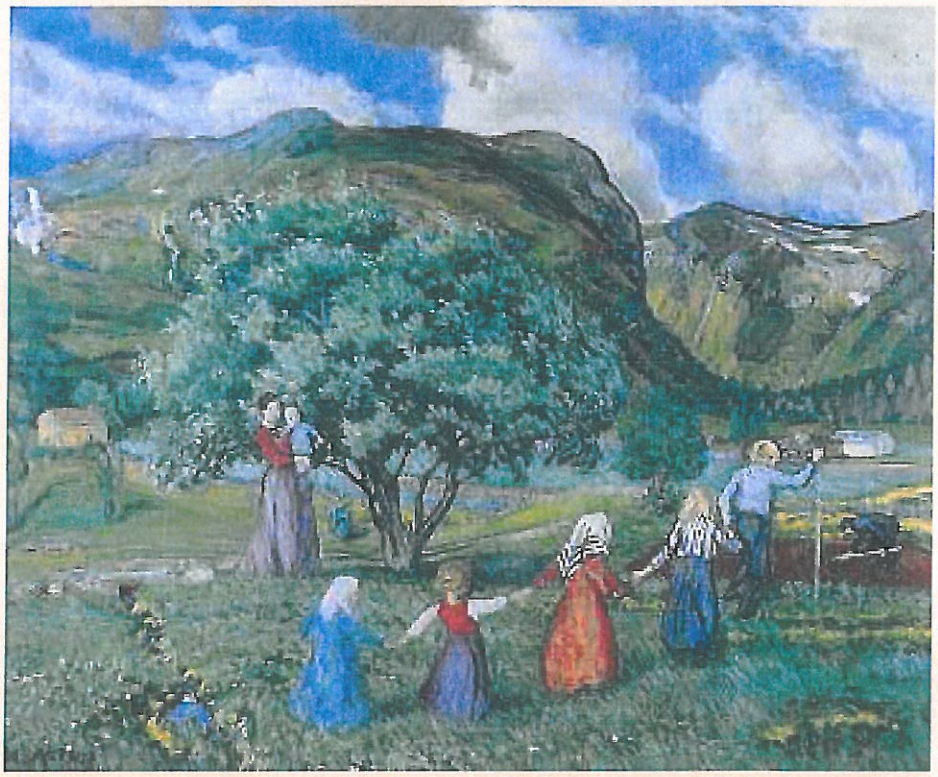
CORE CURRICULUM

FOR PRIMARY, SECONDARY AND ADULT EDUCATION IN NORWAY



THE ROYAL MINISTRY OF EDUCATION,
RESEARCH AND CHURCH AFFAIRS

PRIMARY AND LOWER SECONDARY EDUCATION ACT

§ 1 PRINCIPAL AIMS

Primary and lower secondary education shall, with the understanding of and in cooperation with the home, assist in providing pupils with a Christian and ethical upbringing, develop their mental and physical abilities, and give them a broad general education so that they can become useful and independent persons in their private lives and in society.

Schools shall promote intellectual freedom and tolerance, and emphasize the establishment of cooperative climate between teachers and pupils and between school and home.

UPPER SECONDARY EDUCATION ACT

§ 2 PRINCIPAL AIMS

The purpose of upper secondary education is to develop the skills, understanding and responsibility that prepare pupils for life at work and in society, to provide a foundation for further education, and to assist them in their personal development.

Upper secondary education shall contribute to increased awareness and understanding of basic Christian and humanist values, our national cultural heritage, democratic ideals and scientific thought and method.

Upper secondary education shall promote human equality and equal rights, intellectual freedom and tolerance, ecological understanding and international co-responsibility.

VOCATIONAL TRAINING ACT

§ 1 PRINCIPAL AIMS

The Act aims to develop competence, understanding and responsibility in relation to craft, profession and society; to provide a basis for further education and to assist apprentices in their personal development.

Vocational training shall contribute to increased awareness and understanding of basic Christian and humanist values, our national cultural heritage, democratic ideals and scientific thought and method.

Vocational training shall promote human equality and equal rights, intellectual freedom and tolerance, ecological understanding and international co-responsibility.

§ 12.2

The apprentice is under an obligation to participate actively to achieve the objects of the training and contribute to establishing a favourable working climate and a spirit of cooperation.

ADULT EDUCATION ACT

§ 1 PRINCIPAL AIMS

The aim of adult education is to help the individual to lead a more meaningful life. This Act shall contribute to providing adult persons with equal access to the knowledge, insight and skills which enhance the individual's sense of values and personal development and widen the individual's scope for independent action and for cooperation at work and in society.

FOLK HIGH SCHOOLS ACT

§ 2 PRINCIPAL AIMS

Folk high schools shall, in keeping with their traditions, promote general education for different age groups and educational levels. Within this framework, the governing body of the school determines its basic values and aims.

Foreword

During the last two or three generations, great changes have taken place in the living conditions of the young. Both parents spend more of their time outside the home at their place of work, while their children's links to the world of work and the learning that goes on there have waned. The impact of international mass media has grown strongly over the last decade, and schools have become increasingly multicultural.

Schools themselves are subject to extensive reforms, such as the introduction of a national program for after-school activities, lowering the school starting age to six years, three-year upper secondary education for all and a pedagogically more coherent educational system.

Both the changes in society and the structural changes in education make it necessary to re-examine the guidelines governing the purpose and content of education. The aims as stated in the Acts governing education must be carefully re-read and their interpretation reviewed.

When large-scale reforms are being introduced in primary, secondary and higher education simultaneously, as they are now, it seems natural and fitting to provide a common formulation of the Common Core of the curriculum, with a view to emphasizing how the stages of education are linked together, including adult education. It is the result of such work that is presented here.

Prior to the revision, the Ministry of Education appointed a number of working parties: one for primary and lower secondary education, one for upper secondary education, and one to examine the common core in a broader, social perspective. The Ministry then processed the proposals and drafts from these groups.

The starting point for the overall work has been the aims stated in the Acts governing the Norwegian educational system, reproduced on the facing page. The main themes found in these paragraphs were then extracted. It turns out that they fall into six groups, as illustrated on the next page. It is these main themes that have been analysed and amplified in the main body of this document. The central ideas in former guidelines for primary and secondary education in Norway have also been examined and employed in this exposition. The work moreover builds on principles set out in central policy documents debated and given parliamentary approval during the last few years.

A draft of for this document was widely circulated and discussed and the text subsequently revised before being presented in its final form to Parliament *(Storting)*. The Storting gave its full consent without further alteration to the text. It therefore constitutes a binding foundation for the development of separate curricula and subject syllabuses at the different levels of education - the common core for the Norwegian educational system.

Gudmund Hernes
Minister

STATEMENTS OF AIMS AS FORMULATED IN THE EDUCATION ACTS

Listed below are a number of key formulations from the Acts governing education in Norway, grouped thematically. The common core of the curriculum expands on these themes.

Reference to the Acts is as follows:

- Primary and Lower Secondary Education Act
- •• Upper Secondary Education Act
- ••• Vocational Training Act
- •••• Adult Education Act
- ••••• Folk High Schools Act

THE ESSENCE OF THE STATEMENTS OF AIMS

MORAL OUTLOOK

- Christian and ethical upbringing
- •• Contribute to increased awareness and understanding of fundamental Christian values
- ••• Responsibility
- •••• Promote a sense of values

- Intellectual freedom and tolerance
- •• Human equality and equal rights
- •• Intellectual freedom and tolerance

CREATIVE ABILITIES

- Develop mental and physical abilities
- •• Assist pupils in their personal development
- •• Scientific thought and method
- •••• Personal development

WORK

- •• Prepare for life at work and in society
- ••• Actively exploit learning opportunities at work
- ••• Competence, understanding and responsibility in relation to craft, profession and society
- •••• Equal access to knowledge, insight and skills

GENERAL EDUCATION

- Give a broad basic knowledge so that pupils can become useful and independent in home and society
- •• National heritage, prepare for life in society
- •• Provide a basis for further education
- •••• Strengthen basis for independent action ... at work and in society
- •••• Help the individual to lead a more meaningful life
- ••••• Promote general education for different age groups and educational levels

COOPERATION

- With the understanding of and in cooperation with the home ... establish good modes of cooperation between teachers and pupils, and between school and home
- •• Democratic ideals
- •• International co-responsibility
- ••• Favorable working climate and spirit of cooperation
- •••• Strengthen .. cooperation at work and in society

NATURAL ENVIRONMENT

- •• Ecological understanding

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Aims in this connection are

a) something to work towards
b) something one can know whether one approaches or not.

Introduction

The aim of education is to furnish children, young people and adults with the tools they need to face the tasks of life and surmount its challenges together with others. Education shall provide learners with the capability to take charge of themselves and their lives, as well as with the vigor and will to stand by others.

Education shall qualify people for productive participation in today's labor force, and supply the basis for later shifts to occupations as yet not envisaged. It should develop the skills needed for specialized tasks, and provide a general level of competence broad enough for re-specialization later in life. Education must ensure both admission to present-day working and community life, and the versatility to meet the vicissitudes of life and the demands of an unknown future. Hence it must impart attitudes and learning to last a lifetime, and build the foundation for the new skills required in a rapidly changing society. It must teach the young to look ahead and train their ability to make sound choices. It must accustom them to taking responsibility - to assess the effects of their actions on others and evaluate them in terms
of ethical principles.

The educational system must be designed to offer adults the same opportunities as today's youth. A basic education no longer suffices for a lifetime of work. Re-adjustment with its attendant renewal of skills will be a regular feature of life. The learning adults have gained in school, must therefore be maintained and renewed. The educational system must be open, so that it is possible to return repeatedly for re-education from all occupations and without formal barriers. Society is responsible for ensuring that equality of educational opportunity is a reality and that inequalities arc not allowed to develop.

Education must spur students to diligence and to close collaboration in the pursuit of common goals. In must foster miens and manners which facilitate the achievement of the results they aim at. It must promote democracy, national identity and international awareness. It shall further solidarity with other peoples and with mankind's common living environment, so that our country can remain a creative member of the global community.

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Education must make room for the learners' creative urge and at the same time awake their pleasure in the accomplishments of others. Through music and words, pictures and patterns, they must be stimulated to develop their imagination and appreciation of art.

The point of departure for schooling is the personal aptitude, social background, and local origin of the pupils themselves. Education must be adapted to the needs of the individual. Greater equality of results can be achieved by differences in the efforts directed towards each individual learner. Breadth of skills is realized by stimulating their unique interests and abilities. Individual distinctiveness generates social diversity - equal ability to participate enriches society.

In short, the aim of education is to expand the individual's capacity to perceive and to participate, to experience, to empathize and to excel.

If education is to further these aims, a more careful examination of basic values, view of man and nurturing tasks is necessary.

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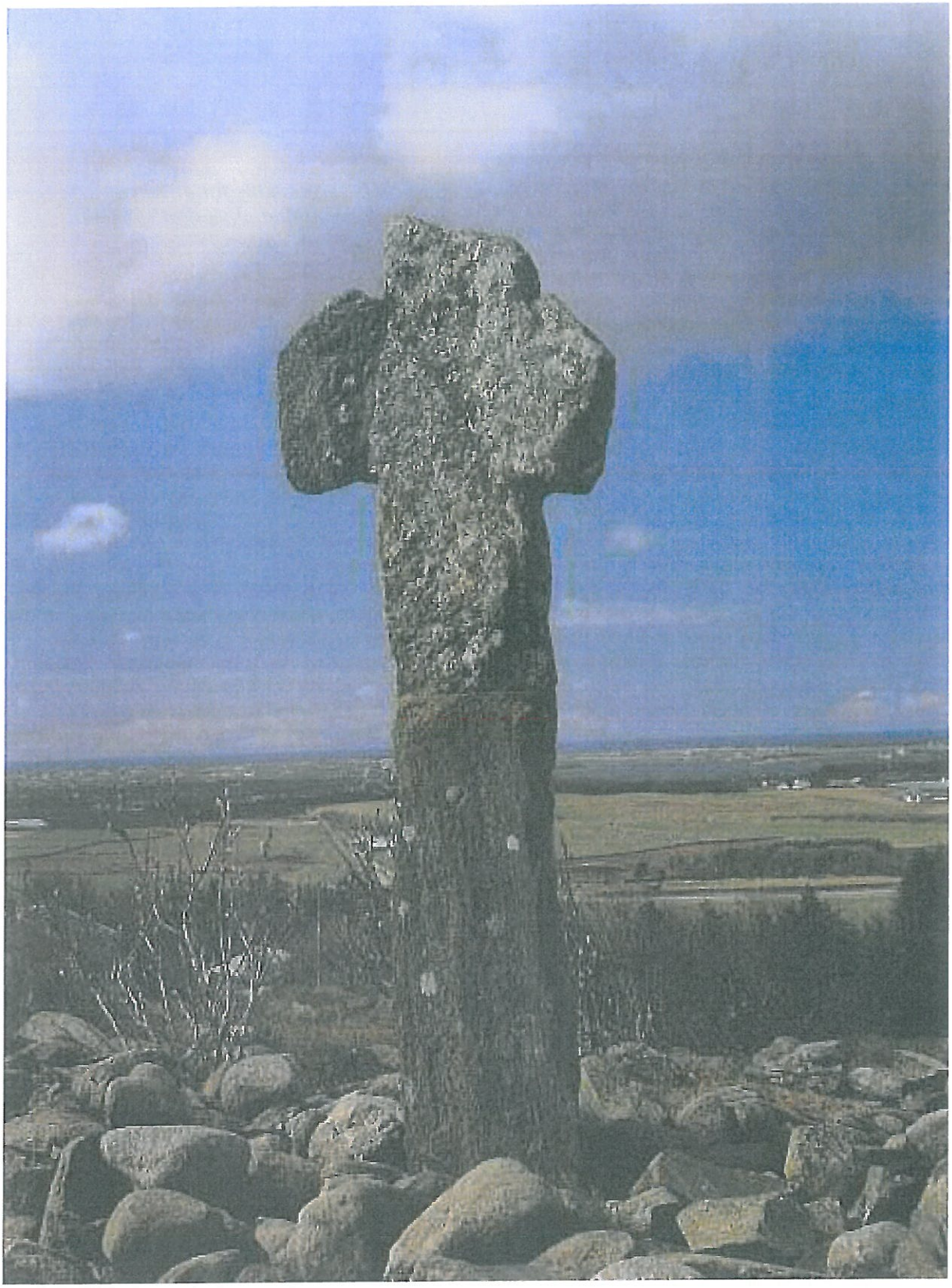
* In this document the concept "learner" comprises pupil apprentice or student.



