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Entangled Media Ecologies: The Nexus of Education and Mass Communication from the Perspective of UNESCO (1945–1989)

Abstract: This chapter posits that textbooks, radio, TV, film and computers served as interconnected elements in UNESCO's educational mission. By looking at these media ecologies, the chapter connects research into the history of education with research into UNESCO's media policies. This conceptual history approach demonstrates that education is not only based on ethical norms, teaching and learning but is also connected to technological properties that offer access to knowledge and its acquisition. In addition, when studying UNESCO, it is evident that the organization's education-technology nexus is also closely linked with the media and publishing industries. UNESCO's initiatives testify to the organization's commitment to innovating education by blending old and new technologies. The chapter therefore highlights not only changes but also continuities when it comes to educational technologies and their promotion. Each type of educational medium had its place and contributed to UNESCO's mission to become a mediator and world leader in education.

Keywords: media ecologies; multimedia environments; media policies; education-technology nexus; UNESCO.

Introduction

In the field of history of education, numerous studies are devoted to the history of educational media and the evolution of educational technologies.[1] This chapter focuses specifically on the implications and conceptual background of the technolo-

1 E. g., Larry Cuban, *Teachers and Machines: The Classroom Use of Technology* (New York and London: Teachers College Press, 1985); David H. Jonassen, ed., *Handbook of Research for Educational Communications and Technology*, 2nd ed. (London: Laurence Erlbaum, 2004); Paul Saettler, *The Evolution of American Educational Technology*, 2nd ed. (Greenwich: Information Age Publishing, 2004); David W. Kritt and Lucien T. Winegar, eds., *Education and Technology: Critical Perspectives, Possible Futures* (Plymouth: Lexington Books, 2007); J. Michael Spector et al., eds., *Handbook of Research on Educational Research and Technologies*, 3rd ed. (New York: Routledge, 2008); Bill Ferster, *Teaching Machines: Learning from the Intersection of Education and Technology* (Baltimore, MD: John Hopkins University Press, 2014).

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gy-driven idea of education developed by the United Nations Educational, Scientific and Cultural Organization (UNESCO), which had already taken shape before the 1957 Sputnik shock. By the late 1940s, eager to establish strong bonds between mass communication and education, UNESCO had already begun to establish a powerful internal apparatus for media policy which soon collaborated closely with its Education Division. From the late 1970s, UNESCO set out to establish a "New World Information and Communication Order" to further stabilize its global role in education and media policies.

This chapter posits that textbooks, radio, TV, film and computers served as interconnected elements in UNESCO's educational mission. By looking at these specific technological ecologies of education, I connect research into the history of education with research into UNESCO's media policies. This conceptual history approach demonstrates that education is not only based on ethical norms, teaching and learning but is also connected to technological properties that offer access to knowledge and its acquisition. In addition, when studying UNESCO, it becomes evident that the organization's education-technology nexus is also closely linked with the media and publishing industries.

One of the core missions of UNESCO was to eliminate educational imbalances and to harness technological developments in mass communication and educational reforms to achieve the goal of changing attitudes and minds. Until the end of the 20th century, UNESCO's mission was focused on cooperation, solidarity and peace, fostering values rooted in Western philosophical traditions and beliefs.

UNESCO has always seen access to communication technologies for education (whether distance or in-person learning) as crucial, not only to overcome social, technological and economic divides but also to cope with the effects of various crises including epidemics and pandemics.[2] To this day, UNESCO envisions education as essential for the transformation of a fragile and uncertain world; it explicitly and uniquely connects issues of communication technology and education, focusing in particular on various media and devices.[3]

This chapter suggests that UNESCO-supported distance education via radio, film, television and computer-based learning and teaching should be analyzed as a series of entangled media ecologies designed to support humans and societies in their development by offering access to knowledge and the wider (Western) world. Many of UNESCO's initiatives testify to the organization's ongoing commitment to innovating education by blending old and new technologies. Educational

2 See "Learning through Radio and Television," UNESCO, last modified April 21, 2022, https://en.unesco.org/news/learning-through-radio-and-television-time-covid-19.

3 See e. g., the following article that appeared in the *UNESCO Courier* at the beginning of the COVID-19 crisis: "Radio: Stronger and More Vibrant than Ever," https://en.unesco.org/courier/2020-1.

media, including textbooks, continue to co-exist rather than replacing each other; current multimedia and multimodal learning environments include diverse channels of communication and interaction among learners as well as between learners and teachers. The chapter therefore highlights not only changes but also continuities when it comes to educational technologies and their promotion. Each type of educational medium had its place and contributed to UNESCO's mission to become a mediator and world leader in education.

