

ANNEX XV

Workshop reports

Workshop 1: “Citizenship education: learning at school and in society”

Workshop No. 1 was dedicated to **citizenship education**. Mr Sveinn Einarsson, the President of the Icelandic National Commission for UNESCO, was the moderator of the session, with the five panellists being:

- Her Excellency Ms Mariana Alwyn, Minister of Education of Chile;
- Her Excellency Ms Margrethe Vestager, Minister of Education of Denmark;
- Mr Benali Benzaghrou, Rector of the University of Science and Technology “Houari Boumediene”, Algiers, Algeria;
- Mr Samuel Lee, Director of the Asian-Pacific Centre of Education for International Understanding (Republic of Korea);
- Mr Cliff Olivier, Co-ordinator of IBIS, Pretoria (South Africa).

A challenging subject, it is currently the centre of debates in all regions and countries of the world. The debates involve not just experts and practitioners but also politicians and decision-makers. For example, citizenship education was the main theme of the Conference of European Ministers of Education held in Crakow, in October 2000.

It is not just politicians and top decision-makers who are interested in citizenship education but also people coming from various business environments, the church, media, politics and civil society. The reason is that the world of education has high **expectations** of citizenship learning. For instance, some of the participants at the workshop mentioned the contribution of citizenship education to social cohesion, social trust and confidence building particularly in areas of conflict. For others, citizenship education is the main tool to educate citizens to live in a State governed by the rule of law. For some, citizenship education has to contribute to democratic governance while other contributors put the emphasis on the importance of preparing the student for employment and social participation. Finally, it was a general concern that citizenship is a general factor for sustainable development.

These high expectations could create unrealistic pressures on the school. This is why some other participants called for more pragmatic and feasible approaches, rather than expecting that citizenship education alone could solve these societal problems. As stated by one panellist, we have to avoid citizenship education becoming a “semantic illusion” in the way which moral education was traditionally considered as a panacea for all social problems. Similarly, as another panellist stated, we have to overcome the danger of a narrow interpretation of citizenship education related to political or ideological indoctrination often imposed on schools as a ready-made solution.

Beyond these controversies, dilemmas and open questions, the fact is that citizenship education is present in daily life in all countries and regions. This is the result, in some cases, of clear political options, or explicit educational policies, or in other cases, the consequence of initiatives by teachers and parents who find the area of citizenship education a pedagogical space allowing innovation and creativity.

In this framework, most of the contributions focused on four issues. One, the relationship between citizenship education and learning to live together, secondly, the question of how to implement citizenship education in a variety of social and economic contexts, thirdly, citizenship education as a challenge for the educational community, and fourthly, education for global citizenship. These four points summarize the direction of the debate which took place.

Message No. 1: Citizenship education is an essential means of learning to live together.

It is important to stress that in this context “together” does not refer uniquely to individuals, but also to institutions, communities and nations which have to cooperate and build partnerships. In this respect, some participants considered that learning to live together is a societal project to which contribute different types of education such as peace education, human rights education, citizenship education and values education. This implies a shift from learning by transmission of knowledge to a social learning perspective and a student centred approach, as well as the incorporation of new forms of learning in the school context. As reported from various national initiatives, this includes contextual learning, activity learning, collaborative learning and particularly, experiential learning. However, the links between citizenship education and learning to live together remain to be explored, at least from certain participants point of view. As pointed out by one panellist, learning to live together is more clear and accessible for all societies than citizenship education for which the content has to be described according to the “variable geometric principle”.

This brings us to the second message, namely, **how to implement citizenship education in a variety of contexts**. It was generally accepted that citizenship education is learning throughout life, in all circumstances and in every form of human activity. As pointed out in the background paper prepared by the Danish Ministry of Education, learning for citizenship makes use of both organized learning (formal and non-formal) as well as of the learning potential to be found in daily circumstances (informal or incidental learning).

Within this lifelong learning system, the school is a major factor of citizenship education. In order to increase the efficiency of citizenship education, participants pointed out that the school should:

- encourage the participation of pupils in internal school decisions and student associations;
- create an institutional ethos encouraging dialogue, cooperation and democratic relations;
- establish cooperation with families, communities and the social environment;
- promote a whole school approach to citizenship education.

Provision is made for citizenship education in the curriculum of all the countries represented at the workshop. In most cases, according to the national reports prepared for the International Conference on Education, citizenship education is a separate subject in the formal curriculum. Other experiences encourage integrated programmes or cross-curricular themes. In addition to the provisions in the formal curriculum, participants stressed the numerous experiences resulting from out-of-school activities such as residential visits, pilot projects or voluntary activities. Finally, the importance of the hidden curriculum was emphasized, namely of natural and spontaneous encounters in daily school life, which often have a greater impact than the formal curriculum.

Message No. 3: Citizenship education creates new challenges for the educational community.

