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Worlds in Collision: Copyright, Technology, and Education

by Stephen Marshall

The rise of social collaboration technologies, collectively called Web 2.0 (O'Reilly [2005](#)), and corresponding changes in the skills and preferences of students have posed fundamental challenges for institutions and educators. With their ability to engage learners as potential creators and active participants in the learning process, Web 2.0 technologies offer the potential to improve significantly the quality of education. Stephen Downes ([2005](#)) describes this combination of collaborative technologies and the pedagogical changes needed to embrace them as "e-Learning 2.0," a term that recognizes that it will take as much reflection and analysis to understand the pedagogical implications of Web 2.0 as it has taken to understand the impact of the Web itself (Alexander [2006](#); Barnes and Tynan 2007). At the same time, educators face the further challenge of understanding such implications while remaining within the bounds of intellectual property law, which itself is challenged by the new technological capabilities and the move toward collective creation.

This article examines the conflict between the potential of Web 2.0 technologies, the commercial imperative to maximize the economic benefits afforded by [control technologies](#) and the real effects of intellectual property law for academia and educators ([Exhibit 1](#)). The challenge is ensuring that the legal and technological systems governing our behavior in the real and online worlds match our needs as students, teachers, and researchers.

The Context

In order to understand these tensions, consider the following example from [Second Life](#), a shared environment where users adopt virtual personae to explore a world created predominantly by other users. The ability to manipulate the *Second Life* world allows users to create virtual environments, but the tools have sufficient flexibility that new forms of artistic and creative expression are possible.

Recently, virtual resident Robbie Dingo posted online a video called "[Watch the World](#)" that he created in *Second Life*. This video falls into the category of [machinima](#), short films created within software that was not originally designed for filmmaking; in the closing credits of the video, Robbie Dingo calls his work an "SL Realisation." The four-minute video, accompanied by Don McLean's song "Vincent," starts with an abstract world rendered in polygons, which are then manipulated to create a landscape; the landscape is progressively textured and populated to reveal a physical realization of Vincent Van Gogh's painting *Starry Night*.

While it was not created for educational use or as part of a formal educational process, Robbie Dingo's project illustrates the types of activities that Web 2.0 technologies enable. Rather than forcing users to engage with formally created content, these new technologies allow users—that is, students—to create new content by recombining preexisting media and tools. In Web 2.0, that collective transformation of data generates value. Systems such as [Blogger](#) and [del.icio.us](#), for example, gain value from the content generated by millions of users, not from the work of a designated few. As a result, Web 2.0 technologies naturally lend themselves to pedagogical approaches such as social constructivism, much as Web 1.0 technologies support more transmission-dominated pedagogies, in which value is imposed on a given set of data ([Exhibit 2](#)).

The Harsh Reality of the Law

Robbie Dingo's video is interesting and stimulating to watch—clearly a new creative work of a type that neither Van Gogh nor Don McLean could possibly have imagined. It is not an isolated example; many thousands of similar works exist. However, it is also potentially subject to removal from the Internet at any time should the owners of the various copyrights "misused" in its creation file DMCA takedown notices ([Exhibit 3](#)). The fact that none have yet done so is of little comfort to educational institutions operating in a more visible and commercial setting. Many educational materials run the risk of inadvertently violating copyrights in the same manner even where fair-use exemptions are believed to apply ([Exhibit 4](#)).

In order to understand this, we need to delve into some basics of copyright law. Copyright is fundamentally about ownership. The copyright law of most countries assigns a number of rights to individual creators at the moment that they create certain types of artifacts. While the details vary by jurisdiction, copyright usually exists for original works fixed in a tangible form. The rights bestowed on the creator commonly include the right to copy the work, the right to adapt or modify it, the right to issue it to the public, the right to perform the work, and the right to bestow certain of these rights on others subject to any conditions the creator might choose to impose. A single cultural artifact may contain multiple copyrighted works, all owned by different people. For example, a music CD will, at a minimum, include copyrights for the graphic elements of the cover, the lyrics of the music, and the actual recording of the performances.