The spiritual human being

Education shall be based on fundamental Christian and humanistic values. It should uphold and renew our cultural heritage to provide perspective and guidance for the future.

Veneration for human equality and the dignity of man is an inducement to persistently safeguard and expand upon the freedoms of faith, thought, speech and action without discrimination by gender, endowment, race, religion, nationality or position. This fundamental belief is a constant source of change to enhance the human condition

Education must be based on the view that all persons are created equal and that human dignity is inviolable. It should confirm the belief that everyone is unique, that each can nourish his own growth and that individual distinctions enrich and enliven our world.

Christian and Humanistic Values

Christian and humanistic values both demand and foster tolerance, providing room for other cultures and customs. They buttress the rule of law and the democratic state as the framework for equal political participation and debate. They emphasize charity, brotherhood and hope, promote progress through criticism, reason and research; and they recognize that humans themselves are a part of nature by their bodies, their needs and their senses.

The Christian faith and tradition constitute a deep current in our history - a heritage that unites us as a people across religious persuasions. It has imprinted itself on the norms, world view, concepts and art of the people. It bonds us to other peoples in the rhythm of the week and in common holidays, but is also an abiding presence in our own national traits: in architecture and music, in style and conventions, in ideas, idioms and identity.

Our Christian and humanistic tradition places equality, human rights and rationality at the fore. Social progress is sought in reason and enlightenment, and in mans ability to create, appreciate and communicate.

Together, this interwoven tradition provides us with unwithering values both to orient our conduct and to organize our communities. They inspire selfless and creative efforts, and encourage honorable and courteous behavior.

At the same time, the young must learn that different epochs have had divergent habits and customs and that different societies have dissimilar rules for proper conduct. The young must understand that moral standards can be a source of conflict, but that they also undergo change and that new models for social relations and human interaction can be created through reflection,
criticism and dialogue.

Education should be based on the view that all persons are created equal and that human dignity is inviolable. It should confirm the belief that everyone is unique; that each can nourish his own growth and that individual distinctions enrich and enliven our world. Education should foster equality between the sexes and solidarity among groups

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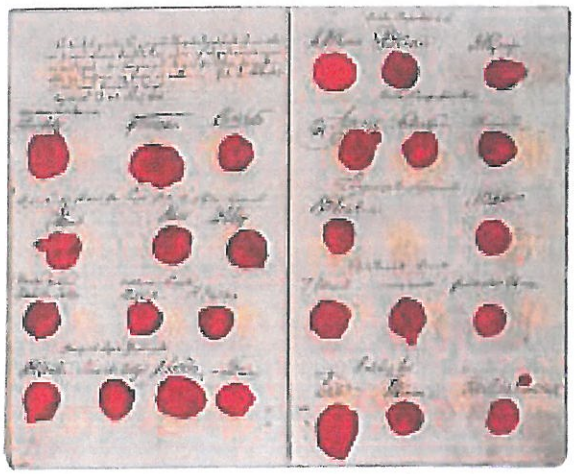
and across borders. It should portray and prove knowledge as a creative and versatile force, vigorous both for personal development and for humane social relations.

Children and adolescents must be made to understand moral claims and allow them to inform their conduct. The canons that are valid in society - professional ethics, labor norms and business practices - have a determining influence on the quality of life in any given society: whether tasks



Education should foster equality between the sexes and solidarity among groups and across borders. It should portray and prove knowledge as a creative and versatile force, vigorous both for personal development and for humane social

Education should view individuals as moral beings, accountable for their decisions and responsible for their actions; with the ability to seek what is true and to do what is right.

Education should elaborate and deepen the learners' familiarity with national and local traditions - the domestic history and distinctive features that are our contribution to cultural diversity in the world.

are performed with skill for the good of others, whether work is organized to prevent injury and promote health, whether technology is safe, whether products are up to standard or whether contracts are open and honest. Our welfare society itself is built upon a moral contract: on the one hand by everyone contributing to a system that supports and serves oneself when in need; and on the other by empowering others to develop their skills and strengthen them when they are in need.

Education should view individuals as moral beings, accountable for their decisions and responsible for their actions; with the abillity to seek what is true and to do what is right. But individuals are also capable of behaving destructively, in defiance of their conscience, contrary to norms, against better judgment, and to the detriment of themselves and others. Education must therefore authenticate society's ideals and values and enliven them so that they become a potent force in people's lives. It must provide them with reliance and probity that can carry them through the defeats, crises and conflicts which are inescapable in the vicissitudes of life. It must also implant generosity in the face of failure, so that the individual who flounders or falls short is also taken seriously, can be exonerated and begin anew.

Hence education must clarify and justify ethical prinsiples and norms. These in turn can be elucidated by Biblical similes, but also by illustrations from other religions, from history, fiction, biography, and from legends, parables, myths and fables.

Pupils must be confronted with choices that are tested against the norms on which the school and society as a whole are built. And educators as role models should lead the way by their example.

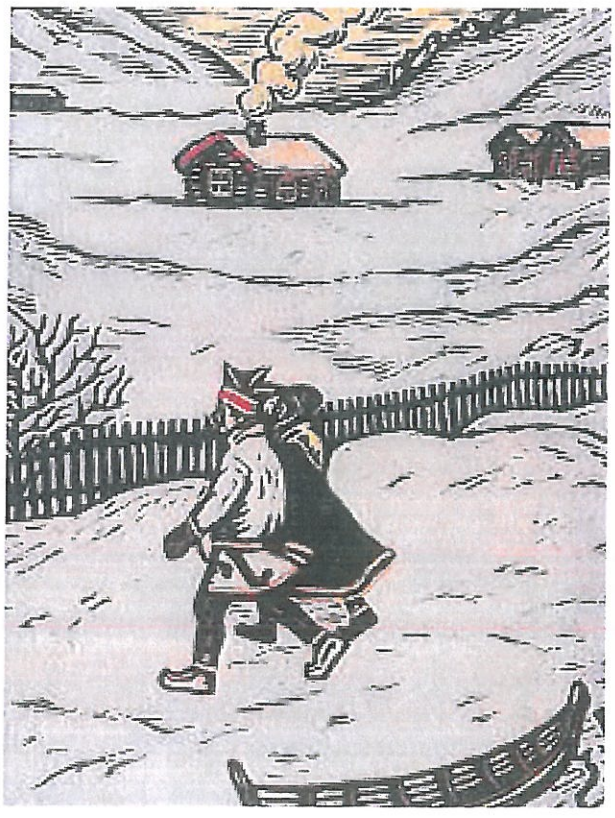
Education must convey knowledge about other cultures and take advantage of the potential for enrichment that minority groups and Norwegians with another cultural heritage represent.

There should be a close interaction between upbringing at home and the education provided by the school and within the society of which pupils are part.

Cultural Heritage and Identity

The development of individual identity occurs through becoming familiar with inherited forms of conduct, norms of behavior and modes of expression. Hence education should elaborate and deepen the learners' familiarity with national and local traditions - the domestic history and distinctive features that are our contribution to cultural diversity in the world. The Sami language and culture are a part of this common heritage which Norway and the Nordic countries have a special responsibility to safeguard. This legacy must be nourished so that it can grow in schools with Sami pupils, in order to strengthen Sami identity as well as our common knowledge of Sami culture.

Cultural history also reminds us that contact between different ways of life opens the door to unexpected combinations as well as conflicts between beliefs. A meeting between diverse cultures and traditions can generate new impulses as well as stimulate critical reflections.



Education should counteract prejudice and discrimination, and foster mutual respect and tolerance between groups with differing modes of life.

The school system embraces many pupils from groups which in our country constitute minority cultures and languages. Education must therefore convey knowledge about other cultures and take advantage of the potential for enrichment that minority groups and Norwegians with another cultural heritage represent. Knowledge of other peoples gives us the chance to test our own values and the values of others. Education should counteract prejudice and discrimination, and foster mutual respect and tolerance between groups with differing modes of life.

Education should provide training in cooperation between persons of different capacities and groups with diverse cultures. But it must also expose the conflicts that can arise in encounters between different cultures. Intellectual freedom implies not only allowance for other points of view, but also courage to take a stand, confidence to stand alone, and the strength of character to think and act according to one's own convictions. Tolerance is not the same as detachment and indifference. Education should develop resolve to assert one's rights and those of others, and to stand up against their violation.

Many people are handicapped in relation to their surroundings. Education must convey knowledge about, and foster equal worth and solidarity for those whose skills differ from those of the majority. And, not least, it should promote the appreciation that any one of us can be struck by illness or injury, by destitution, tribulations, or anguish, all of which can make us dependent on the compassion of others.

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The creative human being

What distinguishes the human species is its capacity to appreciate what its forebears have thought and felt, to utilize what they have devised and designed - and yet transcend the limits set by the past through ingenuity and resourcefulness.

Education shall foster both loyalty towards our heritage and an urge to break new ground. Hence it must provide both practical skills and insight, training of both head and hand.

Education shall impart in the learner a zest for life, the courage to tackle it, and a desire to use and extend what they learn. Children, when they begin their schooling, embark upon a great adventure which, with luck and care, can last them a lifetime. At school they must learn not to be fearful, but to meet the unknown with hope and drive, with expectation and enthusiasm. The school must develop their urge to get going and keep going. It must spur their will to persevere and develop their energy to resist loss of nerve and overcome their own inner resistance and vacillation.

Creative Abilities

The foremost aim of education is evolution. Education shall meet children, adolescents and adults on their own terms and so lead them to the borderland where they can encounter the new by opening their minds and testing their skills.

The intrinsic inquisitiveness of children is a formidable force. They are full of the desire to learn, but also of ignorance and uncertainty. They learn much by emulating older children and adults - and so become social beings. They develop their creative powers to think, speak, write, act and feel while being grafted onto the adult world and by acquiring adult skills.

For children and adolescents, the world is new and nothing in it is taken for granted. They often grope and question matters that adults accept as a matter of course, and they have a rich ability to fantasize and an unfettered imagination. Reality sets few limits to their musings. Children's boundless inquisitiveness is a model for all who wish to develop and learn. It is also a quality of childhood that the school must cherish and make use of in teaching - since children learn to a large degree from each other.

By creative talent we mean the ability to find new solutions to practical problems by untried moves and unused methods, by identifying new relationships through thinking and experimenting, by developing new standards for evaluation and collaboration, or by originating novel forms of artistic expression. Creative talents manifest themselves in new and improved machines, tools and routines, in the results of work and research, in improved criteria for appraisal and judgement, in buildings, paintings, music, dance and poetry.