To better understand UNESCO's specific way of connecting education and mass communication, I will first look at its media policies after the Second World War. Viewing educational media as interconnected technologies, I will then focus on the educational and technological components of UNESCO's involvement in textbook revision and education by means of radio, television and film. Finally, I will examine how UNESCO supported the spread of computer-based learning technologies. I will also offer a brief overview of how UNESCO promoted its work, mission and vision through word, sound and (moving) images in order to engineer and achieve global and local consent.

UNESCO's Media Policy

UNESCO was founded in 1945 as a specialized agency of the United Nations (UN). Its media and educational policies were established within the wider context of the Universal Declaration of Human Rights adopted by the United Nations in December 1948. UNESCO aimed to foster education, cultural exchange and the circulation of knowledge based on universal ethical standards that in turn would enable the "translation" and "communication" of human rights in politically, culturally and economically diverse world regions.

The Declaration of Human Rights originated from ideas of the European Enlightenment and from Anglo-Saxon liberal thinking and inherent anthropocentric world views that were based on human freedom and sovereignty without distinction of race, sex, language or religion.[4] Accordingly, article 19 of the Declaration of Human Rights also specifies that "Everyone has the right to freedom of opinion and expression" and that "this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers."[5] Over time UNESCO developed a specific

4 UNESCO Constitution, November 16, 1945, plus amendments, https://www.unesco.org/en/legal-affairs/constitution.

5 See https://www.un.org/en/universal-declaration-human-rights/.

style of thought that was very much based on its claim to be a world leader in education and a moral authority that represented universal values. UNESCO shared this aspiration for moral and cultural world leadership with US cultural policies. During the Cold War, one of the most prominent examples of North American cultural diplomacy – centered around what was perceived in the US at that time as universal human values – was the traveling exhibition The Family of Man, first shown at the Museum of Modern Art in New York in 1955.[6] UNESCO's Human Rights Exhibition, which opened at the Musée Galliéra in Paris in October 1949, is said to be the forerunner of The Family of Man. It also traveled the world as an example of cultural diplomacy and claimed moral supremacy.[7]

UNESCO's Human Rights Exhibition showed and propagated the results of a long-lasting process of canonization that silenced the controversial debates, disagreements and fundamental intellectual differences that had developed around the United Nation's Human Rights Project and a related UNESCO survey. In "Letters to the Contrary: A Curated History of the UNESCO Human Rights Survey," edited by anthropologist Mark Goodale, we find an abundance of survey responses and related historical documents that testify to the diversity of human values among intellectuals around the globe.[8] The survey was conducted between early 1947 and late 1948 and the idea of human rights at the time was "associated by its critics with a small cluster of Western national traditions (notably the American and French)" and "viewed as the unmistakable normative underpinning of capitalism."[9]

UNESCO's rights-based approach has emphasized freedom as a universal central value of humanity. However, the idea of freedom has also underpinned and justified national policies, armed conflicts, the sovereignty of empires and colonial powers, the exclusion of indigenous knowledge and experience, geopolitical imbalances, and national borders – all of which represented obstacles to accessing un-

6 Eric J. Sandeen, *Picturing an Exhibition: The Family of Man and 1950s America* (Albuquerque, NM: University of New Mexico Press, 1995); Jean Back and Victoria Schmidt-Linsenhoff, eds., *The Family of Man 1955–2001 – Humanism and Postmodernism: A Reappraisal of the Photo Exhibition by Edward Steichen* (Marburg: Jonas, 2004); Karin Priem and Geert Thyssen, "Puppets on a String in a Theatre of Display? Interactions of Image, Text, Material, Space and Motion in The Family of Man (ca. 1950s–1960s)," *Paedagogica Historica* 49, no. 6 (2013): 828–845.

7 Stefanie Kesteloot, "Mediating the Rights to Education: An Analysis of UNESCO's Exhibition Album on Human Rights and Its Global Dissemination in 1951," in *Media Matter: Images as Presenters, Mediators, and Means of Observation*, ed. Francisca Comas Rubí, Karin Priem and Sara González Gómez (Berlin: De Gruyter, 2022), 141–166.

8 Mark Goodale, ed., *Letters to the Contrary: A Curated History of the UNESCO Human Rights Survey* (Stanford, CA: Stanford University Press, 2018).