The case of Robbie Dingo's video exemplifies the difficulty of determining what constitutes protected content and of establishing copyright jurisdiction. *Starry Night*, which was painted in 1889, is displayed in the Museum of Modern Art in New York. Van Gogh died on July 29, 1890, so in many countries the work is likely to be out of copyright and free for use in the public domain. However, Van Gogh created the painting in France. Under French law, the commercial property rights for a painting extend seventy years after the death of the painter, but the [moral rights](#) are perpetual; the inheritors of Van Gogh's estate have the inalienable and perpetual right to protect his works from modification and disrespect. Moral rights of this type do not exist under United States copyright law, but Robbie Dingo is vulnerable to action under French law even though he may be able to claim fair use under United States law ([Exhibit 5](#)).

Moreover, Robbie had to get a picture of the painting from somewhere; the public cannot take photographs in the Museum of Modern Art. There are many professional photographs of the painting available; these are themselves copyrighted works owned by the photographers or their employers. The copyright status of photographs of works in the public domain has been rejected in the case of *Bridgeman Art Library v. Corel Corp.*, but the general applicability of that case continues to be contested, especially by museums and art galleries (Allan [2007](#)). The duration of these photographs' copyrights is based on when the photograph was published or when the photographer dies. All of these photographs are probably still under copyright protection.

So Robbie Dingo has created an interesting new work that most likely violates the moral rights of Van Gogh's estate and the copyrights of an anonymous photographer. Moreover, he has likely violated the copyrights attached to the sound recording, music, and lyrics of "Vincent." Interestingly, he has also created a new copyrighted work (the video) to which he now owns the rights, although, depending on his country of residence, he may not be able to do anything with his new work without getting the permission of the other copyright owners ([Exhibit 6](#)).

The case of Robbie Dingo's video vividly illustrates the range of complex issues that copyright brings to bear on creative works, including educational materials and the products of educational activities once they become digital, collaborative, and international in scope.

Digital Technology's Collision with Copyright

Much as the complexities and subtleties of copyright law are affecting e-learning activities in unexpected ways, rapid developments in digital technology are challenging assumptions implicitly or explicitly encoded in

copyright law.

The first of those developments is the ease with which digital objects can be duplicated with perfect fidelity and at almost no cost. This ease of copying means that the average consumer can make multiple identical copies without any significant effort or indeed, by virtue of caching technology, without being aware of the copying they are doing ([Exhibit 7](#)). Secondly, the content available on the Internet encompasses diverse languages and cultures, a consequence of the increasing use of the Internet across the globe ([Exhibit 8](#)). That diversity brings with it a diversity of ownership and control expectations arising from different national customs and laws. Users of Web 2.0 technologies are likely to find themselves using, combining, and repurposing information from multiple countries, consequently increasing the likelihood of conflicts between the legal systems of those countries and between the law and the expectations of owners and users ([Exhibit 9](#)). None of these issues are insurmountable; the challenge lies in the need to update laws to account for new technologies while preserving the balances and expectations that govern the use of traditional media. Educators are still exploring the potential and discovering the pitfalls of technology for learning; it is not surprising that lawmakers are grappling with the impact of technology on the assumptions underlying copyright law, a task complicated by the economic significance attached to copyright law.

Changing laws inevitably affect the balance between the rights of different groups. Recent changes to copyright laws in many countries, including the United States, Australia, and New Zealand, have clearly demonstrated that economic growth and the protection of commercial interests are increasingly taking precedence over public access to information and education. Educators in the United States depend heavily on the fair-use provisions of U.S. copyright law to use copyrighted materials from the Internet in education. Internationally, statutory licenses and other commercial arrangements facilitate similar access ([Exhibit 10](#)). However, as Lawrence Lessig (2006) points out, digital technology behaves in the way it does because the code has been written that way. Even when the law or licenses make copying lawful, educators are dependent on the code that structures the function of the Internet to allow the copying and repurposing of media. In theory, that code can be changed to reflect the needs of commercial content providers and to ensure protection of their rights under copyright law. Creating artifacts like Robbie Dingo's video requires copying and modifying original media such as audio and images. In order for students to use the resulting materials, they must copy them as well. Control technologies can introduce major barriers to such activities, even when national laws may provide for exemptions. The major challenge facing educators in the future may not be copyright law itself but the web of technological controls and associated laws that enforce commercial models of passive consumption.

