

## Education and ICTs: Current Legal, Ethical and Economic Issues

Zeynep Varoglu and Cédric Wachholz, UNESCO

This article examines the legal, ethical and economic issues relating to education and the use of new information and communication technologies (ICTs). It starts with an analysis of the current legal agreements governing trade in goods and services related to education and ICTs, followed by the ethical debates arising from the legal frameworks. It then explores the role of the private sector and questions the role of education - a public good or a commodity. For the purposes of this article, ICTs have been defined as radio, television, computer hardware and software, and the Internet. The discussion concentrates solely on the provision of educational content and ICTs, but does not focus on issues of connectivity (e.g. telecommunications).

### Legal Agreements – Emerging Trends

Until the mid 1990s, inter-governmental forums like the World Intellectual Property Organization (WIPO) and UNESCO dealt on an international level with questions of intellectual property (IP) and copyrights. The idea of guaranteeing Intellectual Property Rights (IPR) originates from the recognition that there is public interest in ensuring IPR as it promotes innovation and progress in the arts, science and technology. Private economic interests, issues of individual ownership (of the owners and/or creators of IP), issues concerning moral values (of IP) and public interest in gaining access to information have largely influenced the development of IP conventions. The WIPO has been relatively open to the socio-cultural dimension of developments in the field of ICTs and has in the past offered an arena within which the interests of developing nations could be voiced.<sup>1</sup> This is reflected in conventions designed to ensure the financial remuneration of authors of IP (Paris Convention for the Protection of Industrial Property 1883 and the Bern Convention for the Protection of Literary and Artistic Works 1886), and to protect the moral rights of IP authors against modification without the creator's consent (The 1928 Revision of the Bern Convention).

The public, especially educators and learners, has a critical interest in preserving the copyright exemptions granted in the above conventions. These exemptions ensure the freedom of expression, access to information and cultural goods, and the dissemination of knowledge through education, research and libraries.<sup>2</sup> Today, however, technological and legislative changes that have been enacted by the information society threaten to disrupt the delicate balance, which has been struck between the rights and interests of individuals, indus-

tries, and societies. Copyright is expanding with regards to the items protected, but also with regards to the area and the period of protection.<sup>3</sup>

Industry is moving quickly to secure the distribution of their products. In addition to the copyright, distributors use new contracts and technological devices for the protection of their goods. Electronic licenses, which users can accept with a simple mouse-click, often forbid the user's exercise of the above-mentioned copyright exemptions, which are nevertheless recognized by law.<sup>4</sup> In addition, new technological barriers to the public domain have emerged along with different electronic management systems. These tools make it possible to license access and to monitor on-line utilization of works with contractual and technological protections. Another example of the move from a system intended to protect creative works towards a system meant to protect private investment is the case of the European database protection directive. The copyright protection, which covers the original architecture of the database, is supplemented by a protection of the content itself. Consequently, the database producer can prohibit retrieval and reutilization of material - including basic information - for a 15-year period.<sup>5</sup> This amounts to granting a monopoly over a collection of information and threatens the public access to information. Another is the recent increase of the period covered by copyright. In many countries, notably in Europe and the United States, the copyright period has been extended from 50 to 70 years after the creator's death.

The increased emphasis on profit has affected the development of ICTs for education; legal negotiations have resulted in the General Agreement on Trade in Services (GATS) and the agreement on Trade-Related Intellectual Property Rights (TRIPS) under the GATT/WTO negotiations. The TRIPS

was part of the discussions held by the General Agreement on Trade and Tariffs (GATT) negotiating forum. The GATT was replaced by the World Trade Organization (WTO) in 1995. In the context of the present study, the GATS mainly relates to the development of educational services, and the TRIPS to educational content.

The GATS<sup>6</sup> (concluded in 1994) represented the first open discussions on promoting international trade in education services as if these were everyday consumer goods.<sup>7</sup> GATS relates to the provision of education services in four areas:

1. Consumption abroad by citizens of a member country (e.g. taking a course abroad);
2. Cross-border supply of a service (distance education);
3. The commercial presence of a service supplier from member country A in the territory of member country B (foreign universities); and
4. The presence of natural persons from country A supplying a given service in country B (e.g. foreign teachers in a country).

The GATS is an important step in a process of 'opening' markets for services (including education) and the Millennium Round of GATS negotiations is expected to 'bring forward' the debate on the privatization of education. Only 40 of 143 Member States of WTO have agreed to fully implement GATS in the field of education.<sup>8</sup> The GATS is therefore not fully operational in the field of education, but its implementation is indicative of the trend towards international competition in national education markets.