9 Goodale, *Letters to the Contrary*, 8.

biased information and education.[10] Additional barriers for participation in what UNESCO called the "free flow of information" were import and export regulations and the need for technological know-how.[11] In a nutshell, UNESCO's fight for the "free flow of information" can be linked to political liberalism, capitalism and ideas of progress and growth, all of which are deeply rooted in US policies and the country's ambition to achieve cultural, economic and technological supremacy in the name of freedom.[12]

By the late 1940s, UNESCO had already begun to set up a powerful internal apparatus for media policy which soon collaborated closely with its Education Division.[13] From the late 1970s, UNESCO had set out to establish a "New World Information and Communication Order."[14] This initiative let to several crises between UNESCO and its member states in the East, the West and the so-called Global South. The conflicts highlighted lingering disagreements about cultural, technological and political control that were rooted to a certain extent in the Cold War, globalization and decolonization. Hence, UNESCO was forced time and again to adjust its media policies and ethics in the field of education in order to maintain its leadership role and to simultaneously satisfy its politically, economically and culturally diverse member states, many of which were on the cusp of emancipation from Western cultural hegemony.

UNESCO's focus was not only on balancing out technical, political and economic differences between countries; it also had to be flexible in its assumed role as a moral authority in defining universal ethical standards for media production, education, the dissemination and consumption of knowledge, and the work of the press.[15]

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10 For a critical analysis of the political pursuit of human freedom see Pierre Charbonnier, *Affluence and Freedom: An Environmental History of Political Ideas*, trans. Andrew Brown (Cambridge: Polity Press, 2021).

11 Andreas Fickers and Pascal Griset, eds., *Communicating Europe: Technologies, Information, Events* (London: Palgrave Macmillan, 2019).

12 See Herbert I. Schiller, "Genesis of the Free Flow of Information Principles: The Imposition of Communications Domination," *Instant Research on Peace and Violence* 5, no. 2 (1974): 75–86; Layire Diop, "Free Flow of Information and Development," preprint (2019): 2, https://doi.org/10.13140/RG.2.2.27372.92806.

13 See Karin Priem and Eng Sengsavang, "Media Technologies for a Better World: UNESCO's Ethical Framework for Communication Infrastructures and Uses of Media after the Second World War," in *Framing Communication Infrastructures (1950–2020): Discours et imaginaires | Diskurse und Vorstellungen,* ed. Vlad Atanasiu et al. (Zurich: Chronos, 2022), 71–90.

14 Kolya Louis Abramsky, *The New World Information and Communication Order: An Historical Window Onto the Uneasy Nexus Between Archives, Records, Communication, and Information; and, Between Governance and Geopolitics* (London: London University College, 2019).

15 See Priem and Sengsavang, "Media Technologies for a Better World."

When looking at UNESCO we find evidence that education is not only based on ethical norms, didactics and a westernized understanding of learning and teaching rooted in the belief in supremacy of human intelligence; it is also connected to anthropocentric world views and related political, economic and technological approaches to the acquisition of knowledge.[16] In addition, when studying UNESCO's engagement with educational media after the Second World War, it becomes obvious that the education-technology nexus is also closely linked to the media production and journalism sectors in Western countries. The role of media industries, publishing companies and news and other media agencies is as important as issues such as technological infrastructure, professional training of journalists and teachers and the overall conditions governing the work of the press and international trade.

Entangled Technologies and Media Ecologies

The spread and revision of textbooks was a key dimension of UNESCO's overall strategy to establish mutual understanding and define the conditions and content of cultural exchange around the globe. In the early 1950s, UNESCO launched a program of textbook improvement, and over the next few years it organized several meetings and conferences with international external experts on this issue. During the second half of the 20th century, much emphasis was put on the book publishing industry and on the production and distribution of textbooks at the local, regional and international levels.[17]

In 1964 UNESCO launched a "Survey of the Present and Prospective Situation in Textbook Publishing" among its member states.[18] The survey explored practices of

16 The supremacy of human intelligence is questioned by James Bridle in his book *Ways of Being: Beyond Human Intelligence* (Dublin: Penguin Random House, 2022); see also David Graeber and David Wengrow, *The Dawn of Everything: A New History of Humanity* (New York: Farrar, Straus and Giroux, 2021).

17 E.g., Meeting of Experts on the Improvement of Textbooks, Paris, 1950. UNESCO Archives file code: ED/CONF.TB/3, WS/100.61 (https://unesdoc.unesco.org/ark:/48223/pf0000144271?posInSet=6&queryId=N-EXPLORE-e74cf437–1203–47fc-ab8c-243d3ffa4963); Current Status of Production and Distribution of Textbooks: An Overall View, 1958. UNESCO Archives file code: ED/CIM/38, WS/088.68 (https://unesdoc.unesco.org/ark:/48223/pf0000144119?posInSet=1&queryId=a190c50e-eb9d-48b2-bd21–17d5cc8551a0); UNESCO Action in the Field of Textbooks. International Meeting of Educational Publishers, Geneva, 1961. UNESCO file code: ED/PUB/61/4, WS/0661.84 (https://unesdoc.unesco.org/ark:/48223/pf0000144498?posInSet=6&queryId=35a909b3-94b0-47fe-b153-b140e3a4c724).

