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Reconciling the Right to Learn with Copyright Protection in the Digital Age: Limitations of Contemporary Copyright Treaties

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Abstract: This article examines whether the current exceptions to copyright granted in contemporary intellectual property agreements give effect to the user rights to learn. It looks into the nature of the user rights to learn and how it is affected by copyright, technological protection measures, and digital rights management. Critical analysis is made of the effectiveness of exceptions to copyrights in international law, for advancing the users' right to learn in the digital age. The article proposes the right to learn as an independent user right and examines how it can be incorporated in the copyright regulations by maximizing the differentiation principle, so as to advance the overall development in society.

Keywords: user rights, TPM and DRM, exceptions and limitations, learning

1 Introduction

Currently, the world is in an information era, where the storage and diffusion of large amounts of data through information and communication technologies (ICTs) such as the internet, cloud technologies, and digital databases has created new ways of accessing knowledge and greatly expanded the scope for learning.¹ In a digital age, ensuring access to such technologies plays an essential role in achieving the right to learn, as is acknowledged in various international regulations.² Because access to digital information is controlled by

1 D. Kumar and J. Turner (eds.), *Education for the Twenty-First Century: Impact of ICT and Digital Resources* (New York: Springer, 2006); V. Wang, *Integrating Adult Learning and Technologies for Effective Education: Strategic Approaches* (New York: IGI Global, 2010), p. 122.

2 Examples include the *Universal Declaration of Human Rights* [UDHR] GA Resolution 217 A (III), UNGAOR, 3d Sess, Supp No 13, UN Doc A/810, (1948), art. 26; the *UN Convention on the Rights of the Child*, GA Resolution 44/25, Treaty Series Vol. 1577, U.N. Doc. A/44/49 (1989); *The African*

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the legal rights granted to the owners of the ICT from which such information is sourced or transmitted, in the form of copyrights and other exclusive rights resembling intellectual property rights (IPRs), such owners' rights may hinder access to the knowledge by users of such technologies and affect the human right to learn.³ This makes it important to identify how to balance IPRs and the human right to learn, in such a manner as to ensure affordable and consistent access to ICT in a manner that minimizes interference with access to knowledge.

Finding the right balance has become more challenging because under current IPRs regulation it is legal for copyright holders related to ICT to prevent access by technological measures such as technological protection measures (TPMs) and digital rights management (DRM).⁴ The provision of user rights, along with exceptions and limitations (E&L) to copyright, provides an important method for integrating the public interest in learning with the private rights of copyright owners,⁵ which has been recognized by the jurisprudence of the WTO and the highest courts of many countries.⁶

This article examines whether the current exceptions to copyright granted in international conventions give effect to the user's right to learn. It looks into the nature of the right to learn, then considers how it should be given expression in copyright regulation. The article goes on to critically analyse the limitations and exceptions to copyrights, TPMs, and DRM in contemporary agreements and whether they are effective in advancing the right to learn in the digital age. The article proposes that the right to learn is an independent user right that is not adequately conveyed in current exceptions to copyright and makes suggestions on how to better incorporate the user rights to learn in copyright regulations by maximizing the differential approach to IP regulation.

Charter on the Rights and Welfare of the Child, ACHPR, adopted on 11 July 1990, OAU Doc. CAB/LEG/24.9/49 (1990); and Goal 4 of the *Sustainable Development Goals*, GA Resolution 70/1, A/70/L.1 (2015).

³ See C. Armstrong *et al.* (eds.), *Access to Knowledge in Africa: The Role of Copyright* (Claremont, South Africa: UCT Press, 2010), pp. 1–3; P. Norris, *Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide* (Cambridge: Cambridge University Press, 2001); G. Dinwoodie, *Private Ordering and the Creation of International Copyright Norms: The Role of Public Structuring*, 1 *Journal of Institutional and Theoretical Economics* (2004), 160, at 165–166.

⁴ See *WIPO Copyright Treaty* [WCT], 20 December 1996, 2186 UNTS 121; *WIPO Performances and Phonograms Treaty* [WPPT], 20 December 1996, 2186 UNTS 203.

⁵ Tobias Schonwetter and Caroline Ncube, *New Hope for Africa? Copyright and Access to Knowledge in the Digital Age*, 13 *Info*, no. 3 (2011), 64–64, at 65.

⁶ *United States-Section 110(5) of the US Copyright Act*, WT/DS160/24, 15 June 2000; *CCH Canadian Ltd v. Law Society of Upper Canada* (2004) SCC 13; Tribunal de grand instance de Paris 3^{ème} chambre, 2^{ème} section, Stéphane P., *UFC Que Choisir/Société Films Alain Sarde et*, Jugement du 30 avril 2004.

Analysis is carried out in the following steps: First, a review of previous literature is conducted, to understand the relationship between copyright and the right to learn, and special consideration is being made of the important role that exceptions to copyright play in facilitating access to knowledge and the right to learn. Second, doctrinal examination will be made of the provisions of contemporary international IP treaties, specifically the *Berne Convention (BC)*, the World Trade Organization's (WTO) *TRIPS Agreement*, the World Intellectual Property Organization's (WIPO) *Copyright treaty (WCT)*,⁷ and the WIPO *Performances and Phonograms Treaty (WPPT)*⁸, to identify the exceptions they provide for the human right to learn. Third, critical analysis will be made of the scope, limitations, and effectiveness of these exceptions to identify how suitable they are for advancing access to digital learning materials, especially in developing countries. Suggestions are then made as to how countries can advance the right to learn, by considering them as independent rights to be given full expression in IP law and policy. Jurisprudence and cases in which such exceptions have been interpreted as user rights are also reviewed.

2 The relationship between copyrights, digital technologies, access to knowledge, and the right to learn

Copyright law grants the creator of an original work a set of exclusive rights that allow them to control the uses of and economic benefits deriving from their work, along with the moral right to be recognized as the author of his or her works.⁹ Under international law, the owner of a copyright can sue others who infringe on the exclusive rights for a period of 50 years after the author's death.¹⁰

⁷ *WIPO Copyright Treaty [WCT]*, 20 December 1996, 2186 UNTS 121.

⁸ *WIPO Performances and Phonograms Treaty [WPPT]*, 20 December 1996, 2186 UNTS 203.

⁹ Julie Cohen, *Creativity and Culture in Copyright Theory*, 40 *UC Davis Law Review* (2007), 1151; Jon Garon, *Normative Copyright: A Conceptual Framework for Copyright Philosophy and Ethics*, 88 *Cornell Law Review*, no. 5 (2003), 1278.

¹⁰ Article 7.1, *Berne convention for the protection of literary and artistic works*, of 9 September 1886, completed at Paris on 4 May 1896, revised at Berlin on 13 November 1908, completed at Berne on 20 March 1914, revised at Rome on 2 June 1928, revised at Brussels on 26 June 1948, and revised at Stockholm on 14 July 1967. (1967). Geneva: United International Bureaux for the Protection of Intellectual Property.

In contemporary educational systems, the use of network-based learning represents a significant part of the regular teaching acts. According to one regional study, over 45% of educators and 56% of learners report that they regularly send digital works via email, the cloud, chatrooms, etc. for educational purposes.¹¹ Yet, a considerable number of the countries do not exempt acts of use that would be necessary to send excerpts of works via email and other private tools.¹² Education in the digital era involves the use of preexisting copyrighted works. Not only digital born works but also analogue works such as books, articles, music, photographs, drawings and maps are digitized and used for educational purpose.¹³ This has resulted in the protection of users of ICT-regulated technologies and the human right to learn in various multilateral agreements. The following section analyses the relationship between the latter rights and the IPRs granted under contemporary copyright agreements.

2.1 The right to learn and user's rights under copyright regulation

Article 26.1 of The *Universal Declaration of Human Rights* (UDHR)¹⁴ gives persons the right to education, which shall be free, compulsory, and equally accessible to all. The right to education does not just require access to formal educational institutions, but the transmission of knowledge and the right to use the technologies and processes that are relevant in the learning process. This broader connotation of education as including informal educational practice is recognized in UNESCO's recommendation which defines education as "*the entire process ... by means of which individuals and social groups learn to develop consciously within, and for the benefit of, the national and international communities, the whole of their personal capabilities, attitudes, aptitudes and knowledge.*"¹⁵ Learning requires access to prior knowledge, as admitted by Sir

¹¹ EC 2016 Study, Table 6, pp. 60–61.

¹² Examples include Germany, Italy, and the Netherlands EC 2016 Study, Country Fiches, p. 42–44, 117–119, 152–154.

¹³ Maria D. Papadopoulou, *Copyright Limitations and Exceptions in an E-Education Environment*, 1 *European Journal of Law and Technology*, no. 2 (2010).

¹⁴ GA Res 217 A (III), UNGAOR, 3rd Sess, Supp No 13, UN Doc A/180 (1948) 71.

¹⁵ UNESCO's 1974 *Recommendation concerning Education for International Understanding, Co-operation and Peace and Education Relating to Human Rights and Fundamental Freedoms*, art. 1(a).