Education must demonstrate how creative energy and inventiveness have constantly improved the context, content and quality of human life, and the historical conditions under which this has occurred. The greater and lesser accomplishments of the past not only inspire respect for what mankind has achieved before our time; they also show us that the future is open and that today's

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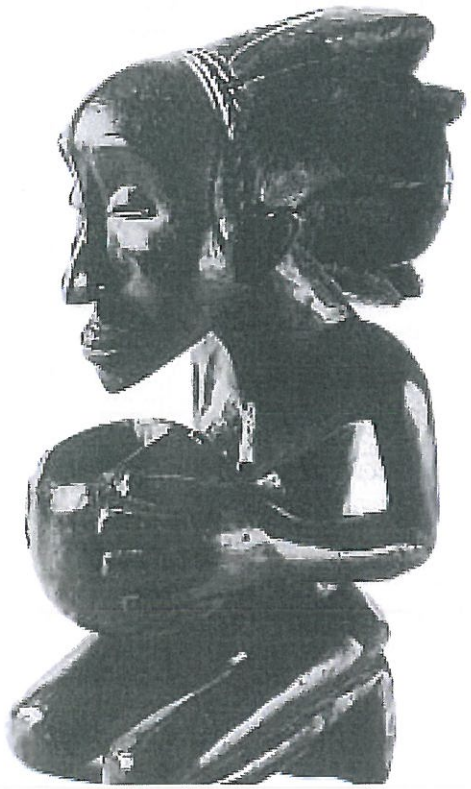
youth can shape it with their initiative and their imagination. Our cultural heritage is not synonymous with the past; it is rather a creative process, in which schooling is not the least important contributor.

Yet, creativity presupposes learning: i.e. being familiar with elements that can be combined in new ways, and commanding the skills and techniques necessary to bring into being the fruits of the imagination. Factual knowledge can kindle dreams, imagination and play - and spur the mind to discover common patterns in different fields.

Three Traditions

Education must therefore build upon and demonstrate the contributions of the past as they have evolved in mankind's great traditions of innovative work, intellectual inquiry and artistic expression. Familiarity with these three traditions proves that each generation can add new insight to the experience of previous generations; that conventional thinking can be broken and knowledge organized in new ways; and that the youth of today will bequeath creative contributions to our de-



Education must be structured in such a way that the learners themselves can take part in the further development of inherited practices and in the acquisition of new

scendants. Education must therefore be structured in such a way that the learners themselves can take part in the further development of inherited practices and in the acquisition of new knowledge.

The first tradition is linked to *practical work and learning through experience.* Many of the things that contribute to human welfare are the result not of great feats of genius, but rather of a long series of minor improvements, in all sorts of implements, tools and routines - from typewriters to sewing machines, from clocks to stoves, from building methods to working techniques. Society's progress is not only dependent on extraordinary contributions from a gifted few, but on countless contributions over long periods of time by a large number of ordinary people. By confronting again and again the same problems, they have gradually developed an experienced hand and proven practice for handling tools and materials. To accomplish tasks better, people have, step by step and little by little, improved technology, tools and machines.

Education must convey how living standards have continually been improved by trial and error, groping and gauging in generations of everyday practical endeavors.

This also applies to social innovations: constitutional forms of government, collective arrangements such as in the case of unions, or legislation on environmental protection. Knowledge about this part of our cultural heritage and history provides us with both trust in tradition and readiness for change.

In most enterprises, education included, this type of experience has partially evolved into tacit knowledge lodged in the hands and mediated through use. It is important to bring these skills to our conscious attention and to name them and translate them into words, so that they do not become an alibi for poor workmanship, but become rather a subject of reflection and discussion.

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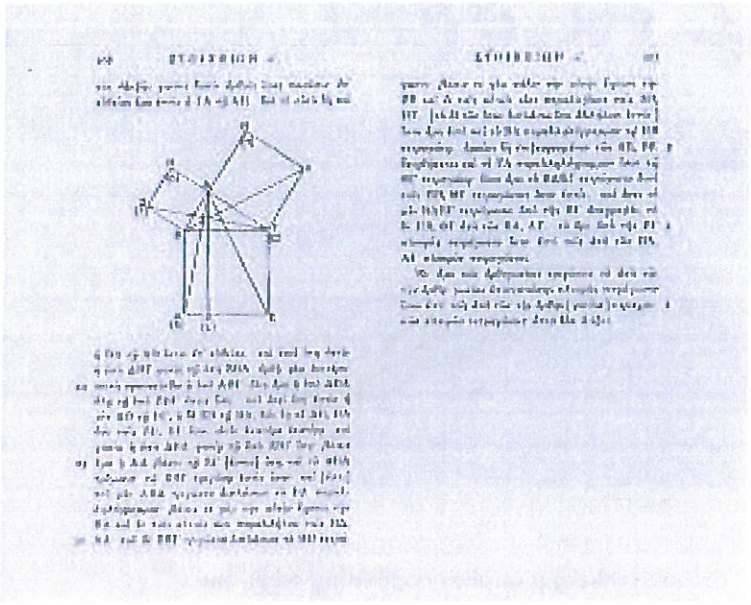

Learners meet the second tradition in subjects where new knowledge is won through *theoretical development,* tested by logic and facts, experience, evidence and research. It is presented in the study of languages, mathematics, social and natural sciences.

Education in this second tradition entails training in thinking - in making conjectures, examining them conceptually, drawing inferences, and reaching verdicts by reasoning, observation and experiment. Its counterpart is practice in expressing oneself concisely - in argument, disputation and demonstration.

The third is our *cultural tradition,* mediated by body and mind, embedded in arts and crafts, in language and literature, in theatre, song, music, dance and athletics. This tradition unites empathic ability and expressive force.

Pupils must develop an appreciation for beauty both in meeting artistic expression and by exploring and unfolding their own creative powers. All must have the opportunity to experience the toil it costs and the joy it brings to give form to feelings, expression to thoughts, and exertion to the body. It confers tangs of one's talents, where everyone can find something they can master and so surprise even themselves.

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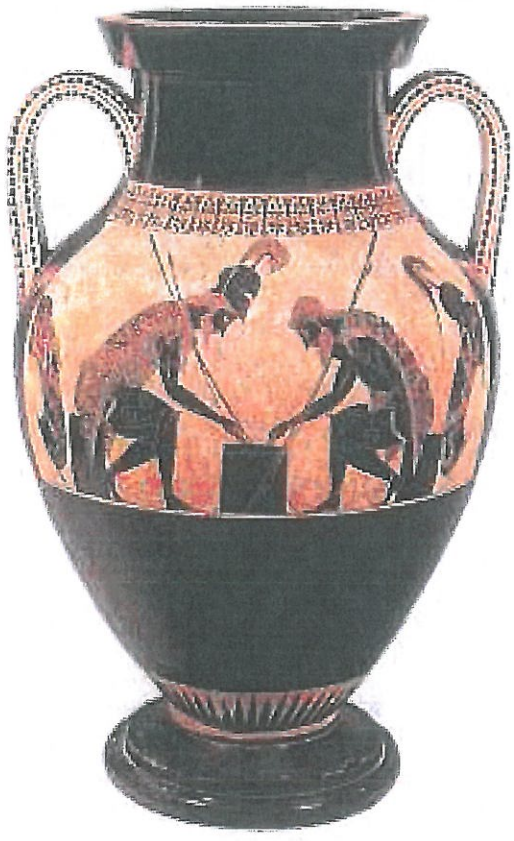
Pupils must develop an appreciation for beauty both in meeting artistic expression and by exploring and unfolding their own creative powers.

Practicing artistic as well as athletic skills engenders appreciation of discipline, valuation of the achievements of others and a sense on one's own worth. Mastery through effort, nurturing sensitivity and the facility to express sentiments, can be achieved through work and play, in gaiety and gravity.

At the same time, figment and fantasy, wonder and caprice, unlock lifelike adventure worlds east of the Sun and west of the Moon - and in so doing make the real world more multifarious and fantastic for everyone. Even moore, a confrontation with creative art can wrench us out of our habitual modes of thought, challenge our opinions, and provide experiences that spur us to re-examine prevailing conceptions and break with conventional wisdom and customary modes.

A Critical Sense of Judgement

Critical judgement is required in all areas of life, and it too is activated by these traditions. A sense of discernment is developed by testing expression



Critical judgement in different areas of life should be developed by testing expression and performance against specific standards.

and performance against specific standards. Assessing style in any sport requires a trained eye; appraising the quality of a piece of work requires the professional insight gained from repeated experience. Competent evaluation - the ability to determine character, quality or utility - presupposes a mature sense of judgement reaped from repeated practice in comparing and questioning well-established standards. Time to appreciate and absorb a wide range of artistic expressions and displays of good workmanship and design is required for impressions to solidify into coherent and independent models of excellence.

Common to the three traditions is that they fuse the human gifts of creating and experiencing. They show how pursuits in different areas have produced works of lasting value. They highlight the rich heritage from the past in our custody, and they display mankind's scope for continuing progress.

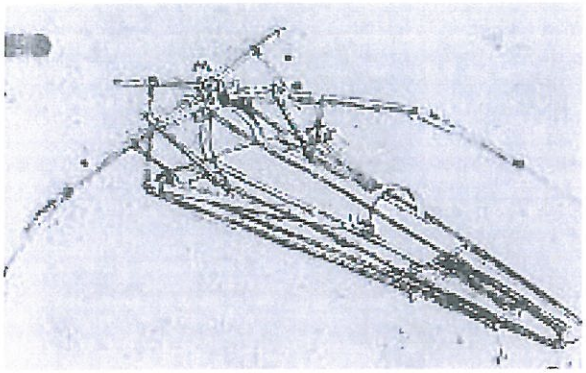
In many trades and professions all three traditions interlace. A carpenter, for instance, must be dexterous and deft, know the stress and strain a beam can bear and possess the criteria for a job well done and a feat fair and fine.

A deep immersion in all three traditions furthers the harmonious development of the personality. Education must therefore train the eye and sharpen the senses for the experiential aspect of every subject: That nature has its laws, but also its beauty and grandeur; that artists can try to capture and portray it; that good ideas can evoke strong feelings; that insights can be given lovely forms, be it in the architecture of a formula or in the weave of words.

Scientific Method and the Active Pupil

Education shall not only transmit learning; it shall also provide learners with the ability to acquire and attain new knowledge themselves.

Education must train the eye and sharpen the senses for the experiential aspect of every subject.



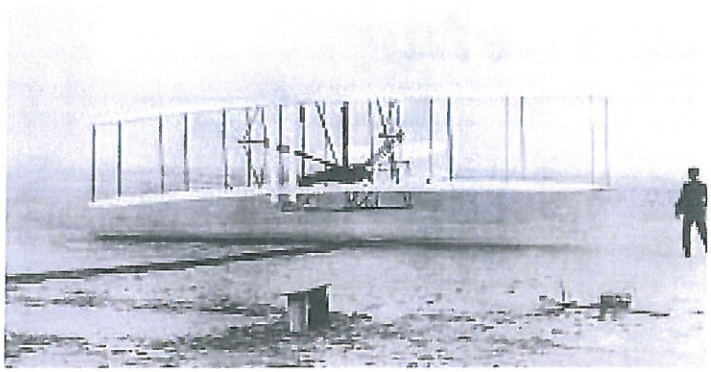
Creative thinking implies combining what one knows in order to solve new and perhaps unexpected practical tasks. Critical thinking implies checking whether the assumptions and the links in a chain of thought hold. The aim of education is to train pupils in both synthesis and analysis - to develop both imagination and scepticism so that experience can be translated into insight.

Scientific method develops both the creative and critical senses, and is within everyone's reach. Children and adolescents are by nature curious, imaginative and keen to explore.

In scientific research, prevailing conceptions guide the quest for facts and relationships. But research is, at the same time, a method for revising preconceived notions, accepted theories and current concepts - and for developing new ones. Scientific methodology consists of procedures designed to avoid being deceived - either by oneself or by others.

Skill in scientific thinking and working methods demands the training of three faculties:

- The ability to wonder and to pose new questions;
- The ability to invent possible explanations for phenomena one has observed;
- The ability to test one's explanations by examination of sources, experimentation, or observation.



Education should provide, through examples and practice, rehearsals of these three stages of research, which correspond to the innate inquisitiveness of the young: to make observations, to offer explanations and to examine their validity - to ponder, to surmise and to probe.

Down through the ages humans have contributed to a common body of knowledge deposited in different disciplines. This body of knowledge is shaped to organize, comprehend and master a multifaceted and complex reality. Understanding and theories are evolved in an interplay between individuals, society, and nature, where ideas and approaches are tested against complex surroundings. Our tools, both intellectual and technical, have in this manner been steadily improved and made more powerful. And so they will be improved upon by new research in the future.