18 Survey of Present and Prospective Situation in Textbook Publishing: Study of Replies to Questionnaire, International Meeting of Educational Publishers, Paris, 1964. UNESCO Archives file code:

textbook production and distribution and the needs of so-called developing countries, and collected international data on who wrote, distributed, edited and published textbooks. Much like the 1947 UNESCO "Survey on Technical Needs for the Free Flow of Information", which paved the way for UNESCO's involvement in education by means of radio, TV and film, this survey resulted in many meetings and conferences on educational publishing, some of which focused on specific regions. In addition, UNESCO issued recommendations for textbook design, language policies and translation, offered support to member states by dispatching UNESCO experts on textbook writing, initiated textbook lending systems and promoted the establishment of school libraries.

Another important concern for UNESCO was the presentation of content and the influence of publishers in this area. Related activities included an international meeting of educational publishers on "New Techniques and Their Effect on the Publication of Textbooks" (1964), a meeting on "How Educational Publishers Can Bring About Better Presentation of Africa, Asia and Latin America in Their Textbooks" (1964) and "An Experimental Project for the International Exchange and Review of Geography Textbooks" (1964).[19] These meetings and initiatives were followed by numerous others on history, literary and science education, which were seen as relevant for many country and regional missions.

Thus UNESCO focused not only on the pragmatic task of textbook distribution but also on becoming a worldwide textbook advisor and gatekeeper of textbook editing, design and production and a partner and editor of textbook research.[20] To fulfill both roles, UNESCO processed global data and place-based information and liaised with (inter-)national experts and producers, national and regional committees and associations and local stakeholders.[21] In doing so, UNESCO claimed to

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ED/PUB/64/10, CS/0664.89/ED.5(WS) (https://unesdoc.unesco.org/ark:/48223/pf0000144468?posInSet=2&queryId=080a76ec-a8c3-4561-b1a3-45ac60758dff).

19 New Techniques and Their Effect on the Publication of Textbooks: International Meeting of Educational Publishers, Paris, 1964. UNESCO Archives file code: ED/209 (https://unesdoc.unesco.org/ark:/48223/pf0000126354?posInSet=2&queryId=ce694d4a-9460-4404-aa58-fd1bb89b3980); How Educational Publishers Can Bring About Better Presentation of Africa, Asia and Latin America in Their Textbooks: International Meeting of Educational Publishers, Paris, 1964. UNESCO Archives file code ED/PUB/64/7, WS/0664.88/ED.5(WS) (https://unesdoc.unesco.org/ark:/48223/pf0000144473?posInSet=2&queryId=a06ceb25-777c-4b86-881f-6aa2c1318e77); An Experimental Project for the International Exchange and Review of Geography Textbooks: International Meeting of Educational Publishers, Paris, 1964. UNESCO Archives file code: WS/0664.8/ED.5/CS (https://unesdoc.unesco.org/ark:/48223/pf0000185320?posInSet=2&queryId=2a50759d-b42f-4738-a6e7-4ae16e538d79).

20 E. g., Falk Pingel, *UNESCO Guidebook on Textbook Research and Textbook Revision*, 2nd ed. (Paris and Braunschweig: UNESCO and Georg Eckert Institute for International Textbook Research, 2010).

21 Priem and Sengsavang, "Media Technologies for a Better World."

assume a neutral role while being deeply caught up in US cultural and commercial interests and ambitions for world supremacy.[22]

Even before embarking on its textbook initiatives, soon after it was founded, UNESCO initiated and published books on "Education by Radio" (1949), "Broadcasting to Schools" (1949), "Radio in Fundamental Education" (1951), "The Use of Mobile Cinema and Radio Vans in Fundamental Education" (1949), and "Choice and Care of Films in Fundamental Education" (1950).[23] The large number of UNESCO publications on audio and visual media use in education can be explained by the fact that the Technical Needs Commission (established in 1947) had detected high rates of illiteracy in the majority of countries in the so-called Global South and East Asia that had been surveyed for many years. The commission repeatedly recommended equipping schools with radio receivers, supporting community listening through mobile radio facilities, and encouraging local radio stations to devote programs to school broadcasts and mass education. Similar recommendations were made for TV and film. UNESCO supported these aims, acknowledging not only the need for professional training and mutual exchange by organizing conferences and expert meetings but also the importance of making public, school and ideally also home receivers and TV sets available at low cost. To this end UNESCO intensively and extensively lobbied member states and media industries to support tax reductions, technical standardization and mass production of affordable equipment. These efforts fostered the growth of mainly US media producers.[24] From the 1970s onwards, education by radio, TV and film played a key role in developing countries. The 1980 MacBride Report entitled *Many Voices, One World*, as well as the 1972 Faure Report *Learning to Be: The World of Education Today and Tomorrow* and the 1996 Delors Report *Learning: The Treasure Within* all stress the importance of communication technologies in education.[25]