Isaac Newton who stated that: “If I have seen any further [than other men] it is by standing upon the shoulders of giants.”¹⁶

The users’ right to access ICTs for learning can be justified as a human right based on the provisions of Article 27.1 of the UDHR, which states that “Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits” and Article 15.1 of the ICESCR,¹⁷ in which parties to the Covenant recognize the right of everyone to take part in cultural life,¹⁸ enjoy the benefits of scientific progress and its applications,¹⁹ and to benefit from the protection of the moral and material interests resulting from any scientific, literary, or artistic production of which he is the author.²⁰

The user’s right entails ensuring affordable and equitable distribution of the results of scientific innovation to all individuals without discrimination. Mere availability of knowledge is insufficient to satisfy the users’ right. Rather, the law places an obligation on countries to make such knowledge affordable, accessible, adequate in quantity and quality, and utilizable in the context in which it is needed.²¹ The right covers any action taken by states for the conservation, development, and diffusion of science and culture, especially action taken to support scientific research and innovation, and would allow for open-access provisions for internet users.²²

Article 15.1(c) ICESCR, which recognizes the right of authors of scientific, literary, or artistic works to benefit from their innovations, may be interpreted as requiring the protection of intellectual property. However, the Committee on Economic, Social and Cultural Rights limits the article’s scope to protecting the right of authors to be recognized as the creators of their scientific, literary, and artistic works, and ensuring that innovators enjoy an adequate standard of living from their inventions.²³ The provision does not require a level and

16 Robert Andrews, Mary Biggs and Michael Seidel (eds.), *The Columbia World of Quotations*, vol. 14 no. 4, (New York: Columbia University Press, 1996), no. 41418, quoting Isaac Newton’s 5 February 1675 letter to Robert Hooke.

17 *International Covenant on Economic, Social and Cultural Rights*, GA Res 2200A(XXI), 21 UNGAOR Supp No. 16 at 49, UN Doc A/6316 (1966), 993 UNTS 3 [ICESCR].

18 ICESCR, art. 15.1(a).

19 ICESCR, art. 15.1(b).

20 ICESCR, art. 15.1(c).

21 Program on Women’s Economic Social and Cultural Rights (PWESCR), *ICESCR: A Handbook* (New Delhi: PWESCR, 2015), p. 36.

22 ICESCR Articles 15.2, 15.3 & 15.4.

23 CESCR, General Comment 17: The right of everyone to benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he or she is the author, 12 January 2006, E/C.12/GC/17; 13 IHRR 613 (2006), at paras 12–16.

means of protection as found in copyright and other intellectual property regimes.²⁴

The international IP regime allows for consideration of the right to learn and users' rights as part of the public interest objectives and principles for IP protection under Articles 7 and 8 of the TRIPS agreement.

Article 7 TRIPS, "Objectives," stipulates that:

The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.

Its provision requires that the protection and enforcement of IPRs should contribute to "technological innovation" on the one hand and "dissemination of technology" on the other hand; to the mutual advantage of "producers" on one side of the scale and "users" of technological knowledge on the other. All these are to be done in a manner conducive not only to socio-economic welfare, but also to a balance of "rights" and "obligations." The language of Article 7 reveals that IP protection involves a *balancing* of different interests, in order to secure the overall public good.²⁵ Any attempt to craft IP law and policy, whether at the International (Int.) or domestic level, must recognize this.

Under Article 8(1) titled "Principles,"

Members may, in formulating or amending their laws and regulations, adopt measures necessary to protect public health and nutrition, and to promote the public interest in sectors of vital importance to their socio-economic and technological development, provided that such measures are consistent with the provisions of this Agreement.

This emphasizes that IPRs are not inherent rights (like the fundamental right to learn), but rather are functional rights granted for advancing and fairly distributing general public welfare.²⁶ This approach has been authenticated by an authoritative interpretation of the UN International Covenant on Economic, Social and Cultural Rights, in which Intellectual Property was

²⁴ *Ibid.*, at par. 10.

²⁵ What is the 'public good' differs depending on considerations of place and timing. The definition of 'public good' in Beijing/Berlin may not be the same as that in Washington/Cape town.

²⁶ A.S. Taubman, "TRIPS Jurisprudence in the Balance: Between the Realist Defense of Policy Space and a Shared Utilitarian Ethic", in Lenk, Hoppe and Andorno (eds.), *Ethics and Law of IP: Current Problems in Politics, Science and Technology*, (Burlington, USA: Ashgate Publishing Company, 2007), p. 1.

described as: “a social product ... [with] a social function.” Cautioning that “the private interests of authors should not be unduly favoured” whilst “the public interest in enjoying broad access to their productions should be given due consideration.”²⁷

As treaty objectives, TRIPS Articles 7 and 8 must be considered in interpreting all other provisions of the agreement granting substantive IPRs. They are not insignificant demands to be appeased as narrowly as possible. Rather, they constitute a form of users’ rights, which obligates IP regulation to holistically support access and dissemination of knowledge goods for public social as well as private economic development.²⁸

The exclusive power granted to IPRs owners are often justified as being a necessary incentive to encourage innovation which advances development. However, contemporary studies challenge the notion of strengthening IP protection as being necessary for innovation.²⁹ The provisions of TRIPS Articles 7 and 8 suggest that innovation can only be advanced where an IP regime equitably balances the IP protection with the rights necessary for freedom of inquiry and access to knowledge for further innovation.³⁰ Thus, IPRs are limited by the right to learning, as acknowledged in paragraph 14(d) of the Venice Statement³¹ that allows countries to take appropriate measures to prevent the use of science and technology in a manner that could limit or interfere with the enjoyment of human rights and fundamental freedoms. Because the regulation of copyrights, TPMs, and DRMs may inhibit access to information necessary for learning from the world’s poor, the right to learn can be seen as providing a border that IP regulation should not interrupt with.³²

The right to education places upon governments an obligation to provide an environment suitable for learning to take place. Ensuring user access to knowledge and learning material plays an important role in attaining this human

27 Comment on Econ., Soc. & Cultural Rights, *General Comment No. 17: The Right of Everyone to Benefit from the Protection of the Moral and Material Interests Resulting from Any Scientific, Literary or Artistic Production of Which He Is the Author (Article 15, paragraph 1 (c), of the Covenant)*, 35, U.N. Doc. E/C.12/GC/17 (12 January 2006).

28 See Jerome H. Reichman and Ruth Okediji, *When Copyright Law and Science Collide: Empowering Digitally Integrated Research Methods on a Global Scale*, 96 *Minn Law Rev.*, no. 4 (2012), 1362–1480.

29 U. Suthersanen, G. Dutfield, and K.B. Chow (eds.), *Innovation without Patents: Harnessing the Creative Spirit in a Diverse Worlds* (Cheltenham: Edward Elgar Publishing, 2007).

30 Amrei Muller, *Remarks on the Venice Statement on the Right to Enjoy the Benefits of Scientific Progress and its Applications*, 10 *Human Rights Law Review*, no. 4 (2010), 765–784, at 771.

31 The Venice Statement on the Right to Enjoy the Benefits of Scientific Progress and its Applications, 16–17 July 2009, Venice [Venice Statement].

32 Muller (2010), *supra* note 30, p. 773.

right.³³ Copyright grants exclusive legal rights over protected knowledge, affecting not just first-time usage, but also the reproduction and distribution of knowledge and learning materials.³⁴ Article 10(1) of the TRIPS Agreement, and Article 4 of the WIPO Copyright Treaty (WCT), grants copyright holders the right to control reproduction, derivation, and public distribution of computer programs. The provisions also state that computer programs should be protected as literary works in the same manner as such works are protected under the BC.

Article 9.1 of the BC places acts carried out in digital media, including the input of software into a computer system; the reproduction of the work on a machine-readable material support; and the fixation of the work in the memory of the computer system, under the control of copyright holders who determine the conditions for access or use. Under these provisions, copyright holders retain control of how online works are used, because the first sale limitation does not necessarily apply to works provided online with no physical supporting medium. This has implications for enabling or restricting access to knowledge (A2K).

From an A2K perspective, “the ultimate objective of copyright cannot be the protection of creative works for its own sake; copyright serves a nobler role in furthering broad public policy objectives, such as the advancement of learning.”³⁵ These social goals of copyright and other IPRs are confirmed in provisions such as Articles 7 and 8 of the WTO Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS).³⁶ The special role that A2K plays in juvenile education is highlighted in the SDG 4.2, where countries commit to “ensure that all girls and boys have *access to quality early childhood development, care and pre-primary education* so that they are ready for primary education” by 2030.

ICTs are generally perceived as tools that advance education, because of how they have influenced changes in teaching styles, learning approaches, and methods for accessing information.³⁷ This view of ICTs has led not only to their protection under copyright regulations, but to the formation of new forms of protection for the sector under international law. Treaties which regulate ICTS, such as TRIPS, WPPT, and the WCT, uphold the principles of copyright in new

³³ Armstrong *et al.* (eds.) (2010), *supra* note 3, pp. 1–2.

³⁴ WCT, art. 4; Berne Convention, arts. 5.2 and 9.1; and TRIPS, art. 10.1.

³⁵ Armstrong *et al.* (eds.) (2010), *supra* note 3, p. 4.

³⁶ *The Agreement on Trade Related Aspects of Intellectual Property Rights*, WTO Members, 15 April 1994, Annex 1C of the Marrakesh Agreement establishing the WTO [TRIPS].

³⁷ Angela McFarlane and Silvestra Sakellariou, *The Role of ICT in Science Education*, 32 *Cambridge Journal of Education*, no. 2 (2002), 219.

areas of technology, primarily by recognizing new subject matter and new types of rights for owners.³⁸

This approach has been challenged for not giving adequate considerations to the interests of consumers, represented by user rights, which form an underlying objective of copyright protection.³⁹ Contemporary research warns that teachers are both threatened by change, and conversely not impressed by change that appears to focus on what the technology can do, rather than on learning.⁴⁰ Also, users play an important role in the process of creativity and innovation.

