devices such as drawings, a story or a film. In this respect it may be noted that by the age of four, nearly all children have already solved a problem imposing considerable demands on the capacity for abstraction, namely learning to communicate in a language. Apart from language, other symbol systems are also used in education, such as numbers and programming language.

There are no indications to suggest that children develop a *general* capacity for symbolization enabling them to deal with symbolic material. Symbolic functions appear, instead, to be system-specific. Given this uncertainty it would be inadvisable to confine basic education to just a few subjects in the expectation that these would then offer an adequate basis for the development of a general capacity for abstraction and hence for the acquisition of knowledge and skills in other areas.

### **Teacher training**

The development of learning ability in children is very demanding. The quality of teachers is probably one of the main factors affecting the quality of education. For this reason special attention will need to be paid to the selection and training of teachers and also to factors affecting selection.



Instruction requires sound specialist knowledge on the part of teachers, apart from which personal relationships with pupils and exercising discipline call for special skills. It would be advisable to set up experiments to promote the quality of teacher training and help introduce educational innovations – all of which would serve to make teaching a more attractive profession.

## **5.2 Motivation of pupils and teachers**

The growing number of pupils has led to concern in publications on education about pupil and teacher motivation. Problems in this area take the form of poor achievement, unruly behaviour in class, and (in a small number of cases) truancy. Surveys suggest that motivation problems are at their most acute in junior vocational and junior general secondary schools, which have the lowest academic status.

A survey conducted among teachers in lower secondary education indicated that most regarded their profession as stimulating and interesting. Many, however, complained that they had too many duties and were unhappy about their legal status. Two-thirds of the teachers agreed with the proposition that the number of unmotivated pupils had been growing in recent years. The majority of teachers would oppose plans for integrated education if this were to mean mixed-ability classes. On the other hand there is general support for broadening the curriculum and for postponing the point of personal decision-making for further education to the age of 15 or 16. Two-thirds of teachers would support the introduction of a basic level to be attained by all pupils at the end of the first stage of secondary education, subject to the condition that the level not be pitched too high and that extra attention be paid to coaching weaker pupils.

## **5.3 Duration and level of basic education**

There is no such thing as a natural finishing age for basic education; the age limit for basic education should, instead, be made dependent on the nature and level of that education. There are no a priori reasons for believing that motivation tapers off at a certain age, and that this should form the point at which basic education ends. A drop in motivation could be countered by making sure the curriculum retained relevance for the age group in question.

There are, however, other reasons for setting an age limit. As they approach adulthood, many young people (for varying reasons), no longer wish or are unable to pursue full-time education. Basic education will need to be completed by this stage, as well as the vocational training required to earn a living in the case of those seeking immediate employment. This implies that the age limit for basic education should be set at 15 to 16.

The question then arises as to whether this also applies to pupils who, for various reasons, need more time to attain the usual level of achievement in basic education. Naturally a certain margin is both feasible and desirable (e.g. one further year to allow for problems in adolescence), but it would seem undesirable for the extension of the usual period of basic education to exceed one year. Such pupils should instead receive extra time and coaching during the basic education period. Rather than lengthening the course, the school week could be extended for for this category or, better still, extra time could be set aside during the normal school week to help them catch up – the obvious time being the “free“ part of the curriculum.

In order to provide a certain framework for the extra tuition required for weaker pupils, a general standard to be attained by all pupils at the end of the period of basic education will need to be formulated. In addition, it might be advisable to lay down standards at earlier points, e.g. the end of primary education. This would help identify weaker pupils so that they could be given the necessary attention to prevent them from getting further

and further behind, to the point of being unable to catch up at the end of the course.

Basic education should not, however, be defined solely in terms of this general standard, since this could involve an overall reduction in the level of education in the Netherlands. Such a system would also mean that there was no yardstick for assessing many pupils' achievement, for which reason the Council would recommend that a second, higher standard also be laid down for each subject. At the end of basic education, many pupils may be expected to have achieved the higher standard in several subjects. Those who had not done so, but wished to do so, could be given an extra year.