The kind of technology that would enable this enforcement is already in use; for example, content providers like the [BBC](#) use information on the likely physical location of Internet users to control whether or not particular users can access certain content. The goal for many Web 2.0 companies is not the creation of new content but the monetization of existing or freely provided content in new and varied ways ([Exhibit 11](#)). Rather than valuing these technologies as mechanisms for educating new generations, publishers and their agents see educational uses of information as just another market to be developed, and once knowledge has economic value, fair-use rights will inevitably erode.

An Educated Response

Commentators on intellectual property have created dystopic visions of the future for academics (Noble [1998](#)), students (Stallman 1997), and information access generally (Lynch [2001](#)). In the face of the likely impact of the collision between the worlds of copyright and digital technology on education, educators have a number of hypothetical options:

We can pretend that copyright law has no relevance to us as educators or that lawmakers will continue to provide sufficient exemptions for educational institutions, such as the fair-use provisions in U.S. law, that will allow us to continue to use copyrighted materials for teaching without concern.

This is not a realistic option as control technologies and licenses can easily take away what the law theoretically allows. The ability to use or modify a work is meaningless if the work cannot be legally acquired in a particular country or if the playback equipment refuses to recognize it as legitimate content once it is modified.

- We can embrace open licenses like the [Creative Commons](#) and open-source media formats and abandon all use of commercially published and controlled information.

This is not a realistic option if we want our students to be exposed to the full range of available perspectives and knowledge. The Creative Commons and similar initiatives will grow, but they will never encompass all of human knowledge and creative activity. First, open-licensing mechanisms primarily affect new works; the vast body of material created in the 20th century will remain under restrictive copyright ownership well into the current century. Secondly, for new works, assignment of a Creative Commons license requires an affirmative action—unlike traditional copyright, ownership of which is in most countries assigned by default when a work is created—and not everyone will want to or be able to make property open in this way. Many publishers require that they be granted full ownership of the works they publish, which would prevent the creators of commercially published works from seeking Creative Commons licenses for them, and there is little evidence that the commercial publishing industry will embrace open licensing. Many employers retain ownership of works created by employees, restricting the freedom of the creator to choose open-licensing models.

- We can accept the commercial environment that increasingly dominates the Internet and pay the publishers either directly or through licensing fees offered by groups such as the RIAA and international statutory licensing companies and collection agencies.

Inevitably, licenses will have to be part of any mix of solutions. The issue is not that educators must pay, but that the amount is reasonable and unencumbered with conditions and restrictions that reduce academic freedoms. It is also important to note that while licenses can provide access to owned material, they have the seemingly inevitable property of growing in cost over time, and many incorporate contractual conditions that limit or prevent free and effective use of materials for education. The increase in journal fees and dissatisfaction with the constraints imposed by publishers has prompted the growth in alternatives for research publishing such as the Public Library of Science ([PLOS](#)); however, the majority of educationally relevant content remains under strictly enforced ownership.

- We can push for international treaties and national laws that recognize the overwhelming public benefit that arises from an educated populace and the need for that education to incorporate all forms of human creativity and knowledge.

The likely success, or otherwise, of this approach can be illustrated by the [TEACH](#) Act. This law recognizes the contribution that digital technology can make to distance education and to education in general. However, rather than simply providing access to digital resources, the TEACH Act imposes on institutions a set of responsibilities and conditions that require educators to act on behalf of the interests of copyright owners and educate students on copyright issues. Future laws could further compel institutions to adopt policies on behalf of commercial interests in exchange for access to copyrighted materials, protecting the interests of copyright holders at the expense of academic freedom.

Conclusion

As educators, we are faced with an international agenda driven by the goal of maximizing economic returns from intellectual property rather than promoting creative activities and education. We cannot pretend that copyrights do not exist nor can we allow corporate interests to drive international copyright law. Although the responsibility lies with governments to ensure that educators and students are able to continue to engage freely with a variety of information sources, governments need educating about the impact that copyright and control technologies have on education.

Already we have seen, in the passing of the TEACH Act, legislators' tendency to support commercial interests even while providing essential access to digital information for educators. Internationally, copyright treaties provide no encouragement for nations to provide even the minimum access allowed under U.S. law; access to digital materials is stifled by laws that require licenses and by agencies that will not provide those licenses for digital originals. Clearly, educators need to start influencing bodies such as the World Intellectual Property Organization and providing evidence of the impact copyright laws have on education. We need an international recognition of the essential role education plays in stimulating more democratic and productive societies and of the role free access to information and cultural artifacts plays in education.

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