Today, ICT is considered an essential element of an effective learning environment. For while available evidence has not established a direct link between ICTs in schools and learning outcomes, access to computers (desktop, laptop, or notebook) and mobile phones and access to the internet may be the only way for students to gain access to digital content and the digital world in many countries.⁴¹

Use involves two acts: reproduction of a work and related subject matter and communication of the resulting copies to the classroom. It is the extent to which a protected work or other subject matter can be copied, not the act of use itself, which constitutes the main obstacle posed by copyright regulation to advancing the right to learning. For example, a recent study of domestic copyright regulation in Europe found that four of the countries analysed prevent a teacher from showing an entire TV programme in a classroom, while eight countries prohibit the act of recording that TV programme in its entirety.⁴² Consequently, despite the existence of exceptions for educational purposes in EU copyright law, a recent survey of learners and educators commissioned by the European Union found that only about 30% of educators and fewer than 25% of learners regularly post digital works on their educational institution's intranet/online platform.⁴³

38 Andrew Beckerman-Rodau, *The Problem with Intellectual Property Rights: Subject Matter Expansion*, 13 *Yale Journal of Law and Technology*, no. 1 (2011).

39 Christophe Geiger, Daniel Gervais and Martin Senftleben, *The Three-Step Test Revisited: How to Use the Test's Flexibility in National Copyright Law*, 29 *American University International Law Review*, no. 3 (2014), 580.

40 Deryn Watson, *Pedagogy before Technology: Rethinking the Relationship Between ICT and Teaching*, 6 *Education and Information Technologies*, no. 4 (2001), 251.

41 UNESCO, *Global Education Monitoring Report 2016, Education for People and Planet: Creating Sustainable Futures for All* (2nd ed., Paris: UNESCO, 2016), p. 311.

42 Teresa Nobre, *Copyright and Education in Europe: 15 Every Day Case Studies in 15 Countries*, Final Report, April 2017, (Communia: COMMUNIA International Association of the Digital Public Domain, 2017), p. 19

43 EC 2016 Study, Table 6, pp. 60–61.

A significant number of countries only allow educational uses if they are made by schools and other formal educational establishments. Examples include Germany, Italy, Poland, Portugal, Romania, Spain, and the United Kingdom. In these countries, museums, libraries, and other providers of non-commercial education must therefore ask for permission before making certain uses of protected materials in their educational programmes⁴⁴ (p. 43). This greatly hinders the ability of countries to achieve educational goals in vocational and non-formal training. The above examples illustrate the fact that *access to ICT is a necessity, not an option, for attaining the right to learn in a digital age.*

The *Convention on the Rights of a Child*⁴⁵ specifies the following rights as relevant when considering children's rights in relation to the rise of digital media:

Freedom of expression⁴⁶: Children have the right to get and share information, as long as the information is not damaging to them or others. The right to freedom of expression includes the right to share information.

Access to information, mass media⁴⁷: Children have the right to get information that is important to their health and well-being. This places an obligation on governments to encourage mass media – radio, television, newspapers, and internet content sources – so as to provide information that children can understand and not to promote materials that could harm children.

Right to education⁴⁸: All children have the right to a primary education, which should be free. Children's education should develop each child's personality, talents, and abilities to the fullest. Wealthy countries should help poorer countries achieve this right. It should also help them learn to live peacefully, protect the environment, and respect other people.⁴⁹ Children have a particular responsibility to respect the rights of their parents, and education should aim to develop respect for the values and culture of their parents.

Protection from Other Forms of exploitation⁵⁰: Children should be protected from any activity that takes advantage of them or could harm their welfare and development.

As expatiated in Article 28(1)(d) CRC, States Parties should first make the information and guidance "available" and second make it "accessible," this

⁴⁴ Teresa Nobre (2017), *supra* note 42, p. 43.

⁴⁵ The *UN Convention on the Rights of the Child*, GA Resolution 44/25, Treaty Series Vol. 1577, U.N. Doc. A/44/49 (1989) [CRC].

⁴⁶ CRC, art. 13.

⁴⁷ CRC, art. 17.

⁴⁸ CRC, art. 28.

⁴⁹ CRC, art. 29.

⁵⁰ CRC, art. 36.

requires the protection of user's rights. Thus, either a child should be able to attend education at some reasonably convenient geographic location (e.g. a neighbouring school) or he or she should have access to education via modern technology (e.g. a distance learning programme).⁵¹

The “Educational and vocational information and guidance” under subparagraph (d) generally refers to provision for educational activities outside the formal school setting, which would include access and learning skills to use ICT technology.⁵² The reference to “equal opportunities” is a stronger formulation than the one in Article 2(1) of the CRC as it obligates the countries not only to ensure formal equality, but to take measures that prevent third parties from interfering with the enjoyment of the right to education. In relation to IP, states should take measures to ensure that copyrights, DRM, and TPM do not make ICTs used for learning expensive and inaccessible to children in developing countries.

Even though digital access greatly enhances children's learning, legal protection of TPM and DRM makes many databases substantially inaccessible by the children, especially those living in the poorer regions.⁵³ Where children have access to digital media, then the quality of this access is an important factor shaping their capacity to leverage digital media and connectivity to enhance their rights. Children in poorer families face major infrastructural and connectivity challenges that hinder their rights to access information, education, and freedom of expression online.⁵⁴ Thus, in considering how to implement their right to learning, user's rights must be reinforced to overcome the financial and technical challenges to access posed by TPMs and DRM.⁵⁵

3 Challenges to the right to learn in a digital age

While many view ICTs as contributing to technology, the question of whether current forms of legal protection of ICTs via copyright and related laws

⁵¹ CESCR Committee, General Comment No. 13 on the Right to Education (UN Doc. E/C.12/1999/10, 1999), para. 6.

⁵² Mieke Verheyde, “The Right to Education”, in Andre Alen *et al.* (eds.), *A Commentary on the United Nations Convention on the Rights of the Child: Article 28* (Boston: Martinus Nijhoff Publishers, 2006), p. 31.

⁵³ Sonia Livingstone and Monica E. Bulger, *A Global Agenda for Children's Rights in the Digital Age: Recommendations for Developing UNICEF's Research Strategy* (Florence, Italy: UNICEF, 2013), p. 4.

⁵⁴ Amanda Third *et al.*, *Children's Rights in the Digital Age: A Download from Children around the World* (Abbotsford, Australia: Young and Well CRC, 2014), p. 32.

⁵⁵ *Ibid.*, p. 33.

actually advance the learning objective by granting access to larger numbers at affordable prices continues to be questioned.⁵⁶ The WIPO Internet Treaties are “special agreements” pursuant to Article 20 of the BC. Under this article, Berne member states can enter into copyright agreements only if “such agreements grant to authors *more extensive rights* than those granted by the Convention, or contain other provisions not contrary to [the] Convention.” In regard to clarifying existing BC rules, Articles 2, 4, and 5 of the WCT affirm several key principles of copyright law in the international sphere. Notably, the separation of an idea from the expression of an idea, the protection of computer programs as literary works, and the protection of original databases were explicitly incorporated into the WCT in the manner recognized in the TRIPS agreement. These advanced protections may clash with the need to protect user rights.

For example, putting information online makes it available to a large audience, from anywhere there is a telephone or network connection.⁵⁷ For publishers and authors, the question is how many copies of the work will be sold (or licensed) if networks make possible planet-wide access to any electronic copy of a work? The nightmare for users and consumers is that author-publisher attempts to establish and protect new commercial marketplaces to exploit their works will lead to technical and legal protections that sharply reduce access to society’s intellectual and cultural heritage. This requires balancing of interests to be done.⁵⁸ The classic challenge has been to strike and maintain a balance between these interests by offering enough control to motivate authors, inventors, and publishers to create and disseminate works, but not so much control as to threaten important public policy goals, such as the preservation of the cultural heritage of the nation, broad access to information, and promotion of education and scholarship.⁵⁹

IPR holders think that they should have a right to control digital access because it involves reproduction. Others are concerned that granting such rights will undermine traditional public access to information in unprecedented ways.⁶⁰ Digital information also creates difficulties because it is often licensed

56 A. Beckerman-Rodau, *The Problem with Intellectual Property Rights: Subject Matter Expansion*, 13 *Yale Journal of Law and Technology*, no. 1 (2011).

57 Pamela Samuelson and Davis Randall, *The Digital Dilemma: A Perspective on Intellectual Property in the Information Age*, paper given at the 28th Annual Telecommunications Policy Conference (Arlington, VA, 2000), p. 4.

58 Fareed Rafiqi and Iftikhar Bhat, *Copyright Protection in Digital Environment: Emerging Issues*, 2 *International Journal of Humanities and Social Science Invention*, no. 4 (2013), p. 6.