## 6. THE STRUCTURE OF BASIC EDUCATION

### 6.1 Social inequality and equal opportunities in education

Raising the age (at present twelve) at which pupils have to decide their choice of school has been widely urged on other than educational grounds. The unequal rate of participation in the most highly and poorly regarded types of schools by the various socio-economic groups and also by boys and girls has become increasingly evident, and criticism of these imbalances has led to pressure for a radical reorganization of the way in which selection takes place in secondary education. Education is known to be one of the major factors responsible for social inequality. The need for fairness and the principle of "equal opportunity in education" which was accepted almost universally in Dutch society after 1960 have also contributed significantly to pressure for a change in the structure of secondary education.

The Council's report examines the various explanations given in educational sociology and psychology for the unequal level of participation in the various forms of education. The debate on these matters is by no means resolved.

The report proceeds to define the concept of "equal opportunity" in education more precisely. Since 1960 all the political parties in the Netherlands have included the principle of equal opportunity in their party manifestos (although not always agreeing about its precise meaning). The principle is discussed in the report on the basis of analyses by the American sociologist Coleman and the British legal philosopher Fishkin. In his study *Justice, Equal Opportunity and the Family* (1983), Fishkin formulated his "trilemma", namely that of choosing between three principles all equally valued in Western culture:

- a. the principle of equal opportunity;
- b. the principle of merit;
- c. the principle of the autonomy of the family.

The trilemma lies in the fact that the three principles cannot all be attained at the same time in present-day society. The solution lies in seeing each of the principles as "approaches towards" rather than as politically binding objectives, a notion adopted by the Council in its proposals for the structure of basic education.

### 6.2 Forms of differentiation

The report contains a detailed analysis of the various forms of differentiation in secondary education and their consequences. The central question is whether basic education automatically entails communal education throughout the period in the same school and class, with a standard duration and uniform teaching methods, or whether certain forms of differentiation are compatible with the common objectives.

The discussion about the appropriate structure of secondary education is dominated by the question as to whether basic education should be provided in one type of school only or not. The report argues that this is formulating the question too simply. What is at issue is the interaction of a number of factors operating simultaneously, which mutually and severally determine the content, level and quality of basic education. These aspects may in turn be regarded as factors determining other educational characteristics. These factors are:

1. the structure of the school system;
2. the content of the subjects;
3. the level at which the subjects are taught;

4. the time available or duration of the course;
5. the teaching methods;
6. the termination of basic education (timing, methods for evaluating attainment);
7. the interaction between pupils and the education provided, in the sense of factors 2–6;
8. academic attainment.

If these factors are treated as an interrelated whole, it becomes clear that it is not possible to establish a monocausal relationship between the school structure (factor 1) and the final level of academic achievement (factor 8). Each of the individual factors can take a different form, and each variant has a particular influence on the other factors. If the school structure is not uniform (as for example in the differentiated Dutch system, see the diagram in Chapter 1), the other factors will then vary less within the one school (e.g. the method and level of instruction). Conversely, if the structure or the content of the subjects taught is standardized, the level and method of instruction will start to vary, and so on.

Against the background of this complex web of relationships, the Council's report examines in detail the advantages and disadvantages of three main types of differentiation, namely: 1) differentiation in the types of schools; 2) streaming within the one type of school or combined school; 3) setting or grouping. The Council arrived at the following conclusions.

1. In seeking to determine an adequate structure for basic education, it is essential to recognize the interconnection between the various factors that can be varied with a view to bringing about differentiation among pupils. The choice of a particular form of standardization will necessarily generate or strengthen differentiation in the other factors.
2. Experience with the introduction of basic education in other countries indicates that the realization of such a system is essentially a development process, often of ten years or more, with its own dynamics and "laws". Precisely because of the numerous ways in which the various forms of differentiation can be combined, failure to recognize the organic nature of the process and an attempt to introduce the ideal or most advanced form of basic education without allowing time for the development process to run its course will rapidly result in chaos. For this reason the Council would recommend an introduction period for basic education of ten years.
3. The analysis reveals the importance of the differentiated structure as it has evolved historically and culturally. Even when the nature of differentiation is altered, the historically evolved structure continues to exercise an influence for a long time.

These three conclusions therefore provide grounds for caution. If an attempt were to be made to realize too many objectives at once in too short a space of time, for example a fully comprehensive basic education in all schools in the Netherlands, with a single type of school, mixed ability classes and standardized lessons, this would be bound to lead to chaos. A fourth conclusion closely related to these three conclusions therefore becomes important.