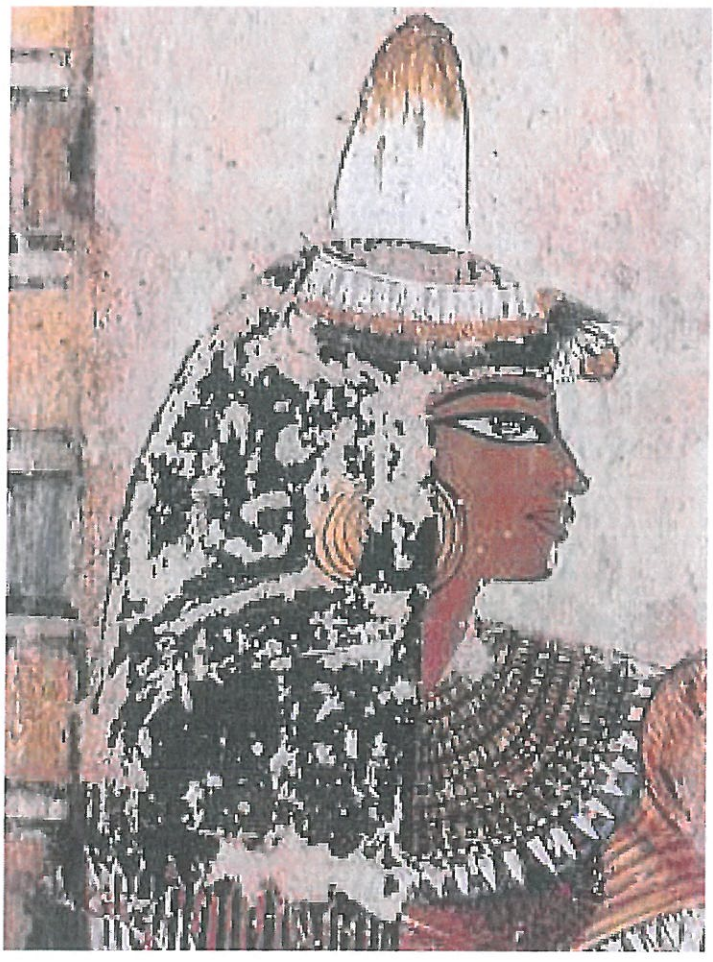
It is thus paramount that learners share in this cultural heritage through education. At the same time it is important that they do not perceive science and its theories as eternal and absolute truths. Education must find that difficult balance between respect for established knowledge and the critical attitude that is necessary for developing new learning and for organizing information in new ways. Education must provide solid learning. But it must also instil an awareness of the

Education must include practice in scientific thinking and working methods by training the ability to wonder and to pose new questions; the ability to invent possible explanations for phenomena one has observed; and the ability to test one's explanations by examination of sources, experimentation, or observation.

Education shall not only transmit learning; it shall also provide learners with the ability to acquire and attain new knowledge

limitations of the current body of knowledge, and a realization that predominant doctrines can block fresh insight.

Teaching must also illuminate the ethical issues raised by science itself, and the moral judgments which are required when new knowledge engenders new choices. The human thinking that transcends the limits for what is possible, must be met with the humanistic tradition which sets the limits for what is permissible.



The working human being

Work is not merely a means of earning a livelihood. It is intrinsic to the human personality to test, express and extend skills through work. Education shall provide pupils and apprentices with awareness of the variety and scope of the world of work and bestow the knowledge and skills necessary for active participation in it.

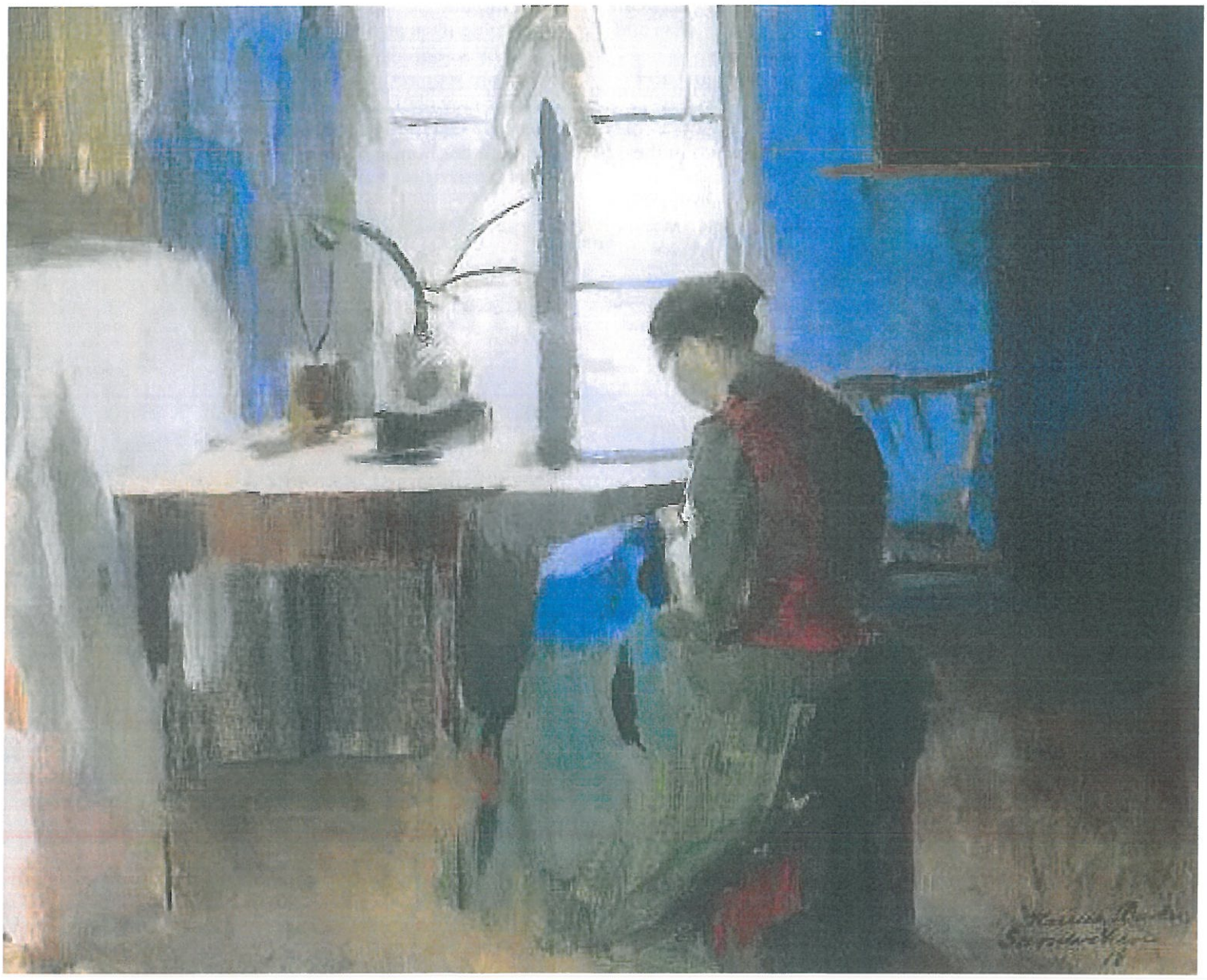
Education shall provide learners with awareness of the variety and scope of the world of work and bestow the knowledge and skills necessary for active participation in it.

Some occupations demand that the skills employed are toned with human compassion and concern; in others, the ability to operate technical implements is essential.

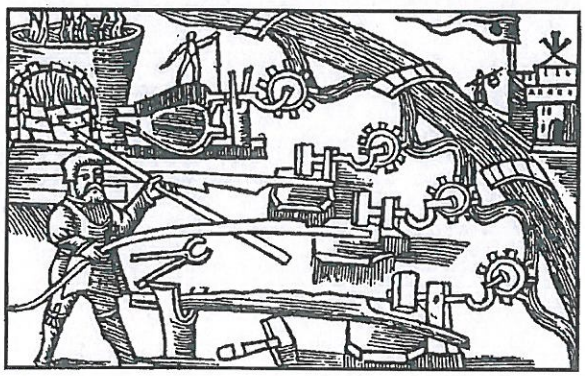
Technology and Culture

Technology is nothing more than the means humans have devised for achieving their goals, easing their work and cooperating better. Technology provides aids in making and doing things: tilling the soil, weaving cloth, building houses, curing disease, or travelling by land, air or sea.

Technology and the research and development behind it are both civilizing and inspiring. It is civilizing by making it possible for us to live with less drudgery and disease, and because it releases time from chores and the struggle for subsistence



Familiarity with our technological heritage - the easing of life and the improvement of welfare it has furnished, but also the dangers technological innovations have introduced - is an essential element of a general education



to leisure and culture. It is inspiring by being a creative expression of the interplay between head and hand to meet needs and yearnings. Technology is often a manifestation of compassion, as with the desire to nourish or heal, to prolong life or ease living, to care for children or elevate the quality of life.

The history of technology is the history of inventiveness - of how raw materials can be transformed and used to make new things: flint or matches, breeding for improved livestock, railroads for better transportation, herbs for alleviating pain, clocks and calendars, dynamos and dynamite, wheel and steel. Many of these discoveries were made by everyday men and women: farmers, mechanics , midwives, craftsmen.

Shifts in basic technology mark the great epochs in human history; from the Stone Age to the Atomic Age, from the Agricultural Revolution to the Industrial Revolution. Technological change embraces all forms of human venture: building, fishing, fabrication, transportation, nutrition, printing, film, and music. Technology, by and large, has replaced chance and coincidence with calculability and certainty.

Thus technology has had a profound impact on human relations: on the division of labor and the structure of power, on class differences and on social conflict. The sum total of the repercussions of technological development has been to make life less dependent on nature and more dependent on society.

Yet technological development has had a double-edged effect because humans have been at cross-purposes. It has eased life by opening the way for new constructive enterprise - but has also increased the capacity for destruction and devastation. New weapons have expanded the range and scope of human conflict. Our society's wellbeing and entire existence are based on high technology. But the same applied science and technology can be used for destructive purposes: to produce weapons of mass-destruction, to exploit human beings and despoil the soil. When technology is not controlled or its use misguided, it can deplete the earth and destroy the basis for existence for future generations.

The growth of new technology advances implements, industries, social formations and cultural life. To become familiar with our technological heritage is an essential element of a general education.

Good learning depends on the individual's drive to take on a job and will to see it through. It is well documented that a learner's achievement is plainly influenced by the working habits acquired during early years of schooling. Good working habits developed at school have benefits well beyond the range of education.

Learning and Work Habits

Good learning depends on the individual's drive to take on a job and will to see it through. It is well documented that a pupil's achievement is plainly

In addition to the intrinsic value for the pupil, education aims at preparing the young to take on the tasks of working life and social life.

influenced by the working habits acquired during early years of schooling. Good working habits developed at school have benefits well beyond the range of education. In addition to the instrinsic value for the learner, education aims at preparing the young to take on the tasks of both working and social life. The school must therefore stay in close interchange with the surrounding community and gradually expose learners to it and prepare them for active engagement in professional, cultural and political life.

Pupils build up their knowledge, generate their skills and evolve their attitudes largely by themselves. This process can be stimulated and spurred or curbed and blocked, by others. Successful learning demands twosided motivation: on the part of the pupil and on the part of the teacher: Good teaching will give pupils evidence of succeeding in their work, faith in their own abilities, and the heart to take responsibility for their own learning and their own lives.

Teaching and Personal Initiative

Learning occurs in all of life's situations, and in particular when the individual recognizes the need to develop new knowledge, skills and perspectives.

Schools are established for purposeful and systematic learning. In school, pupils are taught by a staff who have this as their profession and are trained expressly for this job. Yet teaching and learning are not one and the same thing. Learning is what occurs within the pupil. Teaching is something done by another. Good teaching gets learning started - but it is consummated by the learner's own efforts. A good teacher stimulates this process.

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Hence education must encourage making effort and taking pains. It must nourish perseverance by having the young see and sense that exertion and experience, knowledge and skill enhance their proficiency and that heightened mastery is valued. Good teaching will give pupils evidence of succeeding in their work, faith in their own abilities, and the heart to take responsibility for their own learning and their own lives.

Education must be tied to the pupil's own observations and experiences. It should be arranged so that the pupils gradually acquire a practical record of experiences that knowledge and skills are something they share in shaping.

Teaching must be seasoned so that the young can savor the joy of discovery to be found in new skills, in practical work, research, or art.

From the Familiar to the Unknown

Learning occurs when new information is interpreted from the known - the concepts one already comprehends determine what one can fathom and grasp. Knowledge, skills and attitudes develop in the interplay between old notions and new impressions.

Education must therefore be tied to the pupil's own observations and experiences. The ability to take action, to seek new experiences and to interpret them, must depart from the conceptual world with which pupils enter school. This includes both experiences gained from the community, their local dialect, and the common impulses gained from the mass media. Teaching must be planned with careful consideration for the interaction between concrete tasks, factual know-
ledge, and conceptual understanding. Not least, it must be conducted so that the pupils gradually acquire a practical record of experiences that knowledge and skills are something they share in shaping.

Adapted Teaching

The school shall have room for everybody and teachers must therefore have an eye for each individual learner. The mode of teaching must not only be adapted to subject and content, but also to age and maturity, the individual learner and the mixed abilities of the entire class. The pedagogical design must be pliable enough to permit the teacher to meet the pupils' differences in ability and rhythm of development with kindness and ease. Rules of conduct alone are not sufficient to transmit care and consideration. The teacher must make use of the variations in pupils' aptitudes, the diversity in the classroom, as resources for all-round development as well as the development of all. A good school and a good class should provide enough space and enough challenge for everyone to sharpen their wits and grow. But it must show particular concern for those who get stuck, struggle stubbornly and can lose courage. Solidarity must embrace those who face individual difficulties and those who can slip and slide when changing class or school.