59 Samuelson and Randall (2000), *supra* note 57, pp. 5–9.

60 Rafiqi and Bhat (2013), *supra* note 58.

rather than sold. Licenses are governed by contract law and, as such, are essentially a private agreement between two parties. Whether or to what extent such licenses can override public policy considerations remains a matter of contention.⁶¹

The ability of students to access through the internet, global online education platforms, university lectures on content hosting platforms such as YouTube, or to freely download audio recordings of lectures on their mobile phones are greatly restrained by the costs of such access, which are aggravated by copyrights and related rights.⁶² The ability of users to access online knowledge are further inhibited by the strengthened protection of copyright holders, TPMs, and DRM, anti-circumvention regulations, and the narrowing of exceptions to copyrights permitting access for purposes such as research and education. These restrictions are not limited to individual users, but also affect libraries, archives, and educational institutions.

The obstacles to educational access under current international copyright law are as follows: First, because copyrights control not just conditions for the first use of a copyrighted product, but also determine subsequent use and dissemination of copyrighted knowledge, the right by nature excludes access to knowledge by others, except on conditions predetermined by the copyright owner.

Internet service providers (ISPs) can also be ordered to apply technical measures such as filtering or blocking access to a specific website infringement to prevent further online copyright infringement. This generally increases the costs of accessing important databases.⁶³ Considering the important role that ISPs play as intermediaries by which individual users can access the internet, scholars have warned that such provisions do not strike a fair balance between copyright protection and important human rights like the right to learn and freedom of expression.⁶⁴

61 See National Research Council, *The Digital Dilemma: Intellectual Property in the Information Age* (Washington: National Academies Press, 2000), pp. 96–122; Paul Messaris and Lee Humphreys (eds.), *Digital Media: Transformations in Human Communications* (New York: Peter Lang Publishing, 2006); and Graeme Dinwoodie (ed.), *Intellectual Property and General Legal Principles: Is IP a Lex Specialis?* (Cheltenham: Edward Elgar, 2015).

62 William Lehr and Lorenzo Pupillo (eds.), *Internet Policy and Economics: Challenges and Perspectives* (New York: Kluwer Academic, 2002), pp. 88–89.

63 *Ibid.*, pp. 89–91.

64 Ge Chen, *Copyright and International Negotiations: An Engine of Free Expression in China?* (Cambridge: Cambridge University Press, 2017), pp. 55–70; Sara Bannerman, *International Copyright and Access to Knowledge* (Cambridge: Cambridge University Press, 2016), pp. 157–168.

4 Importance of exceptions and limitations to copyrights for educational purposes

E&L to exclusive rights play a crucial role in international copyright treaties, for they not only ensure access to information necessary for learning, but also stimulate the creation of new works, which build on existing knowledge. E&Ls are important legal balancing tools in integrating competing public and private rights such as access to knowledge and the right of an inventor or author to their creation.⁶⁵

Because *one size does not fit all* in international IP regulation, E&Ls provide international treaties with the flexibility necessary to adapt them to be effective in the varying economic, social, and cultural contexts of different countries. Such balancing tools enable treaties to serve the interests of both countries that create, and those that use, material subject to copyright. These effects can only be realized by purposive, rather than restrictive, interpretation of relevant E&L provisions.⁶⁶ This may be achieved by applying the necessity and proportionality principles when interpreting relevant copyright regulation. Balancing also requires holistic consideration of other non-IP rights that may be affected by the copyright, such as the human right to learn.

Today, the vast majority of IPRs relating to ICTs are held by multinational companies whose main goal is to maximize profit. This commercialization of science “has altered the role of intellectual property from a means to provide incentives to authors, researchers, and inventors to a mechanism to encourage investment and to protect the interests of investors.”⁶⁷ The introduction of market considerations into the conduct of science has eroded the distinction between basic research (where intellectual property rules are primarily concerned with the acknowledgment of authors/creators of ideas and findings) and applied research (where monopolistic/proprietary concerns predominate). This has particularly been evident in the area of computer science and biotechnology. Increased commercialization has also changed intellectual property rights from being a means to provide incentives to researchers and inventors,

⁶⁵ Ruth Okediji, *The International Copyright System: Limitations, Exceptions and Public Interest Considerations for Developing Countries in the Digital Environment*, March 2006 UNCTAD-ICTSD Project on IPRs and Sustainable Development, ICTSD Issue Paper no. 15. pp. 8–9.

⁶⁶ *Ibid.*

⁶⁷ A.R. Chapman, *Towards an Understanding of the Right to Enjoy the Benefits of Scientific Progress and Its Applications*, 8 *Journal of Human Rights*, no. 1 (2009), at 19. See also CESCR, Statement on Human Rights and Intellectual Property, 14 December 2001, E/C.12/2001/15, at para. 6.

to a mechanism to protect the resources of investors. Consequently, the traditional values that have supported scientific development, such as open publication, access to data, etc., have been constrained by the legal regulations cum restrictions accompanying market liberalization under TRIPS.⁶⁸

Review of contemporary WTO jurisprudence indicates that TRIPS Article 7 has not been holistically and effectively applied. Decisions have focused on protecting the private interest of right holders at the expense of the public interest aspect (access to and dissemination of the creative works to the public for further creativity) it was designed to serve. For example, in the *Canada-Pharmaceuticals* Case the Panel acknowledged that the provision under Art.27.1 TRIPS, requiring patent rights to be made available for all innovations without discriminating on the place of invention, type or source (whether locally produced or imported) of technology, hinders the ability of developing countries to target certain products in national IP policy, and to attain the public interest goals referred to in Arts 7 & 8. Nevertheless, the Panel chose to view this handicap as a “*deliberate limitation, rather than a frustration of purpose.*”⁶⁹ The invocation of the specific non-discrimination requirement of Art 27.1 as a control on the more general policies stated in Arts 7 and 8.1 by the Panel has been criticized by the UNCTAD-ICTSD in a commentary.⁷⁰

The reasoning of the AB in *Brazil-Tyres* was similarly influenced.⁷¹ While finding Brazil’s import ban on retreaded tyres to be in principle justified under WTO Members’ right to protect human, animal, or plant life or health [embodied in GATT Article XX (b)], the Appellate Body still adjudged the ban to be discriminatory in its application, and hence not covered by the provision’s chapeau. This illustrates how the application of the “non-discrimination” (Art.27.1) and “consistency” (Art.8.1) tests often render Articles 7 and 8 of little practical utility in the promotion of public interest under contemporary IP frameworks.

Open access is necessary to restore the balance. After all, open access is a licensing mechanism that operates within the copyright system, but with more flexibility and enhanced access based on the consent of authors. Considering the fact that negotiations to extend the Doha Declaration have remained

⁶⁸ See A. Firth, (ed.), *The Prehistory and Development of Intellectual Property Systems* (London: Sweet and Maxwell, 1997) and “*Comparative Perspectives on IP Law*”; D. Mathews and V. Munoz-Tellez, *Bilateral Technical Assistance and TRIPS: The United States, Japan and European Communities in Comparative Perspective*, 9 *Journal of World IP Law*, no. 6 (2006), 629.

⁶⁹ WT/DS114/R, para. 7.92.

⁷⁰ UNCTAD-ICTSD, 2005, p. 129.

⁷¹ Brazil – Measures Affecting Imports of Retreaded Tyres, 3 December 2007, AB Report.

deadlocked, *a new comprehensive approach to TRIPS interpretation is needed, one which makes adequate room for users' rights as objectives of copyright regulation that create obligations, rather than just limitations to IPRs.* The subsequent part of this article examines how this can be achieved.

5 How technology affects access to copyrighted works: The digital divide and technology protection measures (TPMS)

The digital divide describes the gap between individuals (and societies) that have the resources to participate in the information era and those that do not. It a nutshell, it describes the disparity in internet access between people.⁷² The digital divide reflects the broader context of international social and economic relations: a centre-periphery order marked by American dominance. There are large disparities of internet access between the affluent nations at the core of the internet-based global network on the one hand, and the poor countries at the periphery which lack the skills, resources, and infrastructure to log on the information era.⁷³

Statistics indicate that the digital divide is widening not just between developed and developing countries, but also within developing countries.⁷⁴ Such disparities negatively affect access to learning for young persons in developing countries, for they set up a foundation for continued social inequality. Where juveniles cannot access the internet, they risk potential disenfranchisement from personal development and better employment. The less information a person has access to, the less likely they are to acquire the skills and knowledge necessary to obtain the best jobs. This can leave them at the poorest levels throughout their lives. Certain groups have been identified as being especially vulnerable to such marginalization, namely women, those from poor countries, and juveniles without adequate internet access.⁷⁵ This may lead to the perpetual exclusion of such young people from access to knowledge-based societies and richer countries.

The increased spread of digital technologies in the 1980s led copyright holders to put in place technological barriers in an attempt to prevent

⁷² Wenhong Chen and Barry Wellman, *The Global Digital Divide-Within and Between Countries*, 1 *IT&Society*, no. 7 (2004), 19.

⁷³ *Ibid.*, p. 20.

⁷⁴ Wenhong Chen and Barry Wellman, *supra* note 72, p. 26.

⁷⁵ *Ibid.*

unlicensed copying of their products. These technological controls are now described as *technology protection measures (TPM)*, or DRM. TPMs affect access to knowledge and the dissemination of knowledge, because sophisticated DRM systems, through encryption and other means, *control not only potentially infringing copying of material, but also access to the material itself.*⁷⁶ In markets, DRM technology effectively creates a technology bottleneck that prevents access to information and reduces learning.