The TRIPS relates to educational goods, and includes technology-related intellectual property such as computer software.<sup>9</sup> Computer software areas protected under TRIPS include the prohibition of exact or near-exact copying of program code and certain aspects of user interfaces.<sup>10</sup> A European Union Directive on databanks aims to bring digital information sources under the provisions of a copyright agreement, meaning that many products in the public domain come under IPR protection once they are incorporated into electronic databanks. In 1996, a lobby representing the interests of private companies such as Microsoft, Apple and IBM proposed an article that would imply a 'pay per view' system for Internet resources. This initiative was halted by a lobby that included Netscape, libraries and Internet Service Providers who argued that such an act would "undermine the attractiveness of the Net and seriously hamper free access to information."<sup>11</sup>

Critics stress that TRIPS opens the way for private businesses to appropriate public information and represents a danger to equitable participation in the emerging knowledge society. These agreements reflect a bias towards trade interests of developed countries over national socio-cultural aspi-

rations. As stated by UNRISD, "In sum the regime threatens to negate the possibilities that cyberspace offers for a new global forum, and to reduce this space to a marketplace where a controlled volume of ideas will be traded."<sup>12</sup>

### WIPO - WTO Debate<sup>13</sup>

The inclusion of TRIPS in IPR discussions in the GATT/WTO negotiations was a source of discord between the numerous participating developed and developing countries regarding the benefits of IPR and on the appropriate forum for discussions/negotiations on this issue.

One element of this debate is the role of WTO vis-à-vis that of World Intellectual Property Organization (WIPO) as the de-facto lead organization for IP matters. Many developing countries continued to push for WIPO, where they were numerically superior to developed countries, as the lead organization in IP matters. Special transition periods to phase TRIPS commitments have been proposed for several developing and least-developed countries. During the 1980s the USA began to view GATT/WTO as the most promising forum for obtaining international intellectual property protection, because it offered a dispute resulting mechanism that could be used for IP matters.

In this framework, developed countries argue that IP protection promotes more rapid economic growth and development, while countries with less IP protection have slower evolution in size and complexity of their local markets. Therefore the argument follows that reforms of laws are a precondition to continued economic growth. Benefits cited for stronger IP protection, aside from reduced enforcement and transaction costs, include increases in: domestic investment and R&D; flow of new products, technology transfer; improvements in local knowledge and enhanced value of patents.

Numerous developing countries<sup>14</sup> fear that protection of products and technology would enable large multinationals to secure global monopolies and thereby charge exorbitant prices for their goods. Arguments raised against increased enforcement of IP protection include the risks of: under-utilization of inventions (patents may simply be used to prevent others from making or selling the product in the national market); scarcity of essential commodities (many countries believe that certain products and technologies should not be included in the intellectual property protection regime); reduced autonomy (the resistance to the establishment of a

**Only 40 of 143  
Member States of  
WTO have agreed to  
fully implement  
GATS in the field of  
education.**

uniform global standard); and the lack of stimulus for 'local specific' products (most patents in developing countries are issued to foreigners).

Some developing countries express more interest in technology transfer than in the encouragement of domestic innovations and appropriating new technologies. The fundamental premise of private property rights in industrialized countries - that knowledge is a private capital - is challenged by a number of developing countries. It was argued that in some countries certain forms of intellectual property are viewed as a public good and that some cultures are hostile to any notion that knowledge is a private capital.

### The Private Sector as a New Education Protagonist

The TRIPS and GATS legal agreements explicitly open the doors for multinational companies to fill education market niches and to compete with traditional institutions. The integration of ICTs and education is becoming both a key factor for global economic success and a big business in itself. UNDP (1999) highlights the direct link between control over information and economic returns.<sup>15</sup> As stated in its 1999 Human Development Report, more than half of the GDP in the major OECD countries is now 'knowledge-based'. It is at present impossible to support this general statement with a comprehensive assessment of the economics of ICTs and education. There are, however, a series of indicators that point to the increasing economic significance of the ICT sector in international economies and some national economies. Important variables include the contribution of the ICT industry to the GDP of national economies and the role that ICTs play in overall business investments.<sup>16</sup> This section examines the growth of the Internet-based distance/online learning trend, and then provides an analysis of cost-effectiveness of the different ICT-based learning options as a whole.