4. Before making any decisions about particular forms of differentiation, it is vital for there to be a genuine political will to introduce a system of basic education. That will, which is more important than deciding the structure to be adopted, needs to be expressed at national level by Parliament and endorsed at school level by teachers and pupils, and gives shape to the complicated process of introducing and structuring basic education.

### **Conclusions with respect to forms of differentiation**

Because the school structure and the remaining factors are so closely interrelated, the decision in favour of one or more forms of differentiation is of major strategic importance. This report is based on the general premise of

filling out the basic education curriculum as best as possible in line with the capacities and aptitudes of each pupil. In addition a general increase in the standard of education is considered necessary, while primary education will be required to reintroduce unity into lower secondary schooling.

For these reasons the Council has opted for standardization with respect to two strategic factors, namely the content of education and the final standard for the achievements of pupils (the latter, after careful consideration, being split into two levels). Opting for standardization in these two fields makes it likely that certain developments will take place with respect to other factors, especially the school structure and instruction methods (i.e. pedagogic differentiation).

In other words, the decision to standardize content and the final level and to combine these unifying factors with provision for differentiation in the level attained, opens the way for a multiform pattern of differentiation and teaching methods. The resultant variation will, however, remain bound together by the two constants in the process, namely the content and the final standard.

### **6.3 Towards a gradual introduction of basic education**

#### **a. The core curriculum**

The key aspect of the Council's advisory report is the recommendation that a core curriculum be introduced along the lines described earlier for all pupils at all schools in the first stage of secondary education. The core curriculum would consist of a package of the same basic subjects with the same syllabus for all pupils.

The core curriculum would take up 80 percent of the teaching time. The remaining "free part" of the timetable could be used either for greater in-depth treatment of the basic subjects or for the addition of other subjects, as each school saw fit. All schools would, however, be required to introduce the core curriculum within a period of ten years. Here, the Council believes, there should be no freedom of choice.

#### **b. Formal conclusion of the course: the course objectives**

In order to promote and preserve unity in basic education, the Council proposes that the course should be formally concluded with a formal assessment. The course objectives for basic education would lay down the knowledge, skills and insights required in each subject, and would constitute the general guidelines on which schools based their instruction in those subjects. The course objectives and the examination syllabuses should in the Council's view be decided at national level, while the standards to be set should be the responsibility of the central government.

The Council's proposals in this area are based on the following arguments:

1. in the absence of any formal assessment at the end of the course, major and complex differences could arise in the basic education provided in individual schools, which would, in practice, nullify the central concept of basic education as formulated in this report;
2. the lack of formal assessment at the end of the course would be to the advantage of pupils from more favourable backgrounds (i.e. the higher socio-economic groups), since teachers, tend, on an informal and often irrational basis, to have higher expectations of such pupils. Generally speaking, therefore, vague and informal standards tend to operate to the advantage of those already privileged, and the formalization of standards (in the form of exams, etc.) could exert a corrective influence on teacher preconceptions. For those pupils from lower socio-economic groups who have been able to hold their own academically with high achievers, formal assessment would therefore have a positive effect on their further educational prospects;

3. similarly in the case of girls, informal assessment standards are more likely to lead to systematic distortions in the way in which they decide to specialize, and in the choice of school or career;
4. in the absence of formal assessment, the emphasis will lie on teacher assessment, which only those directly concerned will be in a position to evaluate.

The Council sees the communal core curriculum and the central regulation of the formal course objectives as the fixed points of its proposal. Within that framework, a heterogeneous pattern of variations and differentiation in the other factors would be able to evolve. As the discussion below will indicate, the existence of these two ~~strategically selected~~ reference points means that the consequences of other forms of differentiation will remain identifiable and clear.

### c. Differentiation according to level

The Council considers that the interests of basic education would best be served by the setting of a general standard for all pupils. It is, however, conscious that considerable effort on the part of those concerned – pupils, teachers, school administrators and the Ministry of Education – will be required if as many pupils as possible are to attain that level.