Education by radio, TV and film has a long and ongoing history within UNESCO. These analog audio-visual educational media persisted over time and combined old and new roles to adapt to changing circumstances and various hu-

22 Priem and Sengsavang, "Media Technologies for a Better World."

23 Priem and Sengsavang, "Media Technologies for a Better World."

24 Priem and Sengsavang, "Media Technologies for a Better World."

25 Seán McBride, *Many Voices, One World: Towards a New More Just and More Efficient World Information and Communication Order.* Report by the International Commission for the Study of Communication Problems (Paris: UNESCO, 1980); Edgar Faure et al., *Learning to Be: The World of Education Today and Tomorrow.* Report of the International Commission on the Development of Education (Paris: UNESCO, 1972); Jacques Delors et al., *Learning: The Treasure Within.* Report to UNESCO of the International Commission on Education for the Twenty-first Century (Paris: UNESCO, 1996).

manitarian and political crises. (Interactive) education by radio was (and still is) affordable in many regions of the world (e. g., in rural and nomadic areas of Africa and the Arabian Peninsula), allowing learners to connect with each other across distances.

UNESCO's initiatives in programmed instruction and computer-based learning date back to the early 1960s and thus began around twelve years later than its work on textbook revision and analog audio and audio-visual media. In 1962 UNESCO organized a first expert meeting on "New Methods and Techniques in Education." The outcome of the meeting was published in a booklet of the same title in 1963 and included an evaluation of education by means of radio, film, TV and machine- and computer-based learning, all of which were given their proper place within UNESCO's technology-driven cosmos of education.[26] The experts at the meeting agreed on immediate action to keep up with new machine- and computer-based technologies and coordinate worldwide access to these educational technologies over the next decades – especially with a view to fighting illiteracy and overcoming technological divides. When it came to technological innovation, the sky seems to have been the limit for UNESCO, and the organization continued to demonstrate urgency when mobilizing collaboration and research on new information technologies for education. UNESCO persistently concentrated on the educational value of programmed instruction and computer-based learning and teaching technologies and kept insisting on its role as a moral authority when it came to the question of how to use new media and digital technologies.

In the early 1960s, programmed instruction was seen as a method to enrich curricula, complement education by radio and TV and, most importantly, offer individualized learning facilities that also promised to compensate for a lack of qualified teachers in developing countries by facilitating remote education. Over the following years UNESCO increasingly concentrated on computational technologies, and after 1989 it organized several international congresses on education and informatics.[27] The international UNESCO Commission on Education and

26 *New Methods and Techniques in Education* (Paris: UNESCO, 1963), https://unesdoc.unesco.org/ark:/48223/pf0000001438.

27 Address by Frederico Mayor, Director-General of UNESCO, at the Opening Session of the International Congress on Education and Informatics: Strengthening International Co-operation; UNESCO, April 12, 1989. UNESCO Archives file code: DG/89/13. (https://unesdoc.unesco.org/ark:/48223/pf0000082698?posInSet=1&queryId=bca9d5e7-1982-42a5-8369-beffcf388b93); Contemporary Information and Communication Technologies and Education. Conference of the International Commission on Education and Learning for the Twenty-first Century, 1st session, Paris, 1993. UNESCO Archives file code: EDC.93/CONF.001/I.3 (https://unesdoc.unesco.org/ark:/48223/pf0000093991?posInSet=2&queryId=47176c29-d7f5-4d51-b133-a721e84acc43); International Congress on Education and Informatics (EI'96): Draft Declaration and Draft Recommendations, 1996. UNESCO Archives file

Learning for the Twenty-first Century collaborated on the impact and use of future information technologies in education, not only with international scholars, media experts and industries but also with regional and country representatives. These collaborations and related conferences resulted in many working papers, recommendations, reports and country missions which were the subject of further UNESCO discussions.