The private sector is very interested in getting a larger share of what it calls the education market, where global public spending tops one trillion dollars.<sup>17</sup> This figure represents the costs of over 50 million teachers, one billion pupils and students and numerous educational establishments. Education businesses (for-profit schools, publishers, school supply companies, corporate training firms, etc.) generate nearly US\$100 billion in revenue annually.<sup>18</sup>

There is, however, a notable lack of reliable information concerning the scope and growth of this education market, particularly with regard to the e-learning market.<sup>19</sup> This phenomenon is largely explainable by the fact that hardware, software, training and telecommunication companies, corporate consulting firms, start-ups, franchises, etc. have an important financial interest in forecasting exponential growth in

this field. These groups tend to present the complete technological makeover of education as a matter of urgency.

It is clear that investors are pouring ever-larger sums of start-up capital into education businesses, a market that is currently still US-centric. The education and training industry is now North America's second largest, accounting for nearly 10 percent of its GDP. It is also the fifth largest service export at US\$8.5 billion in 1997.<sup>20</sup>

Almost all investment firms predict exponential growth, especially for the online-distance education (e-learning) market. Speculations are impressive: 'We expect an online training market of US\$4 billion in 1999, growing at 40 percent annually (Merrill Lynch); it will exceed \$7 billion by 2002 (IDC); it will nearly double in size every year through 2003, reaching approximately \$11.5 billion by that time (WR Hambrecht+CO); \$46 billion by 2005 with 50 percent to 85 percent gross margins. (Piper Jaffray)'.<sup>21</sup>

In contrast, government publications (U.S. Department of Education;<sup>22</sup> Australian Department of Education)<sup>23</sup> state that definitive figures on the size and growth of the industry are not available. Some reports<sup>24</sup> cite examples wherein large companies finance studies by small 'research institutes', which conveniently forecast exponential growth.

### Education as A Public Good or As A Commodity?

The development of the education market calls into question the role of education: is it a public good or a commodity?<sup>25</sup> What is the 'added value' of maintaining education as a public good, assured by the State, especially in the cost-intensive field of ICTs? How can the involvement of private industry, developing education as a commodity 'for profit' be beneficial to the pupil? Where and how can educational content and services benefit best from the current growth of ICTs?

Traditionally, the state assures the financing, provision, administration, and regulation of educational activities. In principle, the advantages of this system of 'education as a public good' are: equitable access to education; quality education for all (through the redistribution of resources, coherent methodologies and the harmonization of curricula etc.);<sup>26</sup> the promotion of civic responsibility and a common set of values (education that empowers people to contribute effectively to the democratic development of the country); and the preservation of cultural diversity (promotion of a common language and multilingualism).

Nevertheless, public education systems are often hampered by difficulties in realizing their full potential due to factors such as: severe budgetary constraints affecting quality and access;<sup>27</sup> long-term planning objectives maintained by rigid,

top-heavy bureaucratic structures that restrict the provision of up-to-date ICT training options;<sup>28</sup> and lack of a clear strategy for linking national education policy objectives to global challenges arising from international diplomatic negotiations (e.g. the GATS which effects national education systems, but is decided in the international arena).

The provision of educational goods and services by private industry represents a means to meet some of the challenges facing public education systems, discussed above. For example, a reduction of education costs and an increase in the efficiency of educational programs seem possible with increased competition between education suppliers.<sup>29</sup> Ideally, private industry would be capable of providing custom-tailored 'just-in-time' education based on good analysis of industry needs. It could primarily facilitate on-line education content (vs. learner) mobility and access to the latest technologies. In the past, private providers have also improved teaching quality in certain programs through the training and evaluation of teaching staff as well as the recruitment and support of part-time staff with both practical and teaching expertise.<sup>30</sup>

However, greater involvement of private industry in education brings risks that threaten the main objectives of public education systems. Limited resources and lack of competition between suppliers may adversely affect quality, access, and price of educational services, as marginalized groups do not constitute a significant 'target' market.<sup>31</sup> In addition, the objective of private companies is not to develop autonomous, critical future citizens, but workers and consumers. Other risks include increased standardization/accluturation processes; dominance of foreign teaching models; lack of appropriate educational content in local languages; threats to teachers' working conditions (e.g. job security); and increased dependence on foreign educational resources. The

curtailment of nation-state sovereignty also carries certain risks, when questions concerning social development are being transferred to WTO and its arbitration procedures. Likewise, new e-learning providers are not bound by the norms and ideals of traditional higher education and thus might fail to link research and teaching, and to provide community service, a comprehensive curriculum, or academic autonomy and control.