Anti-circumvention laws, which permit the use of DRM by copyright holders, grant them legal power to create closed technology platforms that exclude other competitors from interoperating with them.⁷⁷ *Because anti-circumvention laws render E&Ls to copyright law ineffective, they ultimately affect access to information, and the opportunity to learn. Moreover even if no digital lock is specifically implemented by an author, they may use proprietary or closed-source software to create their works (like Microsoft Word, for example) that poorer people may not have access to which in turn makes it impossible for them to view such educational documents.*

Recent examples of regulation protecting TPMs that has been criticized for its potential to circumscribe the rights of users include the 2001 InfoSoc Directive of the European Commission, in which the anti-circumvention rules were criticized as prioritising the rights of owners above legitimate user interests⁷⁸, and the US *Digital Millennium Copyright Act*,⁷⁹ which was criticized for overly restricting fair use and rendering user rights ineffective.⁸⁰ In another case, the Canadian Bar Association submission on Bill C-32, Copyright Modernization Act criticized the research exceptions to TPM protection under the bill as they may not meet the needs of those who require circumvention to access content for research related to media criticism, search technologies, and network content distribution.⁸¹ TPMs can prevent access not just to copyright-protected knowledge, but may also preclude the use of information and

⁷⁶ Dale Clapperton and Stephen Corones, *Locking in Customers, Locking Out Competitors: Anti-Circumvention Laws in Australia and their Potential Effects in High Technology Markets*, 30 Melbourne University Law Review, (2006), 660.

⁷⁷ *Ibid.*, p. 661.

⁷⁸ See Jerome Reichman, Graeme Dinwoodie and Pamela Samuelson, *A Reverse Notice and Takedown Regime to Enable Public Interest Uses of Technically Protected Copyright Works*, 22 Berkeley Tech, (2007), 981, at 983–985.

⁷⁹ *Digital Millennium Copyright Act*, Pub. L. no. 105–304, 112 Stat. 2860 (1998).

⁸⁰ Timothy K. Armstrong, *Digital Rights Management and the Process of Fair Use*, 20 Harvard Journal of Law & Technology, no. 1 Fall (2006), 49.

⁸¹ Canadian Bar Association, Submission on Bill C-32, Copyright Modernization Act (February 2011).

databases that are not protected by copyright law. This seriously reduces the amount of upstream data and information that is freely accessible by the public, referred to as the digital commons.⁸²

The principal treaties regulating the application of ICT internationally are examined below.

6 Provisions for exceptions and limitations in contemporary multilateral regulation of copyrights and ICTs

6.1 General provisions

The BC for the Protection of Literary and Artistic Works, usually known as the BCBC,⁸³ is an international agreement governing copyright, which was first accepted by 173 parties in Berne, Switzerland, in 1886, and continues to remain relevant as it has been adopted in more recent international IP treaties by organizations such as the WTO and WIPO. It provides creators such as authors, musicians, poets, and painters with the means to control how their works are used, by whom, and on what terms. Articles 9–10 of the BC provide exceptions to copyright for teaching purposes and the “three-step test” that are relevant to learning in the digital age.

The WTO’s *Agreement on TRIPS* is one of the multilateral trade agreements that is obligatory for states that are members of the WTO.⁸⁴ The agreement covers traditional IPRs such as patents, trademarks, copyrights, and trade secrets as well as newer rights relating to semiconductor chips and ICT. Because TRIPS makes the adoption of minimum standards of IP protection mandatory for WTO member states, and extends IPRs to a wide range of subjects, the agreement can impact a wide range of interests. *Article 9(1) of TRIPS* regulates copyright exceptions. Under this provision, WTO countries can apply the specific limitations and exceptions that are contained in Articles 1–21 of the

⁸² Reichman and Okediji (2012), *supra* note 28, p. 1369.

⁸³ *Berne Convention for the Protection of Literary and Artistic Works*, 9 September 1886, revised at Stockholm on 14 July 1967, Geneva: International Bureaux for the Protection of Intellectual Property.

⁸⁴ *The Agreement on Trade Related Aspects of Intellectual Property Rights*, WTO Members, 15 April 1994, Annex 1C of the Marrakesh Agreement establishing the WTO [TRIPS].

BC. Under Article 9(1), it is obligatory for members to provide for exceptions for quotations under Article 10(1), this being the one mandatory exception under Berne. With respect to the other exceptions contained in the BC, it is not compulsory for any of these limitations or exceptions to be recognized, but when and if they are adopted, such exceptions must comply with the conditions contained in the relevant articles of the BC.⁸⁵

Signed in 1996, the World Intellectual Property Organization's (WIPO) *Copyright Treaty* (WCT) extends the subject of copyright to cover computer programs and databases.⁸⁶ Limitations and exceptions under the WCT are dealt with in two ways, both of which incorporate the three-step test. The first occurs indirectly under Article 1(4), while the second is done explicitly under Article 10. Under Article 1(4) WCT

The reproduction right, as set out in Article 9 of the Berne Convention, and the exceptions permitted thereunder, apply fully in the digital environment, in particular to the use of works in digital form. It is understood that the storage of a protected work in digital form in an electronic medium constitutes a reproduction within the meaning of Article 9 of the Berne Convention.⁸⁷

Limitations and exceptions are also provided for in the *WIPO Performances and Phonographs Treaty* (WPPT).⁸⁸ Article 16.1 permits parties to provide for the same kinds of limitations or exceptions with regard to the protection of performers and producers of phonograms as they provide for in their national legislation, in connection with the protection of copyright in literary and artistic works. Under Article 16(1), the scope of limitations and exceptions to the protection of performers and phonogram producers, under national legislation, is to be equivalent to those granted to literary and artistic works. Because they regulate literary and artistic works, this article implies that the provisions of the BC, TRIPS, and the WCT (if the country in question is a member of any or all of these agreements) will also apply to performers and phonogram producers, because it is to be assumed that the laws of such countries will be consistent with the latter instruments.⁸⁹

85 WIPO Standing Committee on Copyright and Related Rights, *WIPO Study on Limitations and Exceptions of Copyright and Related Rights in the Digital Environment*, Ninth Session, Geneva, 23 to 27 June 2003, [WIPO Study], p. 46.

86 *WIPO Copyright Treaty* [WCT] 20th December 1996, 2186 UNTS 203.

87 WIPO Study (2003), *supra* note 85, p. 56.

88 *WIPO Performances and Phonograms Treaty* [WPPT], 20th December 1996, 2186 UNTS 203.

89 WIPO Study (2003), *supra* note 85, p. 64.

6.2 Exceptions for teaching purposes

Article 10.2 of the BC provides exceptions to copyright relevant for teaching purposes. The provision states that:

It shall be a matter for legislation in the countries of the Union, and for special agreements existing or to be concluded between them, to permit the use, to the extent justified by the purpose, of literary or artistic works by way of illustration in publications, broadcasts or sound or visual recordings for teaching, provided that such use is compatible with fair practice.

This exception regulating the use of works for teaching purposes is not mandatory for the members of the BC, it is a matter for national legislation.

The ‘word ‘teaching’ was to include teaching at all levels - in educational institutions and universities, municipal and State schools, and private schools. Education outside these institutions, for instance general teaching available to the general public but not included in the above categories, should be excluded. The first condition, i.e. that the extent of illustrations for teaching should be justified by the teaching purpose means that the amount of the work used should not be more than necessary in order to illustrate the subject matter taught. Consequently, the utilization of works for teaching purposes is not subject to any determined quantitative restriction. The use of a work made under this teaching limitation must be ‘fair’ and must keep the balance between the different stakeholders’ interests (the education needs of the general public and the authors’ rights to exploit their works.⁹⁰

6.3 The three-step test

Article 9.2 BC states that:

It shall be a matter for legislation in the countries of the Union to permit the reproduction of such works in certain special cases, provided that such reproduction does not conflict with a normal exploitation of the work and does not unreasonably prejudice the legitimate interests of the author.

The conditions contained in this provision, known collectively as the three-step test, have been adopted as a general template for regulating domestic policy space relating to exceptions to copyrights in international law.⁹¹ The three-step test limits the exception to copy to individuals and makes it clear that such use must be confined to certain special purposes (first step). It then demands that the

⁹⁰ Papadopoulou (2010), *supra* note 13, pp. 5–6.

⁹¹ Henning Grosse Ruse-Khan, *The Protection of Intellectual Property in International Law* (Oxford: Oxford University Press, 2016), p. 432.

unauthorized usage must not conflict with the normal exploitation of the copyrighted work (second step). Finally, so as to prevent unreasonable prejudice to the right holder's interests, the test requires that the copyright owner receives fair compensation that takes account of the application, if any, of TPMs (third step).

Article 13 of TRIPS contains a general provision related to the three-step test which states that: "Members shall confine limitations and exceptions to exclusive rights to certain special cases which do not conflict with a normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the right-holder." Article 13 of TRIPS applies to other "exclusive rights" apart from reproduction that are protected under the BC, namely translation (Article 8), public performance (Article 11), broadcasting and other communications (Article 11*bis*), public recitation (Article 11*ter*), and adaptation (Article 12). It also applies to rights that are protected expressly under TRIPS itself, in this instance the limited rental right under Article 11.

In the case of the rental right (and any other exclusive right that may be added to subsequent versions of TRIPS), Article 13 will allow the making of exceptions or limitations in accordance with the three-step test, without the need to refer to any qualifications that may arise because of the incorporation of Articles 1–21 of Berne standards pursuant to Article 9(1). As a stand-alone TRIPS provision, it would therefore be open to a national legislature to allow for a more generous range of exceptions to this right on the basis that TRIPS requires a more balanced approach to the interpretation of its provisions.⁹²

Under Article 10(1) WCT,

Contracting Parties may, in their national legislation, provide for limitations of or exceptions to the rights granted to authors of literary and artistic works under this Treaty in certain special cases that do not conflict with a normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the author.