In some cases, citizenship education is the core for reforms and innovations in educational systems. Even though it may not be a subject for formal evaluation and selection to universities, it is

an opportunity for alternative approaches, pilot projects and institutional partnerships. In most of the cases, this new pedagogical approach is not possible within the so-called “traditional subjects”. As mentioned by one panellist, citizenship education is not a monopoly of one generation, institution or culture, it must be continuously constructed and innovated. In other words, citizenship education is at the same time an opportunity and a challenge for education. In this perspective, participants mentioned the following specific challenges:

- New roles and assignments of teachers. Instead of a unique source of knowledge, teachers must become moderators, learning facilitators, advisors and resource persons.
- Citizenship education, therefore, must not be limited either to a didactic transmission of knowledge or to a teaching activity proper. What counts most of all is learner participation and direct practice of citizenship in various educational environments.
- As illustrated by some of the case studies put forward in the workshop, citizenship education involves institutional partnerships, the most common being partnerships between school and family, school and community, or the industrial sector. This would imply a convergence of educational messages and values between school and societies as a whole, and particularly the media.
- The role of ICTs and Internet for citizenship education has to be elaborated. For example, how to use it constructively and critically, how to provide access and build networks of citizens.

Message No. 4: Education for global citizenship is instrumental to cope with the challenges of globalization.

Although it is not yet properly defined, it is commonly characterized by global awareness, shared values and joint projects. As stressed by a number of participants, global citizenship goes beyond the narrow, national perspective of membership. It implies shared responsibility and the idea of belonging to the same global entity. This is, in fact, the very essence of learning to live together.

Chair/Excellencies/Ladies and Gentlemen,

These messages represent the essentials of the debate held during Workshop No. 1. The question we should ask ourselves now is “How do we make the best use of these messages?” Or, in other words, how can we make these important conclusions produce an impact beyond that of a mere report presented in the ICE plenary?

Without claiming to have covered all possibilities, in our opinion the following means should be taken into account:

1. Obviously, the first possible impact will be to incorporate some of our conclusions in the final report of ICE. This would result in an extended international audience especially within the UNESCO system and among its partners.
2. In the second place, it would be possible to take these recommendations into consideration for the future mid-term programme of UNESCO. Actually, as we observed during the workshop, citizenship education is a major dimension of educational policies in the member countries with high expectations in this field. To

meet these expectations, UNESCO must consider citizenship education as a priority among its actions in the field of education and must allot adequate resources.

3. Thirdly, the International Bureau of Education in its capacity of specialized institution could actually implement some of our conclusions. In recent years, IBE has focused its attention on educational contents and learning to live together. IBE could add to its valuable activities an equally important dimension, namely education for global citizenship.
4. In the fourth place, our conclusions could be useful in developing projects at national, regional or international level. These activities should take into account specific contexts and should keep in view the “variable geometry” principle. Ultimately, citizenship education is applied in a concrete cultural and social environment, where priorities and constraints may differ.

Finally, our conclusions might be of particular interest to practitioners in their daily work for citizenship education.

Thank you for your attention.

Workshop 2: “Social exclusion and violence: Education for social cohesion”

Moderator: Mr Jean-Pierre GONTARD (Graduate Institute of Development Studies, Geneva).

Panelists:

H.E. Mr Pierre NZILA, Minister of Education, Republic of the Congo;

H.E. Mr Antanas MOCKUS, Mayor of Bogota, Colombia;

H.E. Ms Isabel COUSO TAPIA, Secretary-General, Ministry of Education, Spain;

Professor Ivan IVIC, Faculty of Philosophy, Belgrade, Yugoslavia;

Ms Pari ZARRABI, Sociologist, Geneva, Switzerland.

The workshop was organized around the question of how formal education relates to processes of social exclusion and to patterns of violence associated with the breakdown of social cohesion. More particularly, the discussion focused on three main questions:

1. What consequences does societal violence have on education?
2. How does formal education relate to wider processes of social exclusion?
3. How can education contribute to strengthening or rebuilding social cohesion?

The following salient points emerged in the course of the discussion:

1. Need for clear definitions and conceptual clarifications

The ideas presented and discussed during the workshop revolved around the relation of education to violence at two distinct levels:

- (1) schooling and the prevention of violence among youth, and the necessary distinction between school-based violence and wider institutional violence, and
- (2) the consequences of armed conflict and civil strife on education systems and the possibilities and limits of schooling in restoring social cohesion in post-conflict settings.

The theme of exclusion, whether in terms of poverty, inequality or the denial of fundamental social and political rights, was a common thread that ran through the discussions of violence at both these levels. Although there is clear overlap between the two levels of analysis, the discussions still pointed to the need for a distinction between the two, and for clear definitions with regard to patterns of violence.