Teaching must be seasoned so that the young can savor the joy of discovery to be found in new skills, in practical work, research, or art. Learning and experience must be welded together. The learning environment must be both humane and loyal towards children's inquisitiveness. Learning to read and write, to do math and draw, experiment, play and analyse, should release a creative craving, not restrain it.

All-round Development

Human being grow and mature by acting and making. Education must allow each individual to learn by observing the practical consequences of his or her choices. Concrete tasks serve both as a preparation for the duties of daily life and provide experiences for reflection. Practical work and training must therefore be an important and integral part of education.

The school shall provide pupils with a broad preparation for life - for cooperation and harmony in the home and during leisure, at work and in the community. The young must gradually shoulder more responsibility for the planning and achievement of their own education - and they must take responsibility for their own conduct and behaviour. Schools must therefore, in all they do, look to the

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next stage ahead and fit pupils to play a fuller and fuller part in the adult world, all the while keeping in mind the potential of each individual.

Recent generations have, however, seen systematic schooling expand to occupy an ever greater part of the lives of the young. School can therefore no longer be regarded as a waystation in life. It is in fact a microcosm which must embrace the main features of life outside. School is a bearer of a culture of knowledge and a culture of cooperation which must be open to the surrounding world, yet at the same time counterbalance the negative impacts of the environment. It must safeguard the worth and virtue of childhood and adolescence, but also serve as an alternative to peer culture.

The Role of the Teacher and Educator

The teacher's command of his or her field is vital when the experiences of the young are to be converted into insight. The good teacher is master of the subject - his or her section of our common cultural heritage.

Children or adolescents cannot be expected to reach such subject knowledge on their own. Children's conceptions of circumstances and relationships can be deficient and erroneous. A teacher must know a subject well in order to teach it with skill and authority, and to be able to sate children's thirst for knowledge and zest for action.

Teachers must know the scope and limits of knowledge - not least to keep abreast and grow in competence as new insight is gained through professional development or research. For teachers to function well, they must have the opportunity for personal development through in-service training and further education.

To explain something new implies mooring it to something familiar. This is accomplished by the teacher using expressions, images, analogies, metaphors and examples which convey meaning to the pupil. New perceptions must build on what is already well-founded - that which the pupil already knows, can do or believes beforehand. A good portion of this the pupils have in

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common, from our broad cultural heritage which provides a sounding board for communication, dialogue and learning.

Yet even in a common culture there are wide variations between individuals, due to social background, sex, and local origin. Hence that which is a striking example or a telling image for one pupil, can be wholly devoid of meaning for another. The cultural baggage that learners carry with them, from the home, local community, or earlier schooling, determines which explanations and examples have meaning. Pupils from other cultures do not share the common Norwegian heritage. Good teachers therefore use many and varied images to make a point or demonstrate a common pattern, and draw material and illustrations from the diverse experiences of different pupils. Further, a good school places emphasis on broadening the pupils' common store of associations because it aids simple and succinct communication.

Professional competence is necessary for a teacher to feel secure and not uncertain or apprehensive when learners ask questions and demand answers. Knowledge and experience empower a teacher to put the subject in perspective and to meet pupils and colleagues alike with an open mind and an open heart. The ability to give explanations and examples tailored to each individual's background and circumstances demands a systematic and broad knowledge of a subject.

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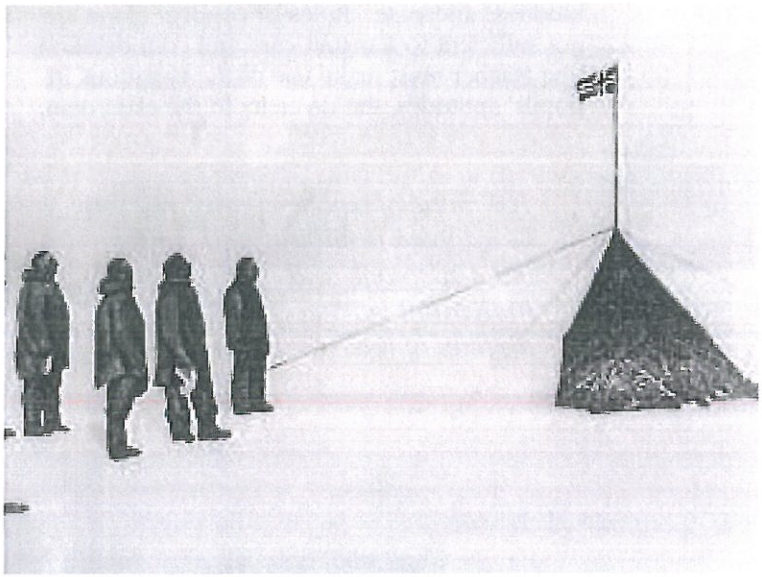

Teaching Ability and Active Learning

Subject proficiency is not enough to make a good teacher; enthusiasm and communicative ability are also needed. Good teachers have a sure grasp of their material, and know how it should be conveyed to kindle curiosity, ignite interest and win respect for the subject.

Learners come to school eager to learn and wanting to be taken seriously, to be esteemed for being who they are, with a need to be uplifted and challenged, with a desire to test their powers and stretch their muscles. Good teaching embraces these traits - and addresses the fact that different pupils have different needs, abilities and aspirations in different fields and phases. A teacher's qualifications include knowledge about normal and deviant development. A teacher must be familiar with both general and specific difficulties pupils can run up against, not only with respect to learning, but also socially and emotionally when pupils waver or parents falter. All human beings have worth, also when they are making little progress, failing or floundering.

The pupils' urge to test themselves must be met by teachers who take joy in narration and pleasure in presentation so that they sustain in their pupils the drive to press on. Teachers must show the way to skills that are reachable and to material that is manageable. And not least, they must be role models for their pupils: by their dedication and their enthusiasm they must inspire their pupils to follow suit and dare to be challenged.

Teachers determine by their manner whether pupils' interest is maintained, whether learners

Good teachers have a sure grasp of their material, and know how it should be conveyed to kindle curiosity, ignite interest and win respect for the subject. Good teachers have a good grasp of their subject. Teachers determine by their manner whether learners' interest is maintained, whether learners feel competent, and whether learners'

feel competent, and whether learners' enthusiasm abides. The most important precondition here is a respect for the pupils' integrity, a sensitivity for their uniqueness and an urge to assist pupils in exploiting their potential and enticing them into their own borderland.

An authoritarian, sarcastic and negative teacher can quash interest in a subject and harm the pupil's self-image. A good teacher can inspire by encouragement, by providing experience of increasing mastery, and by giving a positive response to their progress. A sense of assurance is an essential prerequisite for learning.

The most important of all pedagogical tasks is to convey to children and the young that they are continuously making headway so that they gain trust in their own abilities. A good teacher also amplifies their ability to persevere - to withstand strain, to overcome obstacles, and not to give up and back out if they do not succeed at once. A teacher is, therefore, initiator, guide, interlocutor and director.

The most important tool teachers have is themselves. For this reason they must dare to acknowledge their own personality and character, and to stand forth as robust and mature adults in relation to young people who are in a process of emotional and social development. Because teachers are among the adult persons children interact most closely with, they must venture to project themselves clearly, alert and assured in relation to the knowledge, skills and values to be transmitted. Teachers must be so close to their pupils that the latter can relate to, rely on and speak openly to them. They must be able to inspire and inform, but also to orchestrate, provide structure and direction for the young who are groping and searching.

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The teacher's role changes in step with the pupils' stage of development. It is especially challenging to build upon the varied experience adult students have gained outside school, at work, at home, and in the community.

Teachers are the leaders of the pupils' community of work. Progress thus depends not only on how teachers function in relation to each pupil, but also on how they make each of the pupils relate to the others. In a good working team, the members enhance the quality of each other's work.

For equality of educational opportunity to be realized, it is not sufficient for everyone to receive equal schooling without sexual, functional, geographical, religious, class-based or ethnic discrimination. The right to equal schooling must also be independent of the school class to which the individual learner is

Active educators require effective teaching tools. Textbooks and other teaching aids are essential to the quality of education. They must therefore be designed and used in accordance with the principles of this national core curriculum.

Learning as Teamwork

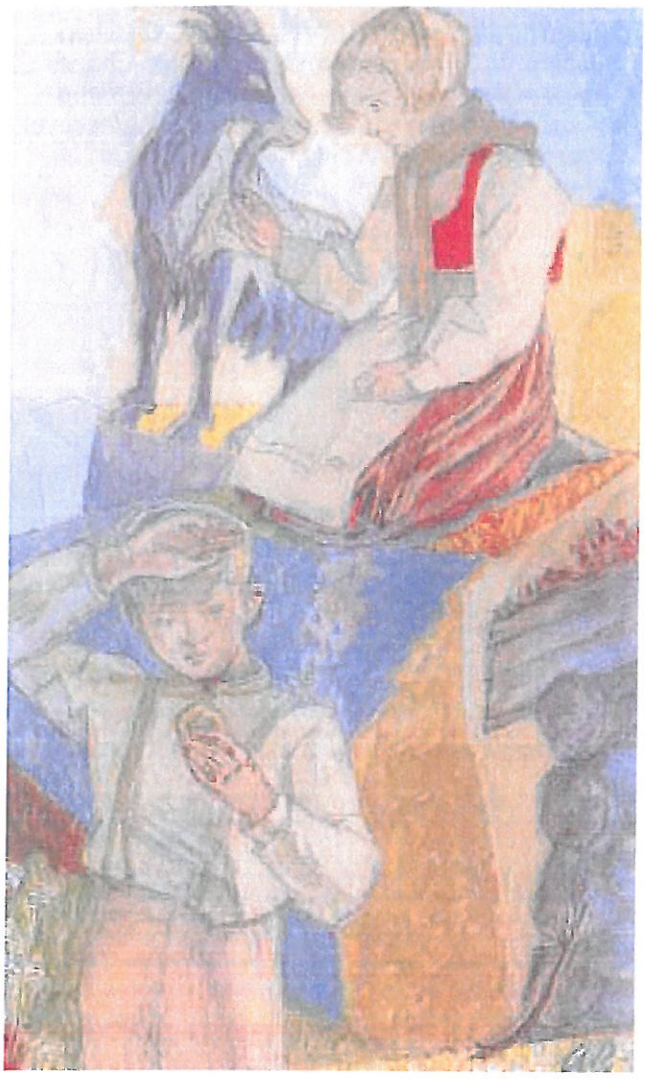
Contemporary teaching and learning is teamwork. Specialized instructors share the responsibility for teaching the individual learner, groups and whole classes. They have obligations towards both the school and towards the entire course of schooling where their contribution is a necessary part of the whole. Other professional groups also play an increasingly important role in the education of young people, through supervised after-school activities, youth clubs, sport and other organized endeavors.

Teachers are the leaders of the pupils' community of work. In the classroom and workshop there must be enough discipline and order for these to function as places of serious work and study. And limits must be firm enough for the boisterous and whimsical also to get a chance to concentrate.

A working environment functions well when everyone appreciates that they shape the conditions for each other and hence must show each other consideration. Progress thus depends not only on how teachers function in relation to each pupil, but also on how they make each of the pupils relate to the others. In a good working team, the members enhance the quality of each others' work. In this, pupils also share responsibility for planning, executing and evaluating their own work.

Research reveals great variations in the impact of school classes on pupils, but not that there is any opposition between doing well and feeling well. Classes which are most congenial socially, are often most conducive educationally, for gifted as well as for weaker learners.

Aside from the social conditions outside of school, differences between classes are largely caused by the way teachers structure their pupils' work, provide direction and feedback, support and encouragement for their efforts. For equality of educational opportunity to be realized, it is not sufficient for everyone to receive equal schooling without sexual, functional, geographical, religious, class-based or ethnic discrimination. The right to equal schooling must also be independent of the school class to which the individual pupil is allocated.



The staff shall function as a community of colleagues who share responsibility for the pupils' development.

Teachers must work with parents, other professionals, and the authorities who together form essential elements of the school's broad educational environment

Increased use of projects and teamwork expands the educators' role as both partners and leaders. It requires time for joint meetings at school and a level of coordination that transcends traditional classroom divisions.

The staff shall also function as a community of colleagues who share responsibility for the pupils' development. Given the evolution of today's education, this is not only becoming a greater task, but also a more involved one as new professional groups are linked with the school. A diversified teaching staff enriches the school milieu as teachers with different skills complement each other both professionally and socially.

At the same time the coordination of effort and collaboration among colleagues is decisive for the results that are achieved. This places new demands on the school's leadership. Teachers' opportunities to thrive and flourish presuppose vigour and verve, as well as an employer who appreciates the intrinsic and vital requirements of the teaching profession.

Yet teachers function not only as instructors, counsellors and role models for children. They must also work with parents, other professionals, and the authorities, who together form essential elements of the school's broad educational environment. At the same time, a major task of the school is to provide a nurturing ambience for growth and learning. Good teachers are favorable towards and trained to involve parents, local firms and organizations for the benefit of the school.