Country missions played a key role in UNESCO's numerous reform initiatives and were organized to promote and foster the use of what was perceived as "new" educational media at international level. These missions served to collect place-based information and to prepare for further steps in less accessible and less developed countries around the globe. Programmed instruction and computational technologies involved specific technological and financial challenges that UNESCO carefully addressed at various expert meetings before it embarked on its first missions in this domain. In internal UNESCO reports in the early 1970s, it was Francoist Spain that was referred to as the first developing country to start a pilot project on computer-assisted learning.[28] UNESCO had initiated a meeting of international experts in Paris from 16 to 18 March 1970. The report on this meeting was published by the end of October 1970 and stressed the need for developing countries to be given advice on how to use computers in education. It further mentioned that "experts were invited to consider a concrete situation in one member state, Spain" and that "a paper was presented by Spanish officials listing computer resources and educational plans which could be utilized in a large-scale CAI [computer-assist-

code: ED.96/ICE/4 (https://unesdoc.unesco.org/ark:/48223/pf0000104915?posInSet=1&queryId=6e49522d-3c13-4bb5-af19-028ab4b67f00); International Congress on Education and Informatics (EI'96): Educational Policies and New Technologies; Main Working Document, 1996. UNESCO Archives file code: ED.96/CONF.402/LD.2, ED.96/ICEI/3 (https://unesdoc.unesco.org/ark:/48223/pf0000104914?posInSet=3&queryId=5ee9500b-f457-444a-a418-645046a2ab45); Establishment of a UNESCO Institute for Information Technologies in Education (IITE), 1998. UNESCO Archives file code: DG/Note/98/19 (not available online).

28 Consultation on Computer-assisted Instruction for Developing Countries, Paris, March 16–18, 1970: Final Report. UNESCO Archives file code: ED/WS/198, EDS/MMT/CONS.CAI.TM (https://unesdoc.unesco.org/ark:/48223/pf0000003962?posInSet=1&queryId=79b83eac-58ca-4b88-92a3-a1c485d1d137). See also Mariano González-Delgado, Manuel Ferraz-Lorenzo, and Cristian Machado-Trujillo, "Towards an Educational Modernization Process: UNESCO Interactions with Franco's Spain (1952–1970)," *History of Education Review* 51, no. 1 (2022): 16–31. The paper describes how officials in Francoist Spain always kept in close contact with international organizations like UNESCO to prevent the Spanish dictatorship from being isolated from international trends in educational reform. Spain had already collaborated with UNESCO in several other projects on audio-visual media in education.

ed instruction] project."[29] After lengthy deliberations, the external experts consulted by UNESCO agreed to choose Spain for a pilot project and adopted the first recommendations.

UNESCO sent a pre-planning commission to Spain in June 1970, followed by a planning mission in November 1970. The pre-planning commission included four Anglo-American experts: Donald L. Blitzer from the University of Illinois who was famous for developing large-scale computer systems and for co-inventing the plasma display and touch-sensitive screens during the 1960s; Hector Correa, a Spanish-speaking economist and statistician from Tulane University; George Leith, a software and programming specialist from Sussex University; and Lawrence L. Stolurow from Harvard University who was a specialist in computer-aided instruction. The visit of the commission took place as a follow-up to a national seminar on computer-aided instruction at the Spanish Institute of Informatics and an international conference on new perspectives in education that was held in Madrid.

Although the UNESCO Secretariat had studied conditions in Spain carefully the organization seems to have concentrated on institutional, financial and technological dimensions and put to one side political issues of dictatorship and ethical concerns that may have violated human rights. Instead, the report highlighted a national education reform pursued by the Spanish government that "strongly supported elements of innovation and technological aid for instruction, for example audio-visuals, educational television and programmed instruction." Another important reason for selecting Spain to become a partner of UNESCO was its commitment to investing in computer technology:

> Spain owns about 500 computers from several manufacturers and has spent two hundred million dollars in 1969 on machines from one manufacturer alone. A wide variety of computers are currently in use including a large-scale multiprocessing computing system in the Instituto de Informatica of the Ministry of Education and Science. One foreign manufacturer is setting up six interconnected computer centres this year. The Spanish National Telephone Company has just modernized its communication network making interconnections more reliable and less expensive.[30]

These investments and additional studies carried out by Spanish education research centers on how to innovate teacher education by focusing on computer-assisted instruction made Spain highly attractive not only for UNESCO officials, but

29 Consultation on Computer-assisted Instruction for Developing Countries, Paris, March 16–18, 1970: Final Report.

30 Consultation on Computer-assisted Instruction for Developing Countries, Paris, March 16–18, 1970: Final Report.

also for US American external UNESCO experts and manufacturers. The pilot project in Spain obviously served multiple purposes and had an impact on future UNESCO missions around the globe, despite problematic political, cultural and ethical circumstances that could have resulted in a different and negative decision:

> The experts in this consultation were impressed by the many favourable factors in Spain for what could be a really large scale, high impact use of computers in an integrated programme of educational technology. They recognized the multiplying effect of concentrating on teacher training. Valuable experience could be documented in Spain for use in other developing nations. In addition to the generally applicable principles gained from this experience, some of the teacher training materials and computer-mediated instructional programmes might be directly usable in other Spanish speaking areas. At a minimum, these materials should provide a useful guide for the development of new materials particularly suited for local conditions and population needs in other areas.[31]

The report further stressed that the use of computers in the classroom and corresponding teacher training would generally support the use of audio-visual media and therefore create attractive learning environments for both learners and teachers.