2. Need to consider schooling within wider environment

It was recalled that formal education, and schooling in particular, must be considered in relation to forms of exclusion that are shaped by wider social, economic, political and historic forces. Any discussion of the relation between education and violence, and of the potential of formal education to contribute to enhancing and restoring social cohesion, must therefore consider these wider societal processes. Moreover, it was pointed out that, at times, schooling also reproduces or even exacerbates forms of discrimination, inequality and exclusion based on gender, socio-economic status, ethnic, cultural or political identities.

3. Conditions for education for social cohesion

Protecting fundamental rights

Education for “living together” requires that life, health and human dignity be protected so as to ensure the basic right to education for the poor, girls and women, minority groups, refugees and civilian populations in war-torn areas. Social divisions and exclusion are first and foremost a result of the denial of the right to education for significant proportions of children and young people concentrated mainly, but not exclusively, in the poorest areas of the South.

Ensuring justice

How does one learn to “live together” in the wake of bloody conflicts within divided societies? The notion of “living together” in the aftermath of civil strife and extreme societal violence within divided societies is a problematic and complex endeavour. Many delegations expressed the view that social cohesion presupposes peace, and that peace must be based on justice. And one approach to justice is truth and reconciliation. Education is clearly a complement to such approaches.

4. Limits of educational initiatives

Although schooling may constitute an important vehicle for social reconstruction following periods of internal conflict and weakened if not collapsed state structures, it is important to acknowledge the limits of schooling as a delivery channel for reconciliation and the reconstruction of social cohesion for a number of reasons.

The relative weight of schooling in civic and political socialization

It was noted, for example, that the family, the home and the immediate community have a central place in the informal political socialisation initiated from an early age. Also, it can be argued that the media, and (satellite) television in particular, has an increasing weight in the education of young people in an increasingly globalized world. Finally, not only are these processes of socialization multiple, but they are also sometimes in competition or in contradiction. The real impact of peace education through schooling is therefore seriously hampered when it contrasts with surrounding adult role models in the home, the wider community or the media. This points to the need to consider wider initiatives that include adult education and the media.

Transferring values and attitudes from school to wider society

Such observations about the limit of schooling also highlight the lack of conclusive evidence relative to the way in which individual and interpersonal skills and attitudes transmitted through formal or non-formal education transfer to group behaviour, particularly in settings of acute social and political tensions. It is therefore important to acknowledge the limits of educational initiatives in preventing or reducing violence among youth when the causes of such violence lie outside of the education system.

5. Promising combination of strategies

A number of promising experiences relating both to violence prevention among youth and to education in post-conflict settings were shared. These experiences have in common a more holistic approach based on effective context-specific combinations of complementary strategies. These strategies range from curricular enrichment and inclusive participatory school-based processes, to non-formal education and life-long learning perspectives. Examples were also provided of how

governing can be creatively made to be a form of citizenship education, developing a civic culture through the awareness of the need for minimal rules to live together, and how this may be a powerful strategy of violence prevention in urban areas. Other examples demonstrated how education can promote social cohesion by preventing and reducing social exclusion. Indeed, measures of positive discrimination have shown how patterns of school failure and drop-out can be reversed thus reducing the probability of exclusion from future welfare. Finally, examples were discussed of how combinations of formal and non-formal approaches (including basic schooling, curricular innovation, adult literacy, alternative accelerated primary education for out-of-school youth, and psycho-social support) have contributed to reconstructing social cohesion in post-conflict settings. It was felt that such experiences deserved to be shared more widely among partners and networks involved in education.

Workshop 3: “Shared values, cultural diversity and education: what and how to learn?”

Moderator: Mr Luis Enrique LOPEZ (PROEIB-ANDES)

Panelists:

H.E. Ms Lucija COK, Minister of Education and Sports, Slovenia

Mr Bodo RICHTER, Secretary of State, Kultusministerium desd Landes Sachsen-Anhalt, Germany

Mr Abdeljalil AKKARI SCKELL, Professor, University of Fribourg (Switzerland)

Dr Geraldine CASTLETON, Researcher, Griffith University, Brisbane, Australia

Mr Tesfamichael GERATHU, Director-General, Ministry of Education of Eritrea

The discussions in Workshop No. 3 gave rise to a very strong consensus on the relevance of the question of promoting and developing shared values, cultural diversity and their integration in and by education.

This overall consensus did not necessarily stem from an identity of motives or reasoning.

Cultural diversity and the practice of shared values were recognized as being a functional reality in many societies. Such values, constrained by historical factors such as colonization, had difficulty in endowing their basic postulates with a legal status, official recognition and legitimacy. So it was that these values, despite the fact of their existence, appeared informal, inferior and a source of complex unease. This situation concerned most of the formerly colonized countries of the South. The integration of such practices, values and customs by education was therefore ultimately conditional on their rehabilitation.