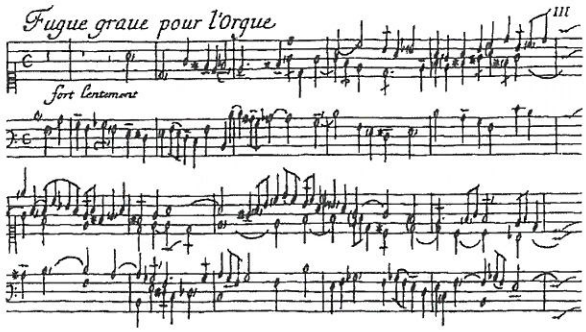
The liberally-educated human being

Schooling shall provide a multi-faceted and all-round general education. This is a precondition for the evolution of the whole personality and for developing manifold interpersonal relationships. It is also a precondition for being able to choose a career and later, to manage a job with competence, responsibility and care.

An all-round general education includes:

- concrete knowledge about the human being, society and nature which can provide a broad outlook and perspective;
- know-how and maturity to face life's practical, social and personal challenges;
- qualities and values that facilitate cooperation between people and make it enriching and exciting for them to live together.

Education must provide the individual with a broad view of how the processes of one sphere of activity affect another, as when industrial production makes an impact on the environment. Human beings can release forces they cannot control, and precipitate repercussions they do not foresee. This makes evident how inadequate is the knowledge we often exploit, and emphasizes the need for more comprehensive understanding. Yet interdisciplinary cooperation demands subject expertise if it is not to be superficial and shallow.

Schooling shall provide a multi-faceted and all-round general education with concrete knowledge about the human being, society and nature which can provide a broad outlook and perspective; with know-how and maturity to face life's practical, social and personal challenges; and with qualities and values that facilitate cooperation between people and make it enriching and exciting for them to live together.

Specific Knowledge and Broad Frames of Reference

In education, knowledge must always constitute a careful selection, presented in a progression to provide overview and create coherence. Concrete knowledge is needed for learning, and the course of study must identify what the learners should be familiar with, in what order and at which level.

Experience and research show that the less previous knowledge one has to link new information to, the slower an less successful is learning. Of particular importance are the constitutive frames of reference in different subjects. These are indispensable for interpreting new information, as well as for directing the search for new facts. If the fundamental frames of reference which can give meaning to the flood of impressions and fragments of information are lacking, the overall picture is easily lost in momentary flickerings. Knowledge that orders information is needed to learn to learn, and for using what one knows to grasp what one does not know. It is the general pattern which provides the code and key when new pieces are added to a mosaic.

To provide context, coherence and perspective, it is important to design and coordinate teaching across subjects and fields, so that their relevance to each other is disclosed and a more integrated understanding can emerge.

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Common References in a Specialized Society

It is a central tenet of popular enlightenment that such frames of reference must be the common property of all the people - indeed must be an integral part of the general education - to escape differences in competence which otherwise can surface in social inequality and be abused by undemocratic forces.

It is therefore imperative that common frames of reference and familiarity with modern technology are shared by all groups to avoid discrepancies in the conditions for democratic participation. And it is important that the knowledge is conveyed so as not to uphold traditional sexual stereotypes, where girls are inculcated with the belief that "women do not understand" science and technology.

Those who do not share the background information taken for granted in public discourse, will often overlook the point or miss the meaning. Newcomers to a country who are not immersed in its frames of reference often remain outsiders because others cannot take for granted what they know and can do - they are in constant need of extra explanations.

Such common contexts, references for understanding, encompass historical events ("The 9th of April"), constitutional principles ("The Division of Powers"), the classics of literature ("Peer Gynt"), cultural idioms ("The camel and the eye of the needle"), or the symbols used on weather charts. Without possessing these common reference points - that make it easy to dechipher and decode, to construe and relate - and hence to communicate effortlessly - one can become alienated in one's own country.

Without comprehension of these overarching paradigms, it is difficult for ordinary citizens - nonspecialists - to participate in decisions that deeply affect their lives. The more specialized and technical our culture becomes, the more difficult it will become to communicate across professional boundaries. Common background knowledge is thus at the core of a national network of communication between members of

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community. It is the common frames of reference which make it possible to link what one sees, reads or hears, to a shared, tacit mode of thinking. It makes it possible to fathom complex messages, and to interpret new ideas, situations and challenges.

Education plays a leading role in passing on this common background information - the culture everybody must be familiar with if society is to remain democratic and its citizens sovereign. Education must therefore provide the fertile soil for cultivation of coherent knowledge, skills and outlooks.

Education must play a leading role in passing on common background information and frames of reference - the culture all must be familiar with if society is to remain democratic and its citizens sovereign.

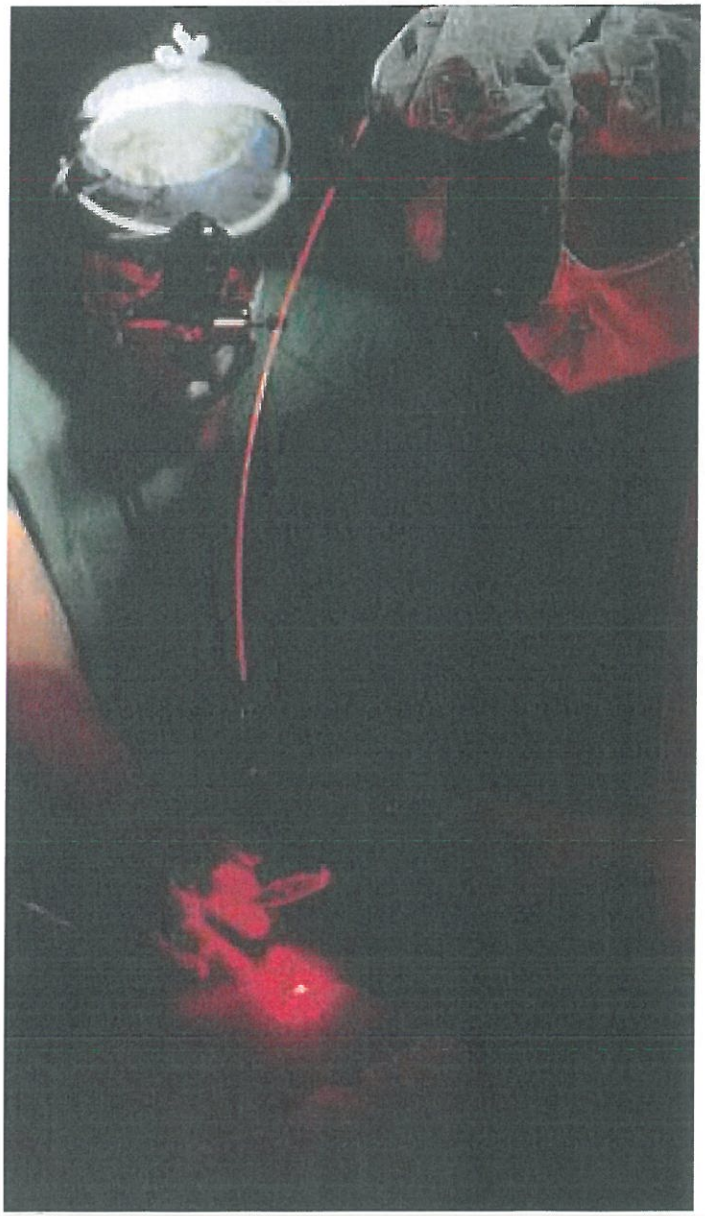
Internationalization and the Appreciation of Tradition

The flows between nations - of ideas and instruments, of capital and commodities, of materials and machines - have become more extensive, formidable and inexorable. Our environment is affected by the pollution of other countries, our industries are subject to competition in the world market, modern mass media direct a stream of news and views at everyone simultaneously.

All this poses many challenges to the task of education: to combine technical know-how with human insight, to develop a work force that is highly qualified and versatile, and to combine an international outlook with national distinction.

A research-based society risks becoming increasingly driven by technology. The flow of technological facts and findings requires learning to avoid "scientific illiteracy" - the inability to comprehend words like "gene splicing", "ozone layer" or "immune system", and what social consequences they augur.

Networks of information are continuously being augmented; networks that bind together firms and organizations, countries and continents, are constantly being built. Norway's ability to exert influence through them - to join in developing the common welfare in the world and protecting the environment of the earth - depends on the contributions our country can make internationally and the extent to which others will want to make use of them. It also depends on familiarity with other countries' cultures and languages.



Education must teach and combine technical know-how with human insight, to develop a work force that is highly qualified and versatile, and to combine an international outlook with national distinction.

The international culture of learning links humanity together through the development and use of new knowledge to better the human condition. On the other hand, the increasing specialization and complexity of the global community requires a deeper familiarity with the main currents and traditional tones of our Norwegian culture. The expansion of knowledge, moreover, demands heightened awareness of the values which must guide our

The international culture of learning links humanity together through the development and use of new knowledge to better the human condition. Adults living now and the young growing up today must acquire the vision and wisdom which equip them for such universal endeavors, especially those that can help the world's destitute. Awareness of the forces and relations in society and in nature is necessary, but not sufficient; concern for others and for our common living environment is essential.

On the other hand, the increasing specialization and complexity of the global community requires a deepened familiarity with the main currents and traditional tones of our Norwegian culture. The expansion of knowledge, moreover, demands heightened awareness of the values which must guide our choices.

When transitions are massive and changes rapid, it becomes even more pressing to emphasize historical orientation, national distinctiveness and local variation to safeguard our identity - and to sustain a global environment with breadth and vigor.

A good general education must contribute to national identity and solidarity by impressing the common stamp from local communities in language, tradition, and learning. This will also make it easier for pupils who move to find their footing anew as migration will mean relocation within a familiar commonality. The bonds between generations will be closer when they share experiences and insights, stories, songs, and legends. Newcomers are more easily incorporated into our society when implicit features of our culture are made clear and exposed to view.

Knowledge about past events and achievements unite people over time. The knowledge of history enhances our ability to set goals and choose means in the future. Familiarity with what people have felt, thought and believed in earlier times expands the scope for insight and initiative and reminds us that today's conditions will also change.

Education must therefore provide a coherent and well-rounded body of knowledge. It must show how our perception is the outcome of a long process of creation that spans many generations, has crossed many borders and breached many barriers. Such an education induces respect and appreciation for what people before us have accomplished and allows us to place ourselves in a historical progression.

In short, a good general education shows how the accumulation of skills, insight, and wisdom is one of the most thrilling achievements that humans have accomplished *together* - historically and globally. It strengthens qualities and values that provide society with richer opportunities for growth in the future.

The social human being

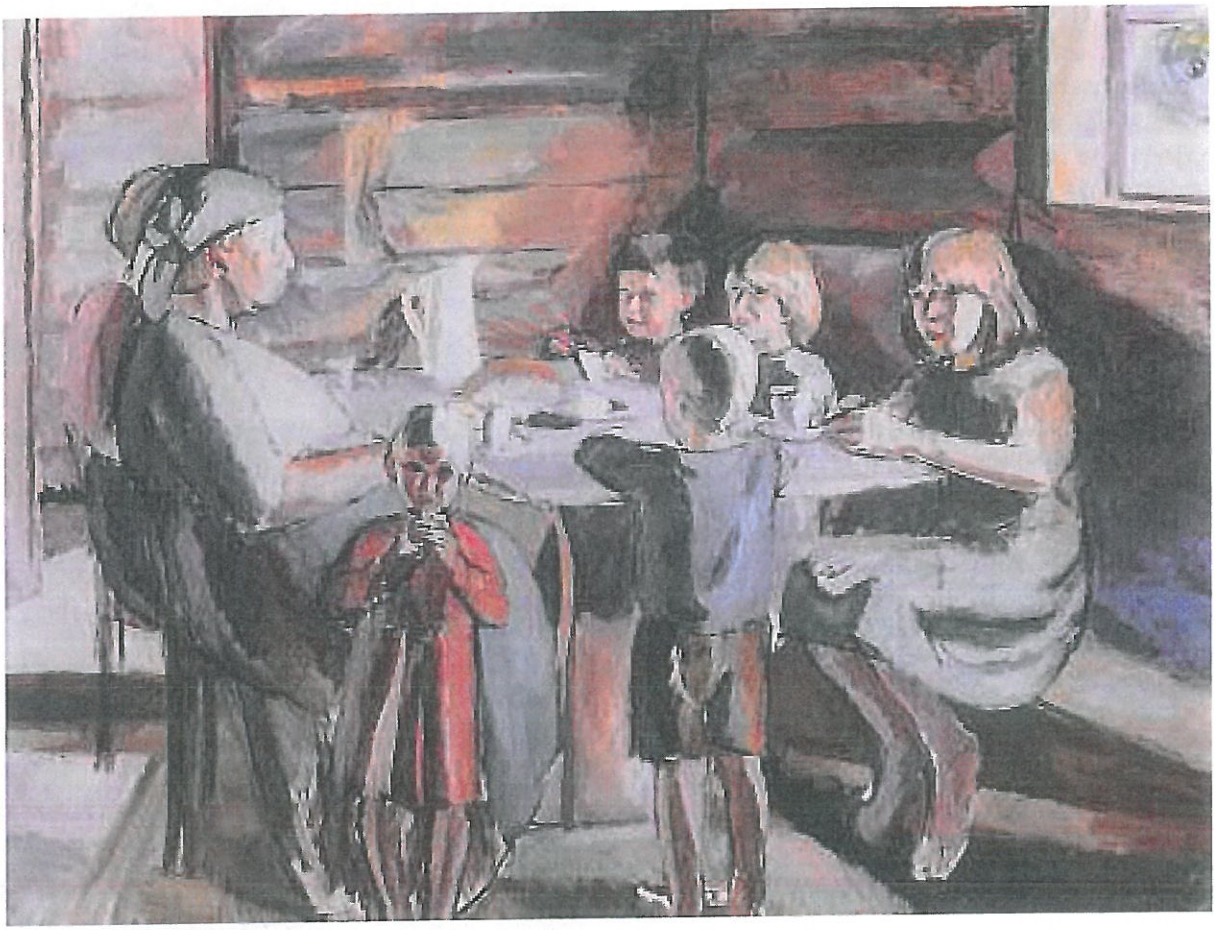
A person's aptitude and identity develop in interaction with others; human beings are formed by their environment, just as they contribute to forming it.