In subsequent years UNESCO launched other country missions. After Spain it was Romania that successfully applied for UNESCO support in the field of computer-assisted instruction.[32] Other regions of the world followed throughout the 20th century, including South and Latin America, Asia and the Pacific region, Africa, India and the Arabian Peninsula.[33] Likewise, UNESCO programs in computer-assisted instruction were successively extended to young children and adult education.[34]

It was also towards the end of the 20th century when the Second International Congress on Education and Informatics took place in Moscow from 1 to 5 July 1996. This was an opportunity to reflect on past experiences and discuss "Educational

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31 Consultation on Computer-assisted Instruction for Developing Countries, Paris, March 16–18, 1970: Final Report.

32 Round Table on Computers in Education, Bucharest, 1972. UNESCO Archives file code: ED.72/CONF.25/6 (https://unesdoc.unesco.org/ark:/48223/pf0000001980?posInSet=115&queryId=22bcc52e-adb3-4e0b-8cc4-a3f8a9a2e0a4).

33 For Asia and Pacific region see e.g., Computers in Education: An Outline of Country Experiences, 1985. UNESCO Archives file code: BKA/85/M/254–1200 (https://unesdoc.unesco.org/ark:/48223/pf0000065852?posInSet=18&queryId=22bcc52e-adb3-4e0b-8cc4-a3f8a9a2e0a4).

34 E.g., Betty Collis: The ITEC Project: Information Technology in Education of Children; Final Report of Phase 1. UNESCO Archives file code: ED.93/WS/17 (https://unesdoc.unesco.org/ark:/48223/pf0000096342?posInSet=2&queryId=98e27b13-c015-431d-b5bf-7d24c37dca8d).

Policies and New Technologies."[35] The working paper preparing this conference repeatedly refers to distance learning and various media ecologies of education that were seen as offering an abundance of new opportunities for teaching and learning while connecting different world regions. This implies that computers were perceived as components of digital learning environments that would also offer audio-visual content and new forms of communication. In addition, digital technologies were praised as devices that could abolish distance by "freeing learners from the constraints of time and place" and provide open access to programs of educational institutions in lower and higher education, lifelong learning and professional training.[36] It was further stressed that digital learning environments would emancipate learners, individualize learning processes and facilitate communication among peers during the learning process. However, the paper also points to technological and digital divides, explaining that in some countries neither analog nor digital telephone and television networks were available. The solution for UNESCO was to establish composite, mobile and flexible ecologies of learning that were able to compensate differences and technological divides as much as possible. Indeed, UNESCO acknowledged that IT technologies were "emerging primarily from the developed world" and that "the content and form of the message they carry typically reflect the cultural values, methodology and interests of that world."[37] This critical take on computers and IT technologies may have informed UNESCO's multi-technological approach to education but the organization also imagined that digital technologies would enable diversity and provide "powerful and easy to use tools to enable communities to develop their own culturally appropriate curriculum resources [...] and to provide wide access to such materials and information."[38] However, there remained the question of how to encourage equal access to an interconnected digital world, to digital libraries and to "complex webs and links between nodes and layers of information."[39] Again, UNESCO was insisting that its universal ethical principles and multimedia approach would be an adequate response to the digital turn. In addition, the organization suggested that it should act as a catalyst between various stakeholders and reflected on how best to cooperate with hardware and software industries. The UNESCO Institute for Infor-

35 UNESCO Archives file code: ED.96/CONF.402/LD.2, ED.96/ICEI/3.
36 UNESCO Archives file code: ED.96/CONF.402/LD.2, ED.96/ICEI/3.
37 UNESCO Archives file code: ED.96/CONF.402/LD.2, ED.96/ICEI/3.
38 UNESCO Archives file code: ED.96/CONF.402/LD.2, ED.96/ICEI/3.
39 UNESCO Archives file code: ED.96/CONF.402/LD.2, ED.96/ICEI/3.

mation Technologies in Education (IITI) was finally established in Moscow in 1998.[40]

In sum, UNESCO played and still plays a crucial role in media ethics, in maneuvering the ongoing technological and cultural competition between different political powers, in fighting the technological divide, and in defining the content and aims of education and development. It is because of these three dimensions that the organization does not rely on one educational technology. Rather, it aligns its strategy to place-based conditions, flexibility of action, production industries and political crises while fostering the design of multimodal learning environments.