Cultural diversity and the importance of sharing the values of others had only become a requirement for some societies because of the reality of globalization, immigration and the mobility of people, ideas and information technologies. For those societies in which “monoculturalism” was the rule, the introduction of interculturalism into education was seen as both a challenge and a need, a necessity that had to be addressed. Some States, even in the West, had committed themselves to work in that direction.

Whatever the case, the introduction of an intercultural and pluralistic perspective by education presupposed:

- (a) an epistemological, organizational, strategic and ideological shift of focus;
- (b) suitable methods;
- (c) a revision or adaptation of content;
- (d) a keen awareness of the upstream and downstream problems.

METHODS

Taking account of pluralism and cultural diversity at school called for appropriate pedagogical methods such as a renewed approach to teaching, constructivism, “dialogics”, interdisciplinarity and active pupil participation, problem solving and conflict resolution, and self-observation and self-evaluation strategies. The aim must be to enable the child to acquire a good grasp of traditional and modern knowledge and, above all, to develop fully as an individual.

Further details on the precise implications of the different methods cited could be supplied by Dr Lucija Cok, Dr Geraldine Castelton, Dr Bodo Richter, Dr Tesfamichael Gerahtu, Dr Abdeljalil Akkari and Dr Enrique Lopez and all those who worked in this workshop in their particular areas of concern.

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The contents that needed to be taught with a view to taking better account of diversity should first and foremost aim at ensuring:

- autonomy with respect to globalization;
- transmission of the cultural heritage;
- relevance for the community and those most closely involved;
- promotion of gender equality.

Mention was made of a number of key values that should be explicitly taught. They included love, peace, solidarity, tolerance, learning about differences, etc.

In that connection, while some subjects were mentioned as being best suited to incorporating this teaching, nothing precise seems to have been proposed concerning the methods to be employed for that purpose.

The question that commanded the greatest attention was the teaching of languages, or more precisely use of the mother tongue or minority languages in teaching. Provision was not structured in the same way everywhere. In some cases, the tendency was towards strengthening the rights of minority cultures in relation to their identity without refusing them access to the culture and language of the majority. In other cases, it was a matter of making the whole range of cultural contents of the majority and minorities alike available to all citizens so as to arrive at a common intercultural education for all pupils, thereby providing the basis for constructive coexistence.

An education properly based on cultural diversity should avoid relying on a hierarchy of languages. It should rather be based on the recognition of equal status for all languages. It could also rest on the notion of a complementarity of languages and cultures.

However well it was organized, education that took account of cultural diversity raised many questions.

For example, it was important to ask whether all the cultural aspects were positive and deserved to be taken up and transmitted? Whether they were all conducive to learning to live together? How shared values could be taught in a context of fear of others, discrimination, etc.?

Were we not asking too much of the school?

How could school alone assume responsibility for problems rooted at different levels (political, economic, historical, etc.)?

Were there institutions in society other than school that could help in the promotion of cultural diversity?

By way of response to these questions, a number of provisions were envisaged:

The first involved work of an epistemological and conceptual nature. The aim here would be:

- to make a distinction between education and school enrolment and to take steps to ensure that, in taking cultural diversity into account, no boundaries were set between formal and non-formal education;
- to carry out systematic research in order to identify the shared values disseminated across cultures;
- to explore in greater depth the concept of globalization;
- to articulate the concept of living together;
- to define bilingualism and multilingualism.

All this presupposed efforts in the political sphere to ensure:

- interdependence between States and regions of the world, within States, between regions, between ethnic and cultural groups, between the efforts of the international community and national educational policies;
- greater involvement of actors and stakeholders in education at all levels: the family, social groups, parents of pupils, target community, pupils, teachers, local, regional and national authorities;
- a high level of cooperation and coordination within the school;
- a political choice involving a move from “monolingual” schooling to a multilingual education, geared to imparting life skills and taking into account the learner’s socio-cultural context.

These provisions should be accompanied by:

- measures to develop initial and in-service training;
- strengthening of the intercultural dimension of existing curricula, especially in history, geography, civics, social studies, religious studies, ethics, mother tongues and foreign languages;
- the acquisition by students of foreign languages of skills in their mother tongue;
- increased cooperation with other sectors (social sector, youth institutions or those working with young people, institutions engaged in socio-cultural initiatives, local committees);
- the promotion of twinning among schools, pupil exchanges, support for multilateral projects and international school networks such as the UNESCO Associated Schools network;
- the production of textbooks and teaching aids, taking care to ensure that the aspects relating to society and culture were not marginalized or devalued;
- the promotion of foreign language teaching.

By way of an open-ended conclusion, it should be noted that an education that pays due regard to diversity will not simply be aimed at harmonization but rather at “dialogical” coexistence. It is a matter of being aware of the permanence of conflicts and of working through them, not bypassing or displacing them. Intercultural education and education for cultural pluralism needs to be set firmly in a critical perspective.