A Diversified Peer Culture

In earlier times a larger part of upbringing occurred through direct participation in the adult world where children and the young had an active share in daily chores for the common good. Nowadays almost all education takes place in schools, specialized institutions for teaching. Young people are to a large degree estranged from tasks in the world of work and have little responsibility for or control over them. In addition, their increasing exposure to the mass media places them in the passive role of spectators and exposes them to conflicting views and values.

The narrowing of the young people's contact with the practical world outside the school and the consequent reduction of interaction with adults, is often exacerbated by an introverted and introspective peer culture. This peer culture is given added impact by the fact that the school is separated from the rest of society, and pupils are devided into classes by age. Children and young people are given little opportunity to make decisions with immediate practical consequences or repercussions for others, which would enable them to learn from the effects of their own efforts. The component of vicarious experience has increased at the expense of direct experience.

It is important to exploit the school as a community of work for the development of social skills. It must be structured in such a way that the learners' activities have consequences for others, and so that they can learn from the impact of their decisions.



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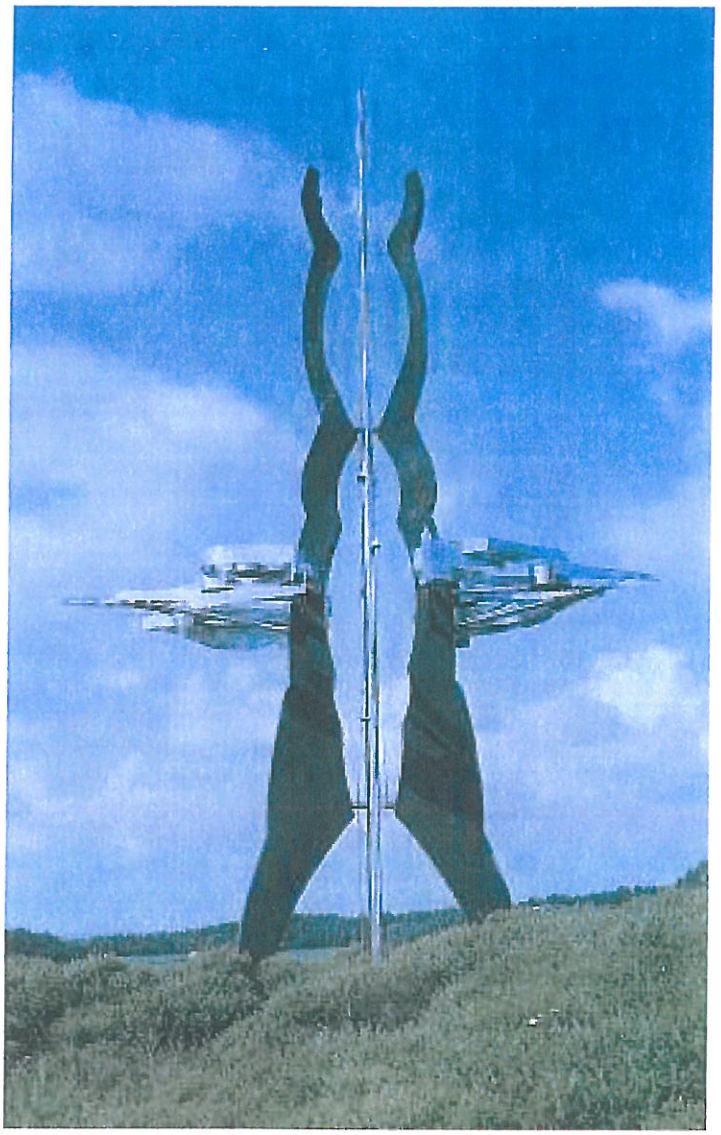
For this reason, it is important to exploit the school as a community of work for the development of social skills. It must be structured in such a way that the learners' activities have consequences for others, and so that they can learn from the impact of their decisions. The changes in the social conditions of childhood and adolescence mean that the ways of working and social relations built into the educational system have an even greater significance for the learners' growth. Experience from practical work and apprenticeship is a model to be followed throughout the educational system.

At the same time, formal education is only part of the lives of the young. Childhood and adolescence are also a time of turbulence and play, of fumbling and bungling. Learners are more than ever before active in sports, music, in organizations and teams, in choirs and clubs, where they set their own standards within a circle of friends, and where they influence and are influenced by their own milieu. The school must find the difficult balance between stimulating and exploiting the culture the young themselves create, and forming a counterweight to it.



Duties and Responsibilities

Learners and apprentices should participate in a broad spectrum of activities in which all have duties towards the working group, including practice in standing before the others, presenting a case, making plans, putting them into effect and seeing a job done.

This implies that learners - from the first day of school, and increasingly with age - must have duties and responsibilities, not only for the sake of their own benefit and growth, but also as an obligation to classmates and other members of the school community. Such assignments should cover the whole range from the buddy system to looking after younger pupils and helping them out, accountability for order and tidying up, contributing to class events and meetings, assisting at mealtimes, etc.

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The aim of this type of training is to develop empathy and sensitivity towards others, provide practice in assessing social situations and promote responsibility for others' well-being. Those who have been insufficiently stimulated at home or in their neighborhood, must be given the opportunity for maturing in a learning environment were learners take responsibility for one another's development. Taking part in creating a microcosm of companionship advances personal maturation, especially when it entails cooperation between persons on different levels or with different aptitudes or talents. Pupils should therefore enlist in practical work, both as providers and recipients of services. They should get into the habit of taking responsibility in their own current society as preparation for participation in tomorrow's.

Everyone shares responsibility for a learning environment which shows consideration for the needs of others and a respect for learning. The individual's everyday situation in school as well opportunity later in life can be destroyed if conflict and disruption are allowed to dominate

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classroom atmosphere or school. All pupils have the right to an education in calm and ordered conditions and are themselves mutually responsible for this.

Social Learning from the School Community

Much of the readiness for adult life that the young previously acquired through their duties in extended families and their tasks in the working world, they must now gain in the course of their schooling. Hence today's education must encompass:

- Experience in making decisions with direct and clear consequences for others. This implies training in making and following rules, practice in making decisions in tangled situations, exercising "crisis skills", i.e. the ability to act when faced with unexpected troubles or unfamiliar tasks, etc. Taken together, these represent coaching in social responsibility.
- Experience from work where interdependence demands discipline and where an individual's efforts influence the outcome of the work of others. This requires the development of organizational skill, such as the ability to coordinate work, to lead activities, follow directions, and to suggest alternative solutions.
- Experience from the school community: knowledge about how problems that are perceived as being personal are in fact shared by many and hence can only be resolved through cooperation or by organizational change. Such experience teaches how conflicts can be met and settled, how to advocate one's own and other's interests, and how to stand up against a headwind and persevere against odds. In this connection, learners must also gain experience in contacting authorities and the media.

The school is a society in miniature that should be used actively for attaining such skills. The learners must be spurred to engage in its decisions, for their ability to participate is strengthened by use. This is essential in a society with such complex institutions as ours.

All in all, education must be dedicated to the personal qualities we wish to develop and not solely to subject matter. The key is to create an environment that provides ample opportunities for children and young people to evolve social responsibility and practical capability for their future roles as adults.

A Broad Context for Learning: Peer Culture, Parent Participation, and the Local Community

The school as a learning environment goes beyond formal education in the classroom and the relationship between teacher and pupil. A broad and nurturing learning environment encompasses all interaction between adults and learners and is founded on a common understanding of the aims of education.

The social relations among the pupils and the values embedded in the youth culture are integral parts of the learning environment. Indeed, peer culture constrains and gives scope to what the school is able to achieve.

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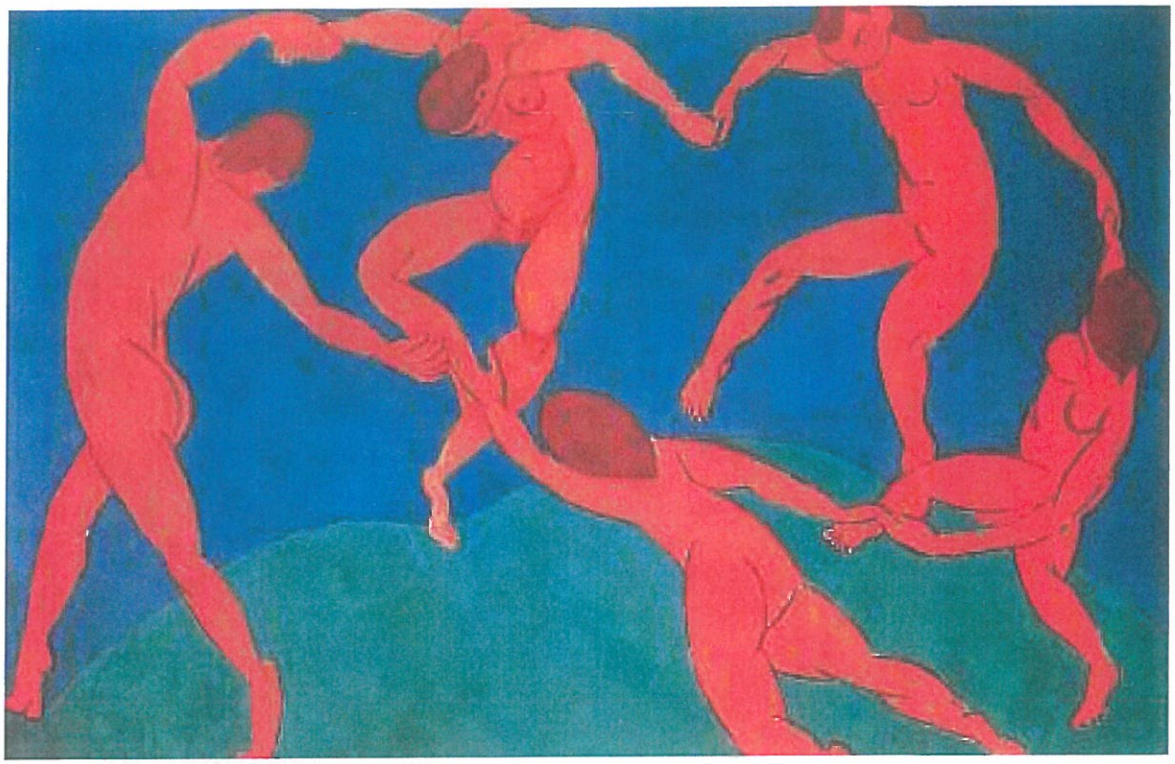

The school shall function as an active source of energy and culture for the local community, and promote contact not only between adults and children, but also with local services and industry.

Parents have the primary responsibility for bringing up and educating their children. This cannot be left to the school, but should be exercised in collaboration between the school and the home. For the learning environment embraces the parents as well. If they stand aloof from the school and have no direct contact with each other, the school cannot make use of their social resources to shape the conditions for growth and the climate of values surrounding it. At a time when the extended familiy is playing a lesser role in the lives of the young, and the media have filled the vacancy left by parents at work, more active mobilization of the parents is needed to strengthen the school's and the learners' social and normative habitat.

For schools to function well, it is not only necessary that learners know each other; the parents must also know both each other and each other's children. This is essential if they are to be able to establish common standards for their children's activities and behavior. The school must, with the endorsement and collaboration of the parents, complement the children's education - and it must engage the parents in developing the milieu at school and in the local community.