Article 10(2) WCT states that

Contracting Parties shall, when applying the Berne Convention, confine any limitations of or exceptions to rights provided therein to certain special cases that do not conflict with a normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the author.

Accordingly, the unqualified application of the three-step test will only arise in a limited number of cases, notably those concerned with the reproduction right and the new rights under the WCT.⁹³

⁹² WIPO Study, *supra* note 85, at 50.

⁹³ WIPO Study, *supra* note 85, at 67.

Article 10(2) (and, by inference, Article 13 of TRIPS) implies greater restrictions on the scope of permissible exceptions than would otherwise apply to these rights. This might arise in the case of the indeterminate implied category of “minor reservations.” Thus, if a minor reservation applied under national law exceeded the limits set by the three-step test, the Basic Proposal indicates that this would no longer be allowable under Article 10(2) of the WCT.

Another version of the three-step test is found in Article 16.2 WPPT which states that “parties shall confine any limitations or exceptions to rights provided for in this treaty to certain special cases which do not conflict with a normal exploitation of the performance or phonogram and do not unreasonably prejudice the legitimate interests of the performer or of the producer of the phonogram.” This provision stipulates that any limitations and exceptions under the WPPT must conform to the three-step test. The provision highlights the fact that reproductions in digital form in an electronic medium are included and that limitations and exceptions can be made equally in the digital, as in the physical, environment.⁹⁴

Room still exists for providing exceptions to copyright that go beyond the scope of the three-step test. For example, considering the structure of the BC, the three-step test does not extend to a state exercise of discretion pursuant to those Articles where such discretion has explicitly been granted, such as Articles 2bis, 10, and 10bis. As such, states may freely enact legislation with respect to the subjects covered in these Articles without the restrictions of the three-step test. Also, the three-step test cannot apply to exercises of state discretion that are done pursuant to public policy external to copyright issues such as, for example, competition law. It has been argued that measures enacted pursuant to Article 40 of the TRIPS Agreement would not be subject to a three-step test scrutiny because these cannot be properly deemed as limitations/exceptions to protection but rather as disciplinary controls necessitated by the copyright owner’s actions.⁹⁵ Developing countries could advance learning goals by incorporating IP policies that ensure that the user’s right to access essential knowledge is available as widely as possible.

6.4 Exceptions relating to TPMs and DRM

Article 11 of the WCT states that countries

⁹⁴ WIPO Study, *supra* note 85, at 65.

⁹⁵ Okediji (2006), *supra* note 65, at 14.

shall provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by authors in connection with the exercise of their rights under this Treaty or the Berne Convention and that restrict acts, in respect of their works, which are not authorized by the authors concerned or permitted by law.

Article 18 of the WPPT contains a similar provision.

Collectively, the WCT provisions give countries considerable discretion in preventing access to and use of copyrighted digital material using technology. The use of the word “shall” makes the provision of anti-circumvention regulation compulsory upon signatory countries. However, the adoption of such strong protection for owners of technology comes with costs to users of such technologies. For “such protection allows copyright owners to control all uses of their works and makes it difficult, if not impossible, to benefit from copyright exceptions and privileges.”⁹⁶

It is clear that not all limitations currently included in national legislations would correspond to the conditions now being proposed. In the digital environment, formally “minor reservations” may in reality undermine important aspects of protection. This has led some scholars to criticize Article 10(2) WCT as constituting a “straightjacket” for existing exceptions in areas essential for society, where limitations should not be curtailed by the change from a physical to a digital format.⁹⁷

6.5 Institutional exceptions: Education, libraries, and public databases

The 1971 Paris Appendix to the BC permits developing countries to issue compulsory licenses for the reproduction of copyrighted material, “for use in relation to certain systematic instructional activities” and for translating copyrighted material into a language of general use in the authorizing country. This covers a large potential universe of use, and suggests that the scale and kind of private use envisaged will need to be carefully defined and limited in order to meet the three requirements of the test.

Uses of protected works by libraries and archives have led to controversy in many countries. Such institutions, particularly when not conducted for profit, can argue that their primary motivation is educational, informational, and obviously beneficial for the wider community, and should therefore not be

⁹⁶ June M. Besek, *Anti-Circumvention Laws and Copyright: A Report from the Kernochan Center for Law, Media and the Arts*, 27 *Colombian Journal of Law and the Arts*, no. 4 (2004), 392.

⁹⁷ WIPO Study, *supra* note 85, p. 61.

subjected to claims by right holders. Against this, copyright holders will argue that their works should not be used to subsidize the educational and informational roles of these institutions.⁹⁸

A holistic interpretation of the three-step test may provide an equitable means for balancing these competing interests. This can be achieved by adopting a more policy-based reading of the second step. In the specific context of the TRIPS Agreement, such a normative interpretation may rely on the objectives and principles laid down in the Agreement's preamble and in Articles 7 and 8.⁹⁹ This fits in with the principle of public international law, stated in Article 31.1 of the Vienna Convention on the Law of Treaties (VCLT) that requires a law to be interpreted in accordance with its objectives and purpose.

This approach is supported by the decision in the *Canada-Pharmaceuticals* case. The WTO panel dealing with the protection of pharmaceutical products in Canada noted in its report that

both the goals and the limitations stated in articles 7 and 8.1 must obviously be borne in mind when ... [examining the wording of the provision] as well as those of other provisions in the TRIPS Agreement which indicate its object and purposes (para. 7.26).

This Panel decision will justify a more instrumentalist approach in interpreting and applying the three-step test to copyright exceptions. Examples of proposed legislations that have adopted such holistic exceptions are the US 2008, Section 108 Study Group Issues Final Report, and the 2012 WIPO Limitations and Exceptions Regarding Education.

Distance education is another usage that requires special attention, as it is now likely to implicate two exclusive rights that are to be protected under contemporary IP treaties, namely the right of reproduction and communication rights. Statutory licenses require copyright holders to permit the use of their works by third parties, subject to the payment of a fixed royalty and fulfilment of other conditions established by law. The provision of statutory licenses is one means of ensuring that there is no unreasonable prejudice to the legitimate interests of authors, while ensuring that an appropriate balance is struck between the rights of authors and those seeking educational objectives.¹⁰⁰

Section 31D of India's Copyright Act gives broadcasting organisations the authority to air any prior published literary, musical work and sound recording, as long as prior notice is given to the rights holders and royalty paid as prescribed by the Copyright Board. This provision serves as an example of

⁹⁸ WIPO Study, *supra* note 85, p. 76.

⁹⁹ Geiger *et al.* (2014), *supra* note 39, pp. 597–607.

¹⁰⁰ *Ibid.*

how to ensure that the rights of 3rd place users of copyrighted materials (in this case the listeners), to access such material for learning purposes, is not hindered by restrictions placed on transmitters and 2nd place users (in this case the broadcasters).

7 Exceptions based on human rights

While Article 27(2) of the UDHR and Article 15(1)(c) of the *International Covenant on Economic, Social and Cultural Rights* (ICESCR)¹⁰¹ has often been cited as justifications for IPRs such as copyright as a category of human rights,¹⁰² such a view has been challenged by *General Comment No. 17* of the UN Committee on Economic, Social and Cultural Rights (CESCR) on Article 15(1)(c) of the ICESCR.¹⁰³

The Comment unequivocally distinguishes IPRs from the human right to the protection of moral and material interests of authors under Article 15(1)(c), noting that: Human rights are fundamental, inalienable and universal entitlements belonging to individuals and, under certain circumstances, groups of individuals and communities. Human rights are fundamental as they are inherent to the human person as such, whereas intellectual property rights are first and foremost means by which States seek to provide incentives for inventiveness and creativity encourage the dissemination of creative and innovative productions, as well as the development of cultural identities, and preserve the integrity.¹⁰⁴ Also, the Comment stresses that it is important not to equate IPRs with the human right recognized in article 15, paragraph 1(c).¹⁰⁵ Subsequently, basic human rights such as the right to life and the right to learn should be differentiated (and are usually given precedence) over proprietary rights such as

101 *International Covenant on Economic, Social and Cultural Rights* [ICESCR], 16th December 1966, 993 UNTS 3.

102 See Bernt P. Hugenholtz and Ruth Okediji, *Conceiving an International Instrument on Limitations and Exceptions to Copyright*, Amsterdam Law School Research Paper, no. 2012–43 (2012), p. 30; and Sinjela Mpazi (ed.), *Human Rights and Intellectual Property Rights: Tensions and Convergences* (Sweden: Martinus Nijhoff Publishers, 2007), p. viii.

103 UN Committee on Economic, Social and Cultural Rights (CESCR), *General Comment No. 17: The Right of Everyone to Benefit from the Protection of the Moral and Material Interests Resulting from any Scientific, Literary or Artistic Production of Which He or She is the Author (Art. 15, Para. 1 (c) of the Covenant)*, 12 January 2006, E/C.12/GC/17, available at: <<http://www.refworld.org/docid/441543594.html>> accessed 5 March 2018.