Workshop 4: “Language teaching and learning strategies for understanding and communication”

Introduction

The conclusions of Workshop 4 of the ICE are drawn from both the outcomes of the preparatory work and discussions that took place on Thursday, 6 September 2001. Workshop 4 was moderated by Mr Theo van Els, University of Nijmegen, Netherlands. The panellists were:

H.E. Mr. Jeffrey LANTZ, Minister of Education, Prince Edward Island, Canada;

Mr Abbas SADRI, Consultant to the Minister and Director-General of the Office of Higher Technical-Vocational Schools, Islamic Republic of Iran;

Mr Gabor BOLDIZSAR, Administrative Councillor, Ministry of Education, Hungary;

Ms Blanca Estela COLOP ALVARADO, Coordinator, Mayan Education Unit, UNESCO/PROMEM, Guatemala;

Mr Abou DIARRA, Director-General, National Education Centre, Bamako, Mali.

These conclusions take into consideration and reinforce the guidelines and reflections established at the Jomtien and Dakar Conferences and those appearing in the report of the Delors Commission.

In this sense, language learning and teaching strategies are assumed to be central in learning to live together: Language is a fundamental element to configure and express personal and group identity. It is also a very important instrument for communicating between each other. Languages teaching and learning develop and improve the capacity of listening, expression, exchange, communication and dialogue.

Dynamic of the debate

The discussion focused on three main themes, including:

1. Linguistic diversity: the different “status” of languages nationally and internationally;
2. The importance of language(s) of instruction;
3. Foreign language(s) instruction.

In the framework of the discussion on the last two themes, participants also made some contributions in a transversal way about (both mother-tongue and other) language learning and teaching strategies.

1. Linguistic diversity: the different “status” of languages nationally and internationally

Many participants recognized that they belong to multilingual countries. In many cases one language is chosen called the national or official language, occasionally two or three. The language chosen is usually spoken by a majority of the population. But, sometimes one “international” language, like English, or another “lingua franca” is adopted. This trend has been based on improving the national communication process.

Many delegations and other participants expressed the concern that these unifying trends in the language of exchange bring harm to:

the recognition of other languages that are spoken in the country, and therefore oversimplify the linguistic and cultural diversity;

the non-native speakers of that language, and give an advantage to mother-tongue speakers of the preferred language.

However, the diagnosis is even more complex when faced with the increasingly interdependent world. The languages of many states have no place in the domain of international relations. With regard to this matter, two positions were registered.

First, the moderator tried to de-dramatize the use of “global” languages in international organizations and agencies. On this point, he introduced the concept of the “domain” in which the language is used. In other words, “global” languages are normally used for specific purposes only, and in a restricted number of language-use situations. Moreover, some participants of African countries expressed the opinion that their official languages are not closely related to their cultures and they are only used to “communicate”.

Second, however, an important number of delegations and other participants stressed the dangers of granting a preferred status to only one language in international organizations. It would promote and disseminate the idea of teaching and learning only one foreign language, and might thus encourage one unilateral worldview.

Participants emphasized that the importance of the use of languages also taking into account their use in specific domains, such as the international organizations implied not only a way of communicating but also cultural or intercultural aspects.

Unfortunately, due to a lack of time, discussion on this topic could not be continued, but had certainly aroused a great deal of controversy.

2. The importance of language(s) of instruction

A great consensus was registered about the importance of making available, maintaining and reinforcing the teaching and learning of the mother-tongue. The profitability of starting primary education in the mother-tongue was also emphasized, taking into account pedagogical, social and cultural considerations:

- Then access to higher forms of thinking and other languages depends on a good mastery of the mother-tongue. So, receiving instruction in a language other than one's own is a serious handicap for learning. Pupils being instructed in a non-native language right from the start of primary school usually fall seriously behind.
- Learning in the mother-tongue re-values the cultural aspects of belonging to the community. This enables the learner to better understand the other members of his/her community and therefore promotes communication and dialogue as a way of conflict resolution in a peaceful way.
- Normally children learn their mother-tongue within their family and community, and they very often learn it in an affective way. Thus, learning of the mother-tongue at school enables learners to deepen and reflect these relationships of affectivity, of personal and community memories, leading to a better understanding of oneself. From a better

understanding and appreciation of oneself, it is possible to recognize others, their differences, and become involved with them in a frank and open dialogue leading to an understanding of each other.

Finally, participants agreed that there are neither inferior nor superior languages, that all languages can be useful in transmitting knowledge and to promote dialogue.

3. Foreign language(s) instruction

Participants expressed their support for the inclusion of foreign language(s) learning at school. They gave the following reasons among others:

- the global economy and technology require the learning of foreign languages that promote regional and international communication;
- it facilitates the mobility of students and workers;
- the learning of foreign languages enables a better understand of others and promotes dialogue to understand what is different, for example, in neighbouring countries.