The system of basic education is also designed to help pupils discover their individual potential. In many cases, pupils will be able to do better than the general standard in one or more subjects, or will be able to do a wider range of subjects, and everyone should be given full opportunity of doing so. The course can tie in with individual ability either by treating the subject-matter of the core curriculum in greater depth, or by adding other subjects in the free part of the course. The former would not conflict with the principle of a general basic education, but a widening of the course could. All pupils should be given the opportunity of attaining a higher level of achievement in certain subjects. Most would in fact be likely to do so in a basic education course lasting three to four years.

The Council has reached the conclusion that differentiation according to level should be a built-in part of the education. Pupils should be encouraged to develop as far as they can in their chosen direction. For this reason *all* schools should be required to provide instruction at a level higher than that of the general standard. If this were to happen at only a few instead of all schools, the desired principle of a *general* basic education (at two levels) would be rapidly abandoned in practice and many pupils would find their prospects of development obstructed.

Apart from deciding on the desirability of differentiation in the level at which the various subjects are taught, it must be decided whether the higher level would also need to be concluded with an examination. The Council acknowledges the risks associated with this type of differentiation. In the first place there is the possibility that a two-tier final level could cast a shadow over the initial years of secondary schooling. Instead of leading to the deferment of final choices and selection, the two-tier system could have the effect that selection for further education after basic education took place immediately after primary schooling. At that point, however, pupils have not yet completed their basic education, and premature selection in this way – in which pupils' social environment could play an informal role – would mean that not everyone received the opportunity of a basic education in line with his or her capabilities. It could also eliminate the incentive to devise new teaching methods for mixed-ability groups. Finally here is the risk that the provision of education at a level above the general standard could lead to a downgrading in the status of that standard, with a consequent loss in incentive for the education system to maintain standards at the lower level. This could in turn lead to a distinction being drawn between people with a general basic education and those with a “basic education plus“ – which would be at variance with the universality principle of basic education.

It could even be argued that pupils able to do better than the general standard should not have to demonstrate their ability to do so in a formal, final examination: their ability will emerge in any case. Deciding for or against the need for differentiation in the final academic standard is a good illustration of the numerous dilemmas encountered by the Council in compiling this report. Despite the disadvantages attached to a final examination system, the Council, after lengthy deliberation and after weighing the differing (and sometimes subjective) viewpoints, reached the conclusion that differentiation in the level of education should apply not just to the actual provision of education but should also find expression in an examination. In doing so the Council was swayed by the following arguments:

1. pupils need an incentive. If the general standard level is too low, that incentive may be lacking. One cannot really count on an “automatic” tendency on the part of pupils to do more than strictly required;
2. as with the setting of a final level in general, a two-tier examination system would provide pupils from lower socio-economic groups with the opportunity of demonstrating their ability in formal, objective terms. Assessment in purely informal terms at the higher level would act to the disadvantage of able but shy pupils from lower socio-economic groups in relation to mediocre pupils higher up the socio-economic scale. This applies mutatis mutandis to girls in relation to boys;
3. final examinations would ensure that all schools would in principle offer higher-level tuition;
4. since pupils would be able to decide which level to sit in each individual subject, there would be little likelihood of a split into two broad groups of pupils. The opposite would, in fact, be likely: a highly diversified pattern of final levels with all sorts of subject combinations at one level or other would arise from the Council’s proposals. The entitlements these combinations would give to further education would, however, need to be strictly laid down;
5. two-tier system with respect to both teaching and the final examinations would be consistent with the present system in secondary education. The provision of different levels – even if only two – would make the step to the basic education stage easier for those who might otherwise find the transition too abrupt and daunting.

This part of the Council’s proposals is based on the assumption that all schools at which basic education was provided would teach and examine at the two levels. The extra costs this would entail are the logical consequence of the desire to increase educational standards. Unless the two-tier system is universal the proposal loses its rationale, and the real danger would arise that, in anticipation of the next stage of education, schools providing basic education would be split into two divisions.

#### **d. Differentiation in the length of basic education**

If the duration of basic education were to be kept the same for all pupils, major differences in knowledge and skills would be likely to arise between pupils. Partly because the introduction of a basic education would be designed to raise the general standard of education, the final target level should be kept constant. This means that the length of the course would need to be variable.