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The local community, with its natural surroundings and industry, is itself a vital part of the school's learning environment. The young derive impulses and experience from the community on their own, which the school must employ and enrich in the curriculum. For technical skills apprenticeships are vital; training for working life should take place within working life. Nevertheless, education must in general initiate contact with the school's neighborhood and utilize the resources and the know-how that exist in its environs. The school shall function as an active source of energy and culture for the local community, and promote not only contact between adults and children, but also with local services and industry.

The environmentally-aware human being

Our living environment has become decreasingly dependent on nature and increasingly influenced by the man-made world. Our well-being depends on our ability to develop new ideas, to use advanced technology, to create new products and to solve traditional problems with more imagination and reason. In the course of a few years, new products can radically alter the lives of human beings, such as incandescent light or the automobile, antibiotics or personal computers. The road from innovation to application is often short - laser beams are now used in CD players, surgical instruments or in laser printers.

Human beings are a part of nature, and are constantly making decisions with repercussions not only for their own welfare, but also for other humans and for the natural environment as well. Our choices have consequences across geographic borders and across generations: lifestyle influences health; our nation's consumption produces pollution in other countries; and our society's waste becomes the plight of future generations.

Natural Science, Ecology and Ethics

Science and research have improved the health of human beings, raised their standard of living and enhanced their welfare in large parts of the world. But they have also sharpened inequalities in the global community and increased the threats to nature.

A fundamental feature of modern societies is that they are more and more based on technology - on procedures and implements for transforming nature's raw materials to accommodate human purposes. This has furnished us with medicines and vaccines, books and television, textiles and turbines, quartz watches and washing machines. Systematized knowledge is an increasing ingredient in everything that we surround ourselves with - from jogging shoes to smoke alarms. The development of new technology is an arena for unfolding imagination and unleashing creative energy, which can enrich the life of the individual and enhance society's culture. Technological know-

ledge is an integral part of a general education - the curiosity to comprehend the lives and works of our ancestors, and the power and urge to penetrate our own nature and the natural world around us.

Human beings find joy both in posing questions and in finding answers, and seek security in knowing and mastering. The application of scientific insight has become a model for conscious use of competence and an impetus to win new knowledge. It has also spread to other areas, as when sociological and humanistic insight is used to make wiser and more humane choices.

Human Beings, the Environment and Conflicts of Interest

Scientific breakthroughs have occurred in every sphere of life. Science and technology have extended the scope for intervention in human life and in nature. But the application of knowledge has often had side effects, belatedly recognized yet demonstrably harmful. DDT which killed pests and contained disease, unknowingly accumulated in the food chain and unintentionally destroyed life in several of its links. The material growth that initially resulted from iron smelting using coal and coke, was followed by pollution and acid rain that caused deforestation and killed fish.

In short: Science and technology have increased the potential for modifying both the human condition and nature. But their application often causes reverberations in greater realms than foreseen and causes disturbances in wider circles than intended. Applied science and technology have had negative consequences, partially acknowledged as with nuclear explosions, partially unintended side effects such as acid rain, deforestation or the greenhouse effect.

Our way of life and our form of society have profound, threatening effects on the environment. This begets conflicts between groups and between nations. The consequences of applied science - of human action based on research - have at once become more extensive and more interlaced. This makes it necessary to expand our knowledge about the inter-connections across subject boundaries, and to mobilize efforts across national borders. It increases the need for more knowledge, more holistic knowledge, and for more conscious ecological, ethical and political decisions made by individuals, and by society as a whole. Understanding makes for insightful decisions, ethical appreciation that decisions can be made with discernment.

Industrial nations with a high level of education have a special responsibility for ensuring the common future of the world. The World Commission for the Environment and Development has highlighted the problems arising from complex crises - e.g. from improved health and overpopulation, from modern technology that depletes natural resources and damages life, from economic growth which pollutes and harms nature, and from poverty and privation.

The interplay between economy, ecology and technology must make unique demands, scientific and ethical, on our age, if we are to ensure sustainable development. This must take as its starting point the limitations set by our natural environment, by resources, technological level and social conditions as well as by the conflicts which arise when environmental considerations are given priority. World development must be set by political institutions on a viable course so that the biosphere can absorb the effects of human activity. And sustainable development makes ethical demands: if it is to be feasible, human brotherhood and solidarity with the world's poor must be a driving principle.

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Education must therefore provide a broad awareness of the interconnections in nature and about the interplay between humans and their habitat. The teaching must unite a clear understanding of nature's matter, forces and species with an appreciation of how social organization and technology both solve problems and impinge on the biosphere. It must spur the urge of the young to understand the processes of nature. Hence, immersion in the natural sciences is a crucial component of a well-balanced education.

Education must counteract fragmentary and compartmentalized learning. Concrete facts are necessary, but by themselves are not enough - a holistic knowledge of the sciences and ecology is also needed. To them must be added the insights provided by sosial studies, economics and politics informed by ethics. Students must learn to discern the relationships between things and to attain perspective - learn to look ahead in life and out into the world. Education must awaken their faith in the efficacy of joint efforts and collective action to solve the formidable global problems facing them.

The Joy of Nature

Education must also enkindle a sense of joy in physical activity and nature's grandeur, of living in a beautiful country, in the lines of a landscape, and in the changing seasons. It should awaken a sense of awe towards the unexplainable, induce pleasures in outdoor life and nourish the urge to wander off the beaten track and into uncharted terrain; to use body and senses to discover new places and to explore the world.

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Outdoor life touches us in body, mind and soul. Education must corroborate the connection between understanding nature and experiencing nature: familiarity with the elements and the interconnections in our living environment must be accompanied by the recognition of our dependence on other species, our affinity with them, and our joy in wildlife.

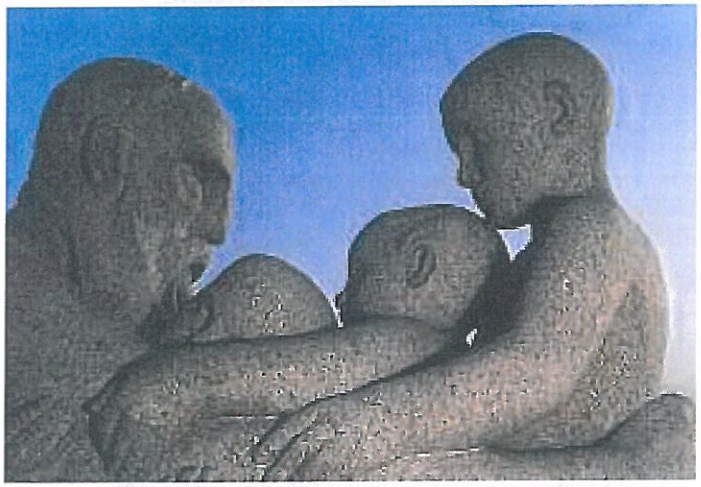
The integrated human being

Education has a number of seemingly contradictory aims:

- to convey our culture's moral commonality, with its concern for others – *and* to foster the ability to plot one's own course;
- to provide familiarity with our Christian and humanist heritage – *and* knowledge of and respect for other religions and faiths;
- to overcome self-centeredness an belief in the right of the strongest – *and* to inspire strength to stand alone, to stand up, to dissent and not to knuckle under or cave in to the opinions of others;
- to develop independent and autonomous personalities - *and* the ability to function and work as a team.

Education shall inspire an integrated development of the skills and qualities that allow one to behave morally, to create and to act, and to work together and in harmony with nature. Education shall contribute to building character which will give the individual the strength to take responsibility for his or her life, to make a commitment to society, and to care for the environment.

- to nurture the individual's uniqueness, the disstinctions that make each individual a fount for others - *and* to convey the common store of knowledge and skills that facilitates interaction and can jointly contribute to society and its growth;
- to allow space for the ways and wont of the young - *and* fit them to join in and take on responsibility in the adult world;
- to furnish skills for work and the practical tasks of life - *and* provide room for emotional and character growth;
- To teach and tend our national heritage and local traditions in order to preserve variety and uniqueness - *and* to meet other cultures openly in order to find pleasure in the diversity of human expression and to learn from contrast;
- to confer knowledge about mankind's conflict-ridden history, the triumphs and the tribulations of the past - *and* about today's crises and chances;
- to awaken awareness of how our age and our daily lives are determined by the choices of former generations - *and* of how we too set the scene for future generations;
- to provide enough facts to be able to fathom and follow current affairs - *and* convey values that can guide the choices that new knowledge opens the way for;
- to provide powerful exposure to the greatest achievements in literature and art, in work, adventure and research - *and* give each individual the opportunity to discover and develop the germs that lie in his or her own powers;



- to inspire respect for facts and sound argument - *and* to train critical abilities to attack prevailing attitudes, contend with conventional wisdom and challenge existing arrangements;
- to awaken esteem for other's efforts and humility for their feats - *and* to instill enough faith in oneself to dare to fail;
- to open the senses to the patterns that have taken hold as traditions, in everything from music to architecture - *and* have the nerve to think anew and the imagination to break with established ways;
- to provide the young with a solid foundation of knowledge - *and* mold it in such a way that it impels to inquiry and the quest for new knowledge throughout life;
- to teach pupils to utilize nature and the forces of nature for human purposes - *and* teach them to protect the environment against human folly and encroachment.

Education must balance these dual aims. The object is an all-round development of abilities and distinctive qualities: to conduct oneself morally, to create and to act, to work with others and in harmony with nature. Education shall contribute to the building of character that gives individuals the strength to take command of their own lives, take on duties for their society, and take heed of the living environment.

When greater knowledge gives greater power, more stress must be placed on the responsibility that accompanies this power. The choices to be made must be based on awareness of consequences and connections, but also guided by probing against values. A distinct precept of education must be to combine greater knowledge, know-how and skills with social awareness, ethical orientation and aesthetic sensibility. The young must be integrated both personally and in social life in a morally coherent way. Education shall promote ethical and critical responsibility in the young for the society and the world they live in.

The ultimate aim of education is to inspire individuals to realize their potential in ways that serve the common good; to nurture humaneness in a society in development.

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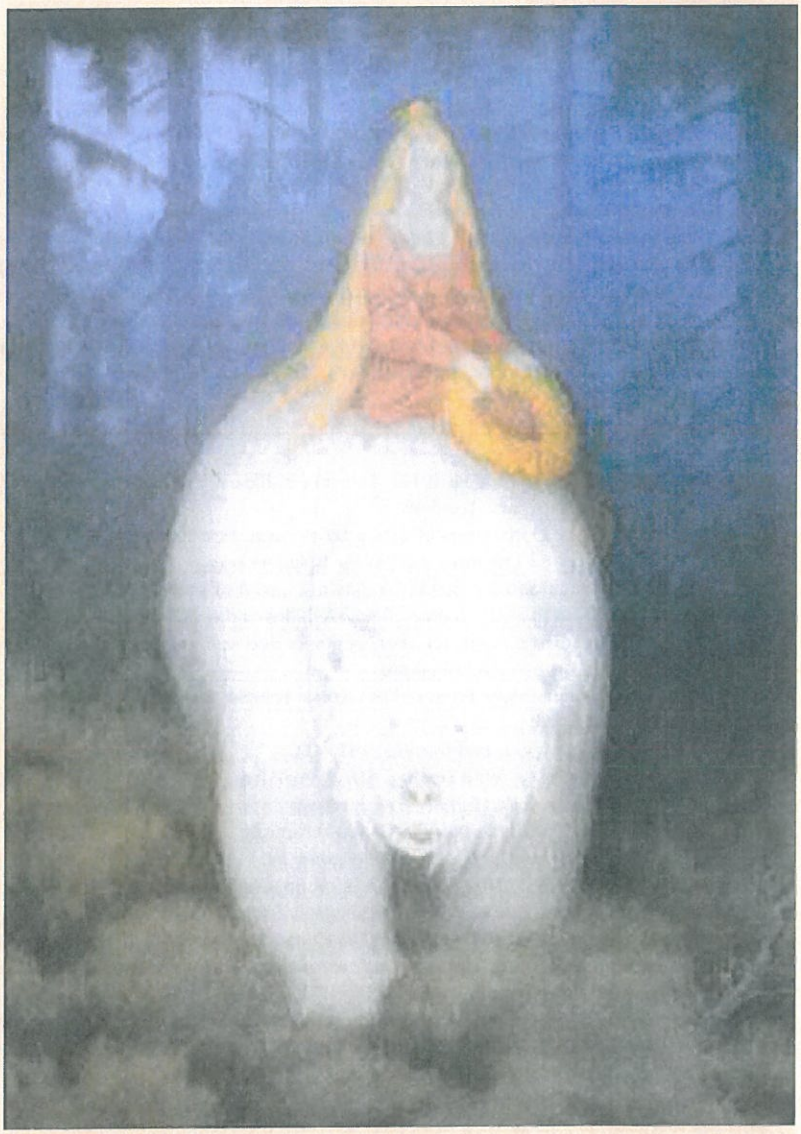

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