Some participants asked what is the proper age to start learning foreign languages at school. For example, they had no evidence to support the advantages of early learning of foreign languages, and particularly its consequences for the learning of their own language.

Ultimately, then, faced with this complex issue confronting the international educational community and each country in particular, a thorough diagnosis is required. It is recognized that there is no point in putting forward simplistic solutions or easy formulas of universal validity that can be applied in all countries.

A number of other concerns were also expressed, but could not be discussed because of time constraints:

- the immersion method was described, but its teaching strategies were not explained.
- teaching strategies focusing on understanding require the inclusion of actions promoting the qualification of the body of teachers. (Teachers must be properly trained on language-teaching strategies.)
- it was also proposed to reactivate some UNESCO programmes about language-teaching strategies.

Finally, it is necessary to emphasize the importance of maintaining, deepening and, in some cases, extending the political dialogue at all levels, so as to promote the goal of learning and teaching languages as a fundamental key to learning to live together.

Workshop 5: “Scientific progress and science education: basic knowledge, interdisciplinarity and ethical issues”

Conducted by Mr Jean-Marie Sani, Project Leader at the Cité des Sciences, Workshop 5 gave rise to a fertile discussion, based on an introduction to the topic by the moderator and the five presentations by the panellists, dealing with the following themes:

- scientific progress and science education in Zimbabwe;
- comparisons between science curricula in the developed countries and those in the developing countries;
- reflection on curricular standards against the background of the national standard in Japan;
- individual and social contributions to science education;
- a philosophical perspective on the links between the study of science and ethics.

The speakers were respectively:

- H.E. Dr Samuel C. Mumbengegwi, Minister of Higher Education and Technology in Zimbabwe;
- Ms Doris Jorde, Senior Lecturer, Department of Teacher Education and School Development at Oslo University;
- Mr Shiegeo Yoshikawa, Department of Curricula at the Ministry of Education in Japan;
- Dr Jaak Aaviksoo, Professor at Tartu University, Estonia;
- Dr Pablo Latapi Sarre, Professor, Mexico.

The exchanges during this workshop may be grouped under four main headings:

The first brings together the ideas concerning the link between the theme of the workshop – scientific progress and science education – and the overall theme of the conference, namely learning to live together.

The second relates to the difficulties and problems with which this education was perceived to be confronted.

The third concerns ideas on science teaching, its goals, objectives and methods.

The fourth comprises the suggestions and recommendations that emerged from the discussions.

1. Link between scientific progress and science education and the need to learn to live together

Raised by the moderator when launching the workshop, the question of the link between science education and the need to live together gave rise to many observations, which can be summed up as follows:

- The universality of the sciences – not only of their content but also the methods of reasoning they promote, the way of conceiving the world they underpin, and the values of sharing, cooperation and teamwork they foster – is an important dimension of living together. The sciences bring individuals and peoples of different nationalities closer together, often transcending frontiers. They develop intellectual rigour and the need to base results on demonstrations and proof. Science education thereby helps to promote the ability to live with others.
- Science education is a factor of economic growth and development, whose absence can be an impediment to living in community.
- Access to universal scientific knowledge being a right for all, for rich and poor, for boys and girls, regardless of ethnic and religious affiliation, it is accordingly closely linked to democracy and the exercise of citizenship. Life with others can thus be jeopardized by the division in society between the learned and the ignorant.

2. Difficulties affecting the development of science teaching

- Access to scientific knowledge nevertheless remains limited in many countries and the quality of such knowledge is substandard, despite the efforts made and the reforms of science education carried out in many of them. This is due to the difficulties and the problems identified by many speakers, foremost among which is the absence of basic infrastructures, financial and human resources and a favourable cultural environment. These deficiencies are the main cause of the inequalities between the developed countries and the developing countries and between urban and rural districts in this sphere.
- The gap between the developed countries and the poor countries is reflected in the way science is actually viewed in these countries. While the sciences are highly valued by the former, they give rise to suspicion in the latter. This suspicion is rooted in the political spin-off of the sciences, namely the appropriation of the natural and human resources of Third World countries by the industrialized countries, accentuated by the recent advances in the biological sciences. The destructive effects of scientific progress, which are more widely felt in the developing countries, is another reason for this suspicion.
- The nature of scientific teaching in many countries, which remains theoretical and wedded to abstract thinking and obsolete contents, is identified as another difficulty responsible for the waning interest of young people in science studies – attested by the decreasing number of students opting for science courses, these are often considered as élitist career paths, an attitude that is reinforced by the tendency of teachers of these subjects themselves to make a mystique of the sciences.
- A further difficulty resides in the shortage of teachers of scientific subjects, a situation which is likely to persist if the status of teachers is not reconsidered by taking into account the difficulty specific to these subjects.

3. What type of science education? Directed to what goals and objectives? What methods should be used for science teaching?