A serious risk of using public funding to support national education and ICT development is that it may only nurture an illusion of egalitarianism, while differences in access to computer communication in fact reinforce existing inequalities within the countries. Development agency investment in this sector has also been criticized as principally helping the communications industries penetrate new markets and set up new dependencies. The ICT development agenda, directed by powerful pressure groups, is driven by supply rather than by demand, and is currently dominated by western educational models and market leaders. Inherent risks in this context include the creation of monopolies of brand-name universities and celebrity professors, concentration of the ownership of content and communications system, as well as a shortage of affordable, high quality, relevant software in critical sections of the education market.<sup>32</sup>

Though private industry, motivated by the growing ICT and education market, has the means to counter difficulties faced by public education systems in specific fields (e.g. ICT training classes for corporate management) and to contribute to the improvement of services, it might also weaken the last inclusive fortresses, which form critical citizens on all levels - education systems. Each country needs to analyze these developments critically, to forecast risks and formulate strategies that will take into account the interests of future generations.

<sup>1</sup> Hamelink, Cess J.: Chapter 1, Human Development, in: World Communication and Information Report 1999-2000, cf. p. 43. Available at: <http://www.unesco.org/webworld/wcir/en/report.html>.

<sup>2</sup> Dusollier, Séverine; Poulet, Yves; Buydens, Mireille 2000: Copyright and access to information in the digital environment. A study prepared for the UNESCO congress Infoethics 2000, p. 4. Available at: [http://webworld.unesco.org/infoethics2000/documents/study\\_poulet\\_en.rtf](http://webworld.unesco.org/infoethics2000/documents/study_poulet_en.rtf).

<sup>3</sup> Dusollier, Séverine; Poulet, Yves; Buydens, Mireille 2000: Copyright and access to information in the digital environment. A study prepared for the UNESCO congress Infoethics 2000, p. 4. Available at: [http://webworld.unesco.org/infoethics2000/documents/study\\_poulet\\_en.rtf](http://webworld.unesco.org/infoethics2000/documents/study_poulet_en.rtf).

<sup>4</sup> Dusollier, Séverine; Poulet, Yves; Buydens, Mireille 2000: Copyright and access to information in the digital environment. A study prepared for the UNESCO congress Infoethics 2000, p.19. Available at: [http://webworld.unesco.org/infoethics2000/documents/study\\_poulet\\_en.rtf](http://webworld.unesco.org/infoethics2000/documents/study_poulet_en.rtf).

<sup>5</sup> Dusollier, Séverine; Poulet, Yves; Buydens, Mireille 2000: Copyright and access to information in the digital environment. A study prepared for the UNESCO congress Infoethics 2000, p. 7. Available at: [http://webworld.unesco.org/infoethics2000/documents/study\\_poulet\\_en.rtf](http://webworld.unesco.org/infoethics2000/documents/study_poulet_en.rtf).

<sup>6</sup> Education International Public Services International, The WTO and the Millennium Round: What is at stake for Public Education? EI/PSI joint Publication.

<sup>7</sup> The two main principles of the GATS are the most favored nation principle (all GATS signatories get favorable treatment from each other) and national treatment (foreign companies in market of a country get the same favorable treatment as national companies in operating in the

same market).

<sup>8</sup> Education International and Public Services International: The WTO and the Millennium Round. What is at stake for Public Education? Common concerns for workers in education and the public sector, Available at: <http://www.ei-ie.org/main/english/index.html>.

<sup>9</sup> Gorlin, Jacques J. (1993) Update on International Negotiations on Intellectual Property Rights in Wallerstein, Mitchel, Moge, Mary Ellen and Roberta A. Schoen (eds) Global Dimensions of Intellectual Property Rights in Science and Technology, National Academy Press, Washington DC, p.175.

<sup>10</sup> Samuleson, Pamela (1993), A Case Study on Computer Programs. In Wallerstein, Mitchel, Moge, Mary Ellen and Roberta A. Schoen (eds.) Global Dimensions of Intellectual Property Rights in Science and Technology, National Academy Press, Washington DC p.295.

<sup>11</sup> United Nations Research Institute for Social Development (UNRISD ) Info Tech project: ICTs and Social Development: the Global Policy Context p.10.

<sup>12</sup> United Nations Research Institute for Social Development (UNRISD ) Info Tech project: ICTs and Social Development: the Global Policy Context p.10.

<sup>13</sup> For the following paragraph, cf. Gutterman, Alan S. and Brown, Robert (Editors), Intellectual Property Laws of East Asia, Singapore, Sweet & Maxwell Asia 1997 Chapter 1, Intellectual Property in the Global Marketplace.

<sup>14</sup> The phasing of TRIPS agreements have been promoted for developing countries and in particular for LDCs. (Gutterman, Alan S. and Brown, Robert (Editors), Intellectual Property Laws of East Asia, Singapore, Sweet & Maxwell Asia 1997, Chapter 1, Intellectual Property in the Global Marketplace).