More specifically, the Council would propose that certain pupils could go on to a fourth year in order to attain the required general standard level. Many pupils would be able to do more subjects at the higher level if given an extra year, and those who wished to do so should be given the opportunity.

#### **e. The free part**

The communal nature of the course should be designed to ensure that all pupils receive a basic education, but it should also leave room for specialization, more intensive instruction or remedial teaching. For this

reason the Council would propose setting aside part of the total tuition time for the core curriculum and leaving the remaining time as a free part. Although any division must necessarily be somewhat arbitrary, the Council considers the ratio should be in the order of 80/20.

The free part could be used to prepare for further schooling (e.g. a third foreign language), for deepening the basic education, for making up lost ground and/or for vocational preparation. Although pupils would ideally choose subjects in the free part that reflected their own leanings and likely specialization, the Council realizes that specialization at this stage would still be strongly environmentally determined. The comparatively narrow base of the free part should not, therefore, become the main determinant of ultimate specialization, for which reason the Council does not consider that the subjects taken in the free part should act as an entitlement to continuing education.

#### **f. Differentiation in teaching methods and streaming**

The importance accorded to the course objectives in the Council's proposals does not detract from the freedom that would be left to schools to decide how they wanted to prepare pupils for their final examinations. Differences in teaching methods and different forms of streaming (ranging from grouping and setting to fully comprehensive middle schools) could co-exist. It would be up to the individual schools to decide, in the light of the core curriculum and the centrally formulated course objectives, how they felt they could best prepare the largest number of pupils for the appropriate level.

The Council's proposals would therefore represent a challenge to schools to develop the basic education system out of the existing system of secondary education and to implement the necessary educational reforms and innovations. The Council would therefore advise that the government make do with the "steering instrument" provided by the core curriculum and the central course objectives and refrain from laying down particular differentiation requirements or teaching methods. The Council is aware that there is a risk that schools might as a result use their freedom by failing to experiment with new teaching or grouping methods. It regards this, however, as an inevitable consequence of its proposal and as something for which schools would have to accept responsibility. According to the Council's analysis, the very interdependence between the various features of education should guarantee the introduction – if only gradual – of educational innovations.

#### **g. Examinations**

Of the fourteen subjects in the Council's core curriculum, some are new and would require the development of curriculums and exam syllabuses. The question arises as to whether examinations would be required in all subjects and at the same point. The Council would recommend that the government explore these questions, but would note a number of possibilities.

One possibility would be for certain subjects to be completed before the end of the third year. In a number of subjects the assessment of individual achievement will not be possible straight away: some subjects still need to be developed, while others have little if any exam tradition. In the case of certain subjects, therefore, an inspection system would suffice for the present.

The Council does not see it as its task to come up with detailed proposals for an examination system. It would, however, recommend that the exams be set at national level and that the formal termination arrangements for basic education be incorporated into the statutory regulations covering secondary education.



#### **h. The combination of basic education and vocational training**

Considerable attention will have to be paid within basic education to striking a balance between theoretical/cognitive and more practically-oriented aspects. A division into cognitive and practical subjects would not seem desirable since both aspects come into (or could be developed) in many subjects. This could in large measure overcome the difficulties that many pupils (especially those at junior vocational schools) have with the theoretical orientation of much of the subject-matter.

At the same time, however, separate provision needs to be made for those pupils for whom a lengthy basic education and the postponement of vocational training would be undesirable, e.g. where pupils are vocationally minded, have a strong practical bent or have made up their minds in favour of a particular trade (however socially conditioned that choice may be). Basic education is, however, just as important for these pupils' career prospects. The distinction between basic education and vocational training is to a certain extent an artificial one because many of the skills learned in basic education are in fact highly relevant to a wide variety of job situations. In order to avoid a difficult choice between a lengthy basic education of say four years (up to school-leaving age) without vocational preparation and earlier vocational training with a limited basic education, a combination of basic education and vocational training would be attractive for these pupils. In these cases the length of basic education would be made variable: vocational training would start at an earlier age and basic education would continue for an additional year (making four or five years in all). This variant would conclude with an examination in basic education (up to at least the general standard level) and in the vocational subjects. In order to prevent premature pre-selection while at the same time coming to meet the obvious vocational leanings that many pupils have, vocational preparation would best start at the end of the second year. This would be similar to the present system in junior vocational education, where pupils are required to decide how they want to specialize after two years of general education.