Many speakers placed emphasis on the development of scientific skills as the objective of science education. Its goal being to train citizens capable of understanding the world and acting upon it, as agents of economic growth and sustainable social development, internalizing the ethical values of citizenship, science education should meet the following conditions:

- Adopt active, application-oriented methods, using the real world as the foundation of the learning process by putting knowledge to the test of reality. These methods are moreover applicable to other disciplines, not to say the apprehension of reality and problems of lived experience, since science teaching must not be aimed solely at the sciences but must be geared to life;
- Foster the development of the critical spirit necessary for intellectual discovery, developing the curiosity that is natural to a child and stimulating interest in the sciences by encouraging a precocious taste for such knowledge while explaining its universal significance;
- Streamline science curricula and adapt them to the learners' capacity to assimilate;
- Adapt scientific curricula to social contexts so as to avoid any discontinuity with reality, bringing them into line with economic changes, scientific progress and new scientific and technological discoveries;
- Link science teaching to the social and human context so as to introduce the ethical dimension into such teaching. The ethic in question should be based on the universal foundations and shared values implicit in human rights, responsibility towards others, the environment and future generations;
- Adopt a multidisciplinary and integrated approach as a means to contextualizing knowledge from the social standpoint;
- Develop the capacity to learn how to learn in association with others so as to ensure the continuity of science education;
- Increase the facilities for science education and encourage the links between school and out-of-school education, formal and non-formal learning;
- Create an environment favourable to science education, which requires among other things a broad-based scientific education fostering the emergence of a scientific and technological culture founded on a culture of innovation, one in which innovation is promoted and society develops its capacity to use the resulting innovations. The media can greatly contribute to the development of such a culture;
- A favourable environment also requires the introduction of the necessary infrastructures, ranging from basic infrastructures to equipment specific to science teaching, including school amenities;
- the new information and communication technologies, whose role was considered by most speakers as crucial to the quality of science teaching at the present time, were nevertheless called into question by some. In one speaker's view, those technologies were not essential to the learning process, which could take place without them and they neither could, nor should, replace learning in and through the real world and practical experiments.

At all events, the need to develop science education was unanimously agreed upon. For, as one speaker explained, the future of humanity depended on such education and not scientific advances alone.

4. Recommendations

The debates gave rise to the following recommendations:

Science education is in need of radical reform in the sense of greater relevance, better adaptation and increased effectiveness. Certain experiments – some fairly original – described during the discussions, including the video presentation of the Cuban experiment on raising awareness of solar energy use through the involvement of learners, could be used as a point of departure.

The technical education model should be extended as a model meeting the citizen's new needs and corresponding to the methods and strategies required for science education and education in general.

The teacher, on whom the quality of science education primarily depends, should receive high-quality, continually updated training and be given improved status.

UNESCO is called upon to play a major role in improving the quality of science education as a dimension of living together, not only by extending successful experiences, by supplying the necessary technical backstopping and expertise and by carrying out the requisite studies and experiments, but also, and above all, by mobilizing partnerships and financial resources to help countries in need to set up the essential infrastructures for high-quality science teaching.

Insofar as science teachers are best equipped to provide education to prevent and combat HIV/AIDS, the workshop appealed for them to be strongly involved in strategies to combat this scourge.

Workshop 6: Narrowing the gap between the information rich and the information poor: new technologies and the future of education

Chair, Excellencies, Ladies and Gentlemen,

I am pleased to present a summary of Workshop 6 whose central theme was on: “Narrowing the gap between information rich and the information poor: new technologies and the future of education”.

The moderator of the session was Mr Vis Naidoo, Education Specialist, Commonwealth of Learning.

The panellists were:

The Honourable Louis Steven OBEEGADOO, Minister of Education and Scientific Research, Mauritius

Dr Johanna Lasonen, Professor, University of Jyväskylä

Ms Heba Ramzy, Director, Kids and Youth Programs, Regional Information Technology and Software Engineering Centre, Egypt

Professor Alexey Semenov, Rector, Moscow Institute of Teacher Development

Mr Siva Subramanian, Educational International, Malaysia.

Introduction

The undeniable importance of education within the context of globalization requires an ongoing, in-depth discussion about the role of new technologies. Access to information worldwide today entails having and using ICT. As there is no level playing field from which societies around the world can respond to, and keep up with, the frantic pace of technological change and the effects it brings about, the emerging exclusion of many communities from the benefits of ICT is a growing concern. The imbalance of access fosters inequities among and within countries, localities and workplaces.

The role of new technologies in facilitating access to “education for all” has to be critically examined within the context of globalization. New technologies (ICTs) are often assumed to be a readily available access avenue to quality education in a variety of settings. The impact of ICT, however, may have to be judged on the basis of how effectively it will contribute to the expansion of humanity’s knowledge base all over the world.