UNESCO's Propaganda Apparatus

The UNESCO Audio-Visual Archives testify to UNESCO's highly developed marketing and outreach strategies, which were maintained despite the organization's constant financial shortages. Indeed, the UNESCO archives hold a film collection of 12,500 cans containing approximately 3,445 titles; a photography collection comprising approximately 29,000 35 mm color slides, 140,000 35 mm b/w negatives, 1,000 35 mm color negatives, and 15,000 duplicate color slides; and more than 30,000 radio tapes and other audio recordings. In addition, UNESCO published a wide range of books, curated both local and international exhibitions, and edited the monthly journal *UNESCO Courier.* Many of these media appeared in three or more languages and/or with subtitles in various languages in order to reach as large an audience as possible, while their material-technological properties (e.g., their reproducibility) strongly determined the institutional production and management of visibility and knowledge. Unfortunately, the paper archives of UNESCO's Public Outreach Division have been destroyed and many of the above-mentioned audio-visual sources are at risk of decay, uncatalogued and/or inaccessible for researchers.

Visual media (e.g., photography, film and digital media) included in printed matter and multimodal productions such as exhibitions played a key role in UNESCO's promotion campaigns, because they strongly encouraged institutional production and management of visibility and consent. In his book *The Documentary Impulse*, Stuart Franklin explores the urge to document the world, and this description certainly applies to UNESCO, an organization that has always been eager and proud to present and showcase its work and activities to both local

40 The website of the IITO can be accessed at https://iite.unesco.org/. The institute does not seem to be affected by the war between Russia and Ukraine and is continuing to successfully pursue its overarching and universal role at a time of crisis.

and global audiences.[41] However, these documentary projects also have a second impulse – namely, the impulse to persuade and to manage and engineer consent by means of mass communication.[42] Public outreach by text, sound and (moving) images also implies that these promotional activities are part of a competitive fundraising marketplace that requires humanitarian organizations to present their causes in a convincing and appealing manner.[43] The sheer quantity of UNESCO's journalistic, audio-visual and digital productions testifies to the organization's desire to use mass communication technologies to promote its specific – that is, ethically grounded and technology-driven – understanding of education. UNESCO's media productions played an important role in the organization's image as a moral authority and world leader in education.

Conclusion: An Endorsement to Steer Multimedia Ecologies at Global Level

As an organization, UNESCO blended "old" and "new" media, while promoting educational reforms and balancing technological and digital divides. UNESCO acted as a moral authority and felt that it had an endorsement to steer mass communication at global level in a bid to educate the world. To this end, the organization was constantly (re-)mixing international and local expertise from different fields (e. g., education, technology, economics, finance and media production) by organizing programs, conferences, workshops, surveys, working papers and expert commissions to engineer and promote multimedia ecologies in the field of education. UNESCO navigated between opposing political currents and brought into proximity diverse voices on educational reform and media: by giving traditionalist sceptics and enthusiasts of information technologies in the classroom a common forum for debate, it was able to maintain its role as a catalyst and mediator, a cultural and technological translator and a leading educational organization within the anthropocentric age, while continuing to promote a rights-based approach, a focus on human intelligence and a specific understanding of freedom rooted in Western liberalism. This chapter suggests that it is important to look not only at "digital

41 Stuart Franklin, *The Documentary Impulse* (London and New York: Phaidon, 2016).

42 Edward Bernays, *The Engineering of Consent* (Norman: University of Oklahoma Press, 1955); Edward S. Herman and Noam Chomsky, *Manufacturing Consent: The Political Economy of Mass Media* (New York: Pantheon Books, 1988).

43 Robin Mansel and Marc Raboy, eds., *The Handbook of Global Media and Communication Policy* (Malden, MA, and Oxford: Wiley-Blackwell, 2011).

change" but also at how digital technologies interacted with analog or "old" media, thereby forging intermedia and transmedia relationships.[44] This also implies that production companies and international trade had a persistent influence on educational media and their uses over time.

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44 Peter Burke, *A Social History of Knowledge* (Cambridge: Polity Press/Blackwell Publishers, 1997); Jay David Bolter and Richard Grusin, *Remediation: Understanding New Media* (Cambridge, MA: MIT Press, 1999).

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