104 CESCR, *General Comment no. 17*, 2005, para 1.

105 CESCR, *General Comment no. 17*, 2005, para 3.

IPRs.¹⁰⁶ Provisions in contemporary treaties such as the Convention on Biological Diversity (CBD),¹⁰⁷ the ICESR, and the 2007 WIPO Development Agenda give room for such differentiations.

Differentiation between rights shouldn't be seen as discrimination. Legitimate grounds exist for differentiation for children, for educational purposes, and for developing and least developing countries. Such differentiation is especially important in attaining the juvenile right to learn, because guaranteeing a person their right to exclude others from using their Cadillac differs from excluding others from using the times tables. If someone else is allowed to use my Cadillac, that reduces the value of my property, indeed may totally deprive me of its use when I need it. In contrast, if someone else uses the times tables, my use of them is in no way compromised. It would be morally wrong to give someone an intellectual property right in the times tables because that would artificially deprive those who could not afford to pay of something basic to their right to an education.¹⁰⁸

8 Jurisprudence interpreting exceptions to copyright protection

A review of relevant jurisprudence indicates that the policy balance of production incentives is categorically determined (without reference to the particular facts) to outweigh access concerns.¹⁰⁹ For example, in a 2007 decision, a US court stated that “[t]he public interest in receiving copyrighted content for free is outweighed by the need to incentivize the creation of original works.”¹¹⁰ Similarly, in 2017, the Federal Court of Canada issued extensive damages in a case involving circumvention of TPMs.¹¹¹ The decision, which is the first to conduct an extensive examination of Canada's anti-circumvention rules

106 Tzen Wong and Graham Dutfield (eds.), *Intellectual Property and Human Development: Current Trends and Future Scenarios* (Cambridge: Cambridge University Press, 2010), pp. 39–40.

107 *Convention on Biological Diversity* [CBD], 5 June 1992, 1760 UNTS 79.

108 Peter Drahos and John Braithwaite, *Information Feudalism: Who Owns the Knowledge Economy?* (London: Earthscan Publications, 2002), p. 200.

109 Carlos M. Correa, *Research Handbook on the Interpretation and Enforcement of Intellectual Property under WTO Rules* (Cheltenham: Edward Elgar Publishing, 2010), p. 73.

110 *Metro-Goldwyn-Meyer Studios, Inc. v. Grokster, Ltd*, 518 F. Supp. 2d 1197, 1222 (CD Cal. 2007). See also *Disney Enters. Inc. v. Delane*, 446 F. Supp. 2d 402, 408 (D. Md. 2006).

111 *Nintendo of America Inc. v. Jeramie Douglas King and Go Cyber Shopping (2005) Ltd* (2017) FC 246.

established in 2012, has been criticized for adopting expansive interpretations to the digital lock protections and narrow views of the exceptions.¹¹² These sweeping oversights of the public interest and user rights, in which they are granted less weight than copyrights, are untenable for digital learning, which requires elaboration and equal consideration of both public and private harms.¹¹³

In the WTO Panel Report decision in the *US-Section 110(5) Copyright Act* the Panel deliberated on whether limitations to exclusive rights provided in the US Copyright Act were justified under TRIPS Art. 13. The Panel concluded that: (i) there is a “minor exceptions” doctrine that applies to BC Art. 11*bis* and 113 and (ii) the doctrine has been incorporated into the TRIPS Agreement via TRIPS Art. 13 (limitations on exclusive copyrights).

The Panel clarified three criteria that parties have to cumulatively meet to make limitations or exceptions to exclusive rights under Art. 13: the limitations or exceptions (i) are confined to certain special cases; (ii) do not conflict with a normal exploitation of the work; and (iii) do not unreasonably prejudice the legitimate interests of the right holder. Based on these criteria, the Panel found that the US homestyle exemption met the requirements of Art. 13, and, thus, was consistent with BC Art. 11*bis*(1)(iii) and 11(1)(ii) as incorporated into the TRIPS Agreement (Art. 9.1); While the US “business exemption” did not meet the requirements of TRIPS Art. 13: (i).

Here the Panel upheld one (very narrow) exception that essentially applied only to dramatic musical works played in very small establishments, but considered the wider exception applying to larger establishments and all types of musical works as inconsistent with all three steps of the test. The most problematic aspect of the Report is that the Panel chose to define all relevant terms in Article 13 in greater detail, rather than limiting itself to identifying the range of possible understandings that an interpretation using the VCLT allows. The Panel’s approach effectively denies flexibility in the open and vague terms of the three-step test, a result that is highly problematic for integrating public interest considerations through E&Ls at the domestic level.¹¹⁴

Determining the public interest in regard to injunctive relief requires explicit balancing of the short-term interest in reduced prices, increased access, and cumulative innovation that denying injunctions may provide against the long-

112 Michael Geist, *Canadian DMCA in Action: Court Awards Massive Damages in First Major Anti-Circumvention Copyright Ruling*. (3 March 2017), Michael Geist (blog), available at: <<http://www.michaelgeist.ca/2017/03/canadian-dmca-in-action-court-issues-massive-damage-award-in-first-major-anti-circumvention-copyright-ruling/>>.

113 Correa (2010), *supra* note 109, p. 74.

114 Ruse-Khan (2016), *supra* note 91, p. 433.

term interest in promoting investment, creativity, disclosure, and distribution that enforcing the exclusive right may provide.¹¹⁵

In the digital world, however, documents published by being posted on the public internet can be removed from scrutiny at the pleasure of the right holder. Access can be controlled to allow many gradations of access and dissemination. The tradition of providing for a limited degree of access to published materials that was established in the world of physical artefacts must be continued in the digital context. The mechanisms for achieving this access and the definition of “limited degree” will need to evolve in response to the attributes of digital intellectual property and the information infrastructure.¹¹⁶ Public policy favouring competition and innovation may call into question the enforceability of a term in a mass-market license for computer software that forbids reverse engineering the software.

The general approach in relevant jurisprudence has been to prioritize the economic interests of the right holder over other rights and interests. However, because some concepts are still undefined in relevant copyright law, wiggle room still exists by which the right to learn can be protected. This policy space is analysed in the following section and requires a proactive, rather than a reactive approach to protecting the right to learn in a digital age.

9 Differentiation: An alternative approach for advancing the right to learn in a digital age

This paper goes beyond the utilitarian theory of IP protection (which perceives IP protection as a means for adding benefit to society even if by advancing the private rights of IPR holders),¹¹⁷ to propose adoption of the *differential approach* (whereby IP is seen as requiring flexible models so as to support processes necessary for achieving its various goals)¹¹⁸ for justifying the right to learn under copyright law in the digital age. Under the differential approach to IPRs adopted in this paper, grants of IPRs are justified as a tool by which to support the processes that advance learning.

¹¹⁵ *Ibid.*

¹¹⁶ Samuelson and Randall, *Supra* note 57, p. 20.

¹¹⁷ See Ryo Shimanami (ed.), *The Future of the Patent System* (Cheltenham: Edward Elgar Publishing, 2012), p. 22.

¹¹⁸ Peter Drahos, *A Philosophy of Intellectual Property* (London: Routledge, 1996).

Because the processes that advance learning varies across countries, regions, and sectors, *one size does not fit all* in applying copyrights, TPMs, and DRM to attain the goal of education. Consequently, every country requires flexibility for differential application of IP laws and principles to attain national learning interests. Differentiation can be described as a provision, which allows for variation in the application of IP regulations between countries based on economic considerations, and public interests such as the right to learn and access to knowledge.

Assessment of the Preamble and Articles 7 and 8 of the WTO's *Agreement on TRIPS*,¹¹⁹ shows that the purpose and objectives of the agreement go beyond protecting the economic and private rights of the owner of IPRs, to advancing certain public social goals. TRIPS states that

The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.¹²⁰

Different methods will need to be adopted in applying IPRs to advance social welfare in a digital age than those adopted for advancing economic welfare.

This view of copyright as having both public and private objectives will require the three-step test to take into consideration not only the interests of right holders, but also legitimate interests of users and other third parties. The need to give equal consideration to third-party interests is confirmed explicitly in the three-step test as applied in industrial property law (Art. 17, Art. 26(2) and Art. 30 TRIPS). The differential approach requires a comprehensive assessment of all interests, rather than the usual step-by-step application. No single step is to be prioritized, so as to ensure that the test does not undermine the necessary balancing of interests between different classes of right holders (owners and users) or between private interests and the general public interest.¹²¹ Any contradictory results arising from the application of the individual steps of the test in a

119 TRIPS, arts. 1–5.

120 TRIPS, art. 7.

121 Max Planck Institute Declaration, *A Balanced Interpretation of the 'Three-Step Test' in Copyright Law*, available at: <http://www.ip.mpg.de/fileadmin/ipmpg/content/forschung_aktuell/01_balanced/declaration_three_step_test_final_english1.pdf> ; Reto M. Hilty, *Declaration on the Three-Step Test: Where do We Go from Here?*, 1 JIPITEC (2010), 83; Martin Senftleben, *The International Three-Step Test: A Model Provision for EC Fair Use Legislation*, 1 JIPITEC (2010), 67.

particular case must be accommodated within this comprehensive, overall assessment.

The differential approach does not blatantly override the interests of copyright holders. Rather, it evaluates the functionality of IP regulation, based on how effectively they support the processes that advance holistically both the social and economic objectives of IP regulation. This aligns with the provisions of Article 31.1 of the *Vienna Convention on the Law of Treaties* (VCLT)¹²² that requires treaty terms to be interpreted in their context and in light of the treaty's object and purpose.