The combination of basic education and vocational preparation would make considerable demands on pupil motivation and effort. The mixed variant would not amount to an education of lesser quality, but would be another path that took account of pupil's preferences and provided a basis for many forms of continuing vocational education. For the majority of the pupils opting for this variant, the basic education would need to be at once challenging and within their capabilities.

#### **6.4 Structural consequences of the substantive proposals**

The introduction of universal basic education would mean that all pupils aged between 12 and 15 to 16 did the same subjects in approximately 80 per cent of the timetable. The differences between the various schools and school types would become smaller. How basic education would be introduced stands or falls with the question as to how it would relate to the existing school system and other forms of education, especially further education.

On the basis of an analysis of the possible forms of differentiation, the Council has reached the conclusion that it is not essential to tie basic education to a particular type of school or to a particular form of grouping or streaming. Precisely because the common core curriculum and the centrally laid-down course objectives would cause schools to grow towards one another, it would be possible to leave schools with wide freedoms with respect to other aspects of education. As a result a development process would be generated within the existing school system which, in the Council's view, should be completed within ten years. By the end of that period all secondary schools would be required to have introduced the core curriculum in the first stage.

At the end of that period schools or combined schools will be expected (where necessary by merging) to have prepared themselves for the compulsory

introduction of basic education. Schools that wished to make an earlier start in this respect should be given every opportunity of doing so and be encouraged by the government to provide basic education as they saw fit.

At the end of the ten-year period four structural variants would be possible for secondary education:

1. the present Dutch system of eight school types, with a single compulsory core curriculum;
2. two to three school types, resulting from combinations of schools, with a single compulsory core curriculum;
3. differentiated integration: a single type of school, a single compulsory core curriculum, and several classes and/or streams;
4. complete integration: a single type of school, single compulsory core curriculum, single class and single lesson.

Rather than discussing the most appropriate school structure the Council will confine itself to noting the most likely structure. In its view the final structure will consist of a system in which variants 2, 3 and 4 will be developed side by side or in sequence and can co-exist. The unity of the system will derive not from the structure but from the content of the basic education and the central course objectives. Within a framework of continuing diversity of schools and school types, unity will be preserved by means of the common curriculum and the prescribed course objectives.

## 7. PROCEDURE FOR INTRODUCING BASIC EDUCATION

The introduction of basic education in which all pupils at all schools are required to do a core curriculum in the first stage of secondary education will depend critically on the existence of widespread political and social support. That support would best be expressed in the form of an act of Parliament establishing the principle of basic education and laying down its content and duration. After the passing of the Act, the system of basic education would need to be phased in over a ten-year period. The Act could also lay the foundation for the definitive direction in which secondary schools were to evolve, thus helping eliminate the long-standing uncertainty in this area. The new Act could also lay down the principle of a general standard and a higher level in each subject of basic education and that of a centrally determined examinations syllabus. The Act should also stimulate the entitlements to further education provided by the successful completion of basic education.

In introducing the system, it would be important to draw a distinction between the central setting of standards for basic education (in the form of course objectives and examination syllabuses) and the process of planning and organization.

Whereas the planning, organization and preparation of basic education (e.g. curriculum development) could be entrusted to the existing bodies in these fields, this would not apply to the setting of standards as regards content and course objectives. The Council considers that the central coordination of standard setting for basic education will require the establishment of a separate coordinating body for at least the length of the introductory period.

To this end the Council would recommend the appointment of a *Central Examinations Commission*. The Committee's main function would be to formulate the course objectives and to oversee the coordination between the various subjects. The Committee would report to the Minister of Education and Science, who would have ultimate responsibility for deciding the prescribed course objectives.

The Committee would need to include people from outside the education system, and could draw on expert advice in specialized areas.

In addition the Council considers that a second instrument would be needed to monitor the introduction and quality of basic education, namely a system of periodic surveys to review the situation. The Council indicates in its report the basis on which such surveys might be carried out.

Finally the Schools Inspectorate should be drawn into the introduction of basic education in a supervisory and advisory capacity. In doing so the Inspectorate's role would not change, although there might be a shift in emphasis from supervision to advice and stimulation.