<sup>15</sup> The growing significance of the ICT sector in international economies (and some national economies) are indicated by the contribution of the ICT industry to the GDP of national economies, as well as by the role that ICTs play in overall business investments, cf. UNESCO 1999, World Communication and Information Report 1999-2000, p. 34.

<sup>16</sup> UNESCO 1999, World Communication and Information Report 1999-2000, p. 34.

<sup>17</sup> Education International and Public Services International: The WTO and the Millennium Round. What is at stake for Public Education? Common concerns for workers in education and the public sector, p. 2 Available at: <http://www.ei-ie.org/main/english/index.html>.

<sup>18</sup> It is not clear if this is the revenue for the U.S. or the entire world, in: Peter Stokes 2000, e-learning: Education Businesses Transform Schooling, White Paper prepared under contract to the American Institutes for Research on behalf of the U.S. Department of Education, Office of Educational Technology, p. 5.

<sup>19</sup> E-learning is here defined as the use of connected (inter-, intranets) computers in education to provide programs that deliver instruction, to facilitate communication between learner and tutor, or to enable students to have access to remote sources of information.

<sup>20</sup> Stephen P. Heyneman (1999), How large is the International Market for Educational Technologies and Services? *TechKnowLogia*, November/December 1999, p 1. [Available at: <http://www.techknowlogia.org>]

<sup>21</sup> Cross, Jay (2000): The e-learning FAQ. [Available at: <http://www.internettime.com/forum/faq.htm> on 21/7/00], p. 9.

<sup>22</sup> Peter Stokes 2000, e-learning: Education Businesses Transform Schooling, White Paper prepared under contract to the American Institutes for Research on behalf of the U.S. Department of Education, Office of Educational Technology.

<sup>23</sup> Australian Department of Education (2000): The Business of Borderless Education. Evaluations and Investigations Programme, Higher Education Division. Department of Education, Training and Youth Affairs, 313 pages.

<sup>24</sup> E.g. Cordes, Colleen and Miller, Edward (ed.): Fool's gold: a critical look at computers in childhood. Alliance for Childhood, p. 98.

<sup>25</sup> Education is first of all a human right and it will remain a public good, because education has substantial externalities. This means that the public has a substantial interest in offering every individual a basic education. UNDP 1999, Global Public Goods: International Cooperation in the 21<sup>st</sup> Century, edited by Inge Kaul, Isabelle Grundberg, and Marc A. Stern; Oxford University Press. Executive Summary, [http://www.undp.org/globalpublicgoods/Executive\\_Summary/executive\\_summary.html](http://www.undp.org/globalpublicgoods/Executive_Summary/executive_summary.html).

<sup>26</sup> Philippe Quéau 2000: Governing the Global Knowledge Society, p.7, [http://www.unesco.org/webworld/points\\_of\\_views/queau\\_9.shtml](http://www.unesco.org/webworld/points_of_views/queau_9.shtml).

<sup>27</sup> The increasing demand for lifelong education opportunities results in the limited resources often being inefficiently and inequitably distributed towards higher education, though this area has lower social rates of return than investments in primary and secondary education.

(Gerver Torres and Sarita Marthur 1995: The Third Wave of Privatization. The World Bank, Washington, D.C., p. 9.

<http://www.worldbank.org/education/economic/private/publications/thirdwave.htm>, accessed on 7/26/00).

<sup>28</sup> Private: short term revenue versus public sector: longer term resource planning; also tension between curriculum requirements and flexibility brought about by educational software; software quality criteria change fast, bureaucracy has difficulties to follow. OECD/CERI Project (1999), ICT and the quality of learning, Educational Multimedia Software Quality Group, Record of meeting of experts, 15-16 April 1999, point 1.6.

<sup>29</sup> The involvement of the private sector might thus help to overcome budgetary constraints effecting the public sector.

<sup>30</sup> Australian Department of Education (2000): The Business of Borderless Education. Evaluations and Investigations Programme, Higher Education Division. Department of Education, Training and Youth Affairs, p. XIII.

<sup>31</sup> Private industry focuses on people and educational services with promises of high return on investments rather than equity and social redistribution. ICTs could have developed devices based on sound, touch, images or symbols which do not require literacy, but markets are the driving force for technological developments, and the needs of illiterates in the developing world were, and still are, completely ignored (UNESCO 1999, World Communication and Information Report 1999-2000, p. 33).

<sup>32</sup> OECD/CERI (1999), Working paper by the OECD Secretariat on Educational Multimedia Partnership, 22/6/1999, p. 1.