Under differentiation, the three-step test should not be applied in a manner that safeguards anti-competitive practices or impedes the establishment of a harmonious balance between the legitimate interests of copyright owners, on the one hand, and competition (especially competition in secondary markets) on the other. One of the key incentives that copyright law offers to original and subsequent copyright holders is compensation at market rate.¹²³ In fact, higher prices must be accepted as long as they result from market-based competition. However, it is not the case that *only* market-based pricing can be “adequate” and commensurate with the interests of right holders. Compensation developed under anti-competitive conditions is unjustifiable.¹²⁴

Legal tools provided under TRIPS to advance public interest objectives include E&Ls to IPRs, anti-trust legislation, regulation of competition, pricing, and compulsory licensing. National discretion on the implementation of copyright is also permitted under Article 1.1 TRIPS, as the WTO TRIPS Agreement does not address in detail either price regulation, or domestic competition policies.

Moreover, creating exceptions for access to digital knowledge in developing countries can be justified under the three-step test regulating exceptions to copyright,¹²⁵ because due to poverty, the right holder cannot expect to earn significant royalties from such markets. Such exceptions will not will not prejudice the rights of the patent owner, but applies the principle of *differentiation* so as to take into account the *legitimate interests* (right to learn) of *third parties* (juveniles).¹²⁶

¹²² *Vienna Convention on the Law of Treaties*, 23 May 1969, 1155 UNTS 331[VCLT].

¹²³ Andrew Christie and Robin Wright, *A Comparative Analysis of the Three-Step Tests in International Treaties*, 45 IIC-International Review of Intellectual Property and Competition Law, no. 4 (2014), 409.

¹²⁴ Hilty (2010), *supra* note 121; Martin Senfleben (2010) *supra* note 121.

¹²⁵ TRIPS, art. 13.

¹²⁶ Christie and Wright (2014), *supra* note 123, p. 430.

Maintaining such domestic policy space is important for enhanced learning. Certain research shows that in bilateral agreements between the global south and north, higher standards are being adopted, with less room for countries to cater for domestic public policies.¹²⁷ For example in a FTA with the USA, Chinese Taipei undertook to amend its copyright law to protect computer programs as literary works and to extend the term of protection to life plus 50 years or 50 years from the date of publication (WT/ACC/TPKM/18, 187) as part of its obligation under the TRIPS Agreement (WT/ACC/TPKM/18, 207).

It must be emphasized that simply producing more technology is not enough. For the “Add technology and stir” approach does not work. Such technology must be adapted to meet the needs of frontline users, such as teachers, women, and girls, and their interests must be enhanced by E&Ls to copyright where necessary.¹²⁸

10 Conclusion and suggestions

The above analysis emphasizes the need for balancing of interests in contemporary copyright regimes. Writers acknowledge that digital technologies offer greater opportunities for use of copyrighted works by free riders and emphasize that this warrants the need to grant greater rights to copyright owners, TPMs, and DRM.¹²⁹ While agreeing that illegal copying and piracy of copyrighted works do not sustain access to knowledge in the long run, there is a need to consider whether the greatest challenge to learning in the digital age is lack of protection of control by copyright holders, or the lack of legally enforceable access rights. In other words, is learning best supported by stronger copyrights, or by strengthening user rights to access knowledge? It is argued here that what are lacking in the current copyright regime are provisions which formalize lawful access, at the substantial level, through enhanced user rights and exceptions to copyright.

¹²⁷ See Henning G. Ruse-Khan, *Principles for Intellectual Property Provisions in Bilateral and Regional Agreements*, 44 ILC-International Review of Intellectual Property and Competition Law (2013), 873, at 873.

¹²⁸ Nneka Nwakanma, *Want a true education revolution? It's time for affordable Internet for all*, in Harold Elletson and Annika Burgess (eds.), *The eLearning Africa Report 2015* (Berlin: ICWE GmbH, 2015), p. 24.

¹²⁹ See Arun Sundararajan, *Managing Digital Piracy: Pricing and Protection*, 15 Information Systems Research, no. 3 (2004), 287; Antonio R. Andres, *The Relationship between Copyright Software Protection and Piracy: Evidence from Europe*, 21 European Journal of Law and Economics, no. 1 (2006), 29; and Sara Alya, “Music Piracy: A Continued Threat to the Global Music World!”, Young Music Boss (27 February 2017).

For while multilateral copyright treaties provide limited exceptions for public interests, they do not make specific obligations protecting access to knowledge and the right to learn. Contemporary copyright treaties regulate the internet and other ICTs, primarily in a manner that restricts, rather than enhances, access to learning materials. Because of the ability of such treaties to affect A2K and the right to education, it is imperative that they should be redrawn to take give unlimited uninhibited affordable access to learning materials, especially to poorer people.

While contemporary multilateral IP regulations contain some exceptions that may accommodate the right to learn, the bulk of these limitations and exceptions are of a permissive character, and there is no requirement for Contracting States to apply them. Because anti-circumvention laws render E&Ls to copyright law ineffective, they ultimately affect access to information, and opportunities for further innovation. Moreover, even if no digital lock is specifically implemented by an author, they may use proprietary or closed-source software to prevent access, which in turn makes it impossible for learners to view such educational documents.

While the international copyright system does not mandate any specific exceptions or limitations to copyright in an educational context, it leaves some flexibility for countries to provide for such exceptions at the domestic level. While many countries have limitations and exceptions for educational purposes, for example through provision of fair use exceptions, countries are yet to take full advantage of the flexibilities available under international law.¹³⁰

Currently, the exceptions provided for such access to such digital learning and to ensure transfer of technology and increased capacity for educational development are generally made subject to the three-step test. In interpreting this test, past jurisprudence indicates that judges have placed more weight on protecting patent exploitation and the legitimate rights of the patent owner, above the legitimate interests of third persons. Righting this imbalance will require countries to optimize the use of the flexibilities already in place under the IP system and to seek for enforcement of human rights, such as the child's right to learn.

Granting E&Ls for the right to learn in a digital environment should not be optional, but made mandatory, in line with the increased protection of private IPRs. Reproductions made for children should be such an exception. An example of how this can be done is found in Article 5.2(b) of The EC Directive, which allows:

130 Bannerman (2016), *supra* note 64, pp. 60 and 75.

reproductions on any medium made *by a natural person for private use and for ends that are neither directly nor indirectly commercial*, on condition that the right-holders receive fair compensation which takes account of the application or non-application of technological measures referred to in Article 6 to the work or subject-matter concerned.

Fair compensation should be variably calculated based on the financial status of a country.

Countries are encouraged to make specific exceptions for access to digital learning skills and processes as part of their national IP legislation and policies; because “similar levels of IP protection will have differential socio-economic impact, depending on the stage of development and cultural contexts of countries.”¹³¹ Moreover the scope of copyright has grown beyond books, music, and other traditional forms of learning, to include computer software (protected as literary works) and databases, where the exclusive nature of IPRs can affect access to learning and the right to education.

With terms such as fair use, public interest, and legitimate exploitation, used in current international IP regulation yet to be defined in concrete terms, countries are encouraged to adopt an instrumentalist approach in interpreting such terms. Instrumentalism requires the flexible interpretation of such terms in such a manner as to advance the public policy purpose of IPRs, which include greater access to knowledge.

As embodied in Articles 7 and 8 TRIPS, the instrumental approach emphasizes the need for balancing creator’s and access rights. One way of achieving this balance is to adopt the carrot and stick approach adopted by UN human rights organs whereby “creator’s and related access rights [are modified] via soft law to build up conflicts with those elements of the international IP system they reject (stick); while emphasizing the necessity to use IP exceptions and limitations to achieve human rights compliance (carrot).”¹³²

Copyright is supposed to protect “expressions of ideas,” and not the “ideas” themselves. However, drawing a line between the two concepts is especially difficult in the case of databases. The frontiers in the protection of databases are pushed further by *sui generis* laws which are in place in many developed countries.¹³³ Consequently, the right to learn should be given effective and adequate consideration in interpreting IP regulation. Exceptions should be provided for educational uses and for use by libraries. For *in this digital age, individuals cannot exercise the right to learning except they are given full access to the technology and skills of digital learning.*

131 Wong and Dutfield (eds.) (2010), *supra* note 106, p. 3.

132 Ruse-Khan (2016), *supra* note 91, at 265.

133 Wong and Dutfield (eds.) (2010), *supra* note 106, p. 12.

Moreover, fulfilling the fundamental principle of equality of educational opportunity enshrined in UNESCO's Constitution is inextricably linked with the principle of non-discrimination.¹³⁴ The requirement to make digital technology affordable and accessible to everyone places countries under an obligation to formulate, develop and apply exceptions to copyright laws that promote equality of opportunity and fair treatment in matters of education.¹³⁵ This can be done using methods that are appropriate for the given situation and also satisfies national interest. In the absence of such specific exemptions, the marginalization, disparities, and inequalities in educational access will increase for many learners, even in the digital age!

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¹³⁴ UNESCO, *Implementing the Right to Education*, A Compendium of practical examples based on the Eighth Consultation of Member States on the implementation of the Convention and Recommendation against Discrimination in Education (2011–2013); (France: UNESCO, 2016), p. 60. [UNESCO Constitution].

¹³⁵ UNESCO Constitution, art. 4.

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