## 8. RECOMMENDATIONS

1. The introduction of a universal system of basic education in the first stage of secondary education deserves to be supported on the grounds of:
  - a. the need to raise the general standard of education and to help (future) members of society to participate effectively in their cultural heritage;
  - b. the cultural and political necessity of co-existence in a plural society;
  - c. the demands of economic and technological modernization;
  - d. the need to reduce inequality of opportunity in education by preventing premature decision-making with respect to future schooling or career;
  - e. improving and upgrading the status of vocational education, which runs the risk of becoming a residual or last-resort form of education.
2. An important precondition for the introduction of basic education would be a clear expression of political intent by the government and Parliament, preferably in the form of a Basic Education Act. This could also provide the long-felt need to settle the appropriate structure for the first stage of secondary schooling.
3. The first step towards instituting a system of basic education would be to define the content; this would in turn determine the way in which the education was organized.
4. Various types of skills and knowledge would need to be acquired in basic education, namely:
  - a. an analytical, abstract understanding of the basic structure of various fields of study;
  - b. practical skills;
  - c. insight into the cultural environment: the ability to orient oneself in a complex society.

These three elements of basic education should form a well-balanced mix in all subjects, and should be explicitly included in the formulation of course objectives.
5. The Council recommends that the content of basic education be laid down in the form of a compulsory core curriculum taking up some 80 percent of the timetable and comprising the following subjects: Dutch, English, a second modern foreign language (German or French), mathematics, biology including health and hygiene, physics including a basic introduction to chemistry, computer studies, history and civics, geography, economics/home economics, general techniques, art education, music and physical education.

The remaining 20 per cent of the timetable would form a “free part“ to be used as each school saw fit, with the proviso that a third foreign language (French or German) should always be offered.
6. The Council would recommend that the content and course objectives of basic education be determined at central level. The curriculum should be developed by the existing bodies set up for that purpose and be monitored by the Schools Inspectorate. The determination, coordination and monitoring of the course objectives should be handled by a specially appointed Central Examinations Committee.
7. The Council recommends that the course objectives for basic education take the form of a general standard and a higher level in each subject. The higher level would act as an incentive for able pupils and would make it easier to assess the quality of the education provided to each pupil. The Council would propose that the course be formally concluded in the form of an examination at both levels.

8. While maintaining a unified structure in terms of educational content and course objectives, the Council would recommend that differentiation be possible in terms of duration, teaching methods and grouping methods.
9. Differentiation in terms of level and length of the course should in the Council's view be laid down by law and be possible in *all* schools.
10. Given a common curriculum and centrally determined course objectives, the length of basic education should be variable so as to enable pupils to attain the highest level they can. Given the exacting demands that the proposed basic education will impose on pupils and schools, the course should be at least a three-year one. Provision should be made for a fourth year for pupils unable to attain the general standard or who, having passed at that level, wished to sit the higher standard in certain subjects.
11. No special regulations should be laid down with respect to the structure of the schools responsible for providing the basic education. The schools should be given maximum freedom to prepare pupils for the course objectives as they saw fit. Special room should be created for schools that wished to specialize in the provision of basic education during the first stage of secondary schooling.
12. The Council believes that special attention should be paid to upgrading the status of vocational education. One way of doing so would be the introduction of combined vocational and basic education after the first two years of basic education.
13. The system would need to be phased in gradually over a ten-year period, by the end of which all schools would be required to have introduced the core curriculum.
14. The additional costs associated with the introduction of basic education should be accepted as part and parcel of the aim of raising the general standard of education.

## NOTES

<sup>1</sup> OECD, *Compulsory Schooling in a Changing World*; Paris, 1983.

<sup>2</sup> J. C. van Bruggen, *Leren, school en onderwijzen op weg naar 2020*; Enschede, Stichting voor de Leerplanontwikkeling, 1983.

<sup>3</sup> H. Gardner, *Frames of Mind; the Theory of Multiple Intelligences*; London, Heinemann, 1984, p. 383.

<sup>4</sup> *Ibid.*, Part II, pp. 73–277.

<sup>5</sup> *Ibid.*, p. 78.

<sup>6</sup> *Ibid.*, pp. 99–277.

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