With these contextual remarks, let’s turn our attention to some of the fundamental issues that deserve critical attention as we gauge both the possibilities and the risks intrinsic to the establishment of new technologies as a fixture of the educational landscape.

In doing so, we will examine:

- enduring challenges to be overcome;
- critical ingredients that are deemed essential to start addressing the digital divide; and
- priority action areas for a wide variety of actors.

Fundamental issues and challenges:

As part of the reality check at the outset, let's highlight some givens.

Recognize the inequalities in access to technologies, information and knowledge which give rise to the digital divide between the knows and the know-nots, a phenomenon which is not unlike the other divide between the haves and the have-nots.

Evidence shows that the digital divide exists worldwide between the global regions, between countries, and between groups and individuals within countries. Access to ICT is divided along economic, gender, ethnic and linguistic lines.

Notwithstanding the fact that all societies can be said to have a wealth of information and a rich knowledge base, be mindful who structures technologically-transmitted information, who owns it, who decides how it ought to be used and circulated.

Keep in mind that despite improvement, traditional illiteracy remains a reality in many parts of the world and that resources are lacking just to address this reality.

To be aware that access to infrastructures is uneven and once again determined by the availability of economic means.

Opportunities:

Notwithstanding these limitations, the benefits of ICT in education cannot be underestimated. With adequate access, the recourse to ICT can:

At an individual level:

- maximize the exchange of ideas and creative projects across boundaries.
- unleash the innovative potential of the human mind and put this creativity at the service of problem-solving schemes that can be shared as exemplary practices and transferred into a variety of contexts.

At a collective level:

- lend itself to the multifaceted networking of users in many places and as such, contribute to the building of communities of learners and problem-solvers across national, cultural, social, and economic boundaries.
- assist in the education of a global citizenry through exposure to the varied and multifaceted perspectives of other communities.

Priority areas:

That said, the potential for ICT can be tapped into and if the new technologies are to be successfully integrated into education for all, the following have to be taken into consideration:

At the national level:

- the availability of new technologies has to be organized through policies and programmes which are meant to maximize access to the public in general. This includes:

- strengthening and extending the ICT infrastructure;
- expanding ICT access through public institutions;
- upgrading citizens’ and workers’ skills;
- making available subsidized ICT access in schools and in other public sites;
- ensuring that ICT is accessible to underprivileged groups through open sites of access.

Resources – software tools – must be put at the disposal of users at no cost so that the support tools that are essential for the training of a technologically and information literate population are available on an equitable basis.

School level:

The key learning competencies of learners have to be clearly articulated so that curricular contents can be made more relevant. As well, learning methods have to be updated with a view to making them compatible with the imperatives of e-learning.

Pre-service and in-service education of teachers:

Make sure that both incoming teachers and experienced teachers are well prepared so that there can be an effective integration of new technologies into the delivery of education. Newly designed or adapted pedagogical methodologies – including subject-based methodologies – have to be explored, tapped into, and implemented if the education of learners is to occur in an effective way.

Finally, learning materials have to be provided in multi-media formats so that knowledge can be imparted through a variety of modes.

Key messages

Take a planned, holistic approach to policies and strategies to cover not only the integration of technologies into education but also to examine some of the telecommunication issues that need to be addressed.

Build on multi-party partnerships – under the lead role of public institutions and including community-based organizations – to plan, design, and implement key initiatives and sustain them over time.

Invest resources in capacity-building so that a variety of users can become not only technologically proficient but also information literate – that is, be able to put received information under the scrutiny of a lucid and discerning lens.

Proceed with a strategic deployment of resources – based on a carefully designed needs assessment and with focused, complementary actions that are likely to have a systemic impact.

Build on what already exists, including more traditional technologies of learning (i.e. books, radio, audiovisual equipment) so that the potential of technology can be harnessed to expand the learning rather than replace it – beware of tabula rasa pseudo-solutions that usually end up eradicating the past and present without any safety net and no transition measures.

Keep in mind that quality of e-learning depends on wide access to ICT and support mechanisms as well as the critical engagement of teachers and learners in the schools and in the classroom.

Education for all is the priority. New technologies should be used to support the established curricular policies and programmes, as well as school management and administration processes. It is therefore imperative that new technologies be customized to the particulars of local contexts.

There is room for an expanded role for UNESCO to assist:

- Countries in the development of their ICT-in-education policies;
- In promoting the integration of new educational technologies on an equitable basis;
- In documenting and disseminating key requirements and competencies for e-learning;
- In evaluating and monitoring the quality of educational software.

Conclusion

In addressing the challenges to narrow the gap between the information rich and the information poor, countries have made substantial progress and undertaken innovative projects. These examples of successful practices should serve as models on which to draw.

Final remarks

Chair, Excellencies, Ladies and Gentlemen,

This concludes the summary report for Workshop 6 on: “Narrowing the gap between the information rich and the information poor: new technologies and the future of education”. I thank you for your attention.