The growth of Web 2.0—which is characterized by openness, personalization, mobility, and immediacy—has profound implications for educational institutions. As we explore the flexibility that is possible in the twenty-first century, enabled by Web 2.0, our efforts to provide quality flexible opportunities for learners are challenged by requirements for increased accountability and attention to quality assurance. The current financial turmoil will result in massive change for post-secondary education, and our values and views of flexibility must surely also come under greater scrutiny.

Flexible learning and the desire to offer more flexible access to education are not new, and neither was flexible learning a new concept twenty years ago when the Internet and the opportunity it presented for more flexibility excited us so much. The ideas of flexibility and flexible learning remain as described by Fleming (1993), Kirkpatrick (1997), Kirkpatrick and Jakupec (1999), and Thomas (1995) in the 1990s. What can we learn from our reflections on the past two decades and how can we use this to help us shape the future of education?

Colleges and universities seek to increase flexibility of access and opportunity, whether it involves entry to education or opportunities to study in more convenient and personalized ways. Flexibility is attractive to students and employers in an increasingly competitive environment; students expect and need greater convenience and flexibility—in their choice of materials, their pace and timing, and their ways of learning. The use of technology and the associated flexible approaches to learning can also allow more flexibility of staffing, and the deployment of staff can be more responsive to changed circumstances. However, the new technologies that offer us so much more opportunity for flexibility are accompanied by new challenges.
As a senior university manager with responsibility for providing the infrastructure and support for learning and teaching, along with ensuring high academic standards and effective quality-assurance approaches, I have found that the desire to provide our students with high levels of flexibility is not straightforward. Among the main issues that claim my attention as an administrator at the Open University are the following:

- How can we provide flexibility without complexity and create minimal confusion for our students and staff? How much choice is too much? Ultimate and infinite choice can restrict learners in ways that are different from those barriers of the past but that inhibit participation just as effectively. Are our students equipped with the skills to make informed choices about their learning and to use effectively the new tools available? Where does our responsibility begin and end in assisting students in navigating their way through the vast array of information and resources freely available to them?
- How can we provide flexibility in cost-efficient ways? As we seek to provide students with choice in relation to the media through which they learn, the approach to a subject, or of the type of assessment, is it possible to offer such choice without increasing costs and workload for staff and students? How do we ensure that learners can use these new forms—do students and staff require new literacies? Our understanding of just what is involved is still developing, and the provision of appropriate staff and student training in relevant ways is compromised. Institutions need to ensure that all materials are accessible—to those with disabilities, special needs, and limited connectivity, and across platforms.
- Maintaining and assuring quality is increasingly difficult in a world where learners create and co-create knowledge. The wisdom of the crowds is not always peer reviewed or quality assured. As our students are accessing the vast and rapidly growing body of information on the Web, how do they and we assess the value and credibility of sources? In a world where academics can build their courses “on the fly”—in real time, incorporating late-breaking news—and where students can create and co-create content, how do we ensure the quality of the materials, assure the authority, and
address the requirement that all learners have an equivalent learning experience? Meeting legal and statutory compliance requirements regarding accessibility and an institution's commitment to equity are challenged by the extent of flexibility that is now possible.

These three areas are profoundly affected by the rise of Web 2.0 and its influence in the lives of our students, as well as its potentially disruptive influence on the ways in which educational institutions are used to conducting the business of education. We are excited and enthused by the opportunities created by technologies, but we must find ways of managing these opportunities in a world that is requiring greater cost effectiveness, higher levels of efficiency, and assurance of standards. In the Web 2.0 decentralized world, we must manage our institutional resources, exploit the opportunities of Web 2.0, and ensure that learners are still provided with the best possible learning experiences and opportunities.

At this stage, we are a long way from having all the answers, but we need to be exploring the questions and their implications. The Open University has a forty-year history of providing educational opportunities to those who previously had been denied access to a university education for whatever reason. We are open to people, open to places, open to method, and open to ideas. So for us, the question of flexibility has always been central.

Over the past five years, the educational community has focused increased attention on Web 2.0 technologies. This term describes a raft of Internet applications that include social networking, wikis, folksonomies, virtual societies, blogging, multiplayer online gaming, and mash-ups (Committee of Inquiry into the Changing Learner Experience 2009). The common characteristic of all applications is that they support Internet-based interaction between and within groups. Web 2.0 tools and services are often described as social software—software that is intended to be run by and for people and that fosters interaction, including social dynamics (Johnson, Levine, and Smith 2009).

Web 2.0 marks a distinct change of emphasis from the Internet applications of the last two decades. It facilitates “interactive” rather than “broadcast” forms of exchange: that is, sharing information from “many to many” rather than transmitting information from one to many.
Web 2.0 applications are built around the appropriation and sharing of content among communities of users, resulting in various forms of user-driven communication, collaboration, and content creation and re-creation. Commentators talk of a “read/write” Web, where users can easily generate their own content as well as consume content produced by others.

**WEB 2.0 MATTERS TO EDUCATION**

Web 2.0 is likely to play an increasingly important role in higher education because it creates an environment where the learner is an active contributor, rather than a passive consumer, of content. As Web 2.0 is inherently social and involves the co-creation and use of knowledge, it fits well with social and constructivist pedagogies.

As long as one has access to the Internet and good bandwidth, the barriers to use are low. Teachers and students can use many Web 2.0 tools at no direct cost and with minimal training and equipment. There are no license agreements but also no responsibilities on the part of the provider. Open accessibility to Web 2.0 means that staff and students could potentially be making use of a wide range of tools—different tools across courses with no assurance that those tools will be available next week, next month, or next year. Proliferation and potentially unlimited choice also restricts the institution’s capacity to provide reliable and informative help desk and student-support services. While students and staff may choose any one of many similar tools, they may not necessarily know the full range that is available and on what basis to decide which to use. They may, therefore, spend unnecessary amounts of time locating, selecting, “playing” with, and becoming familiar with tools before they get down to the business of “learning.”

**Social Networking**

Social networking has become one of the most prominent and popular Web 2.0 tools. In addition to popular applications such as MySpace and Facebook, more specialized sites support professional and other interest groups. Social networking sites provide environments for democratic forms of self-expression and interaction among users. Social networking
applications, which are especially popular with younger users, are oriented toward self-presentation, the viewing of others’ personal information, and institutional life in school, university, or workplace.

Social-networking applications share many of the qualities of a good education technology, supporting peer feedback and matching the social contexts of learning such as the school, university, or local community. The conversational, collaborative, and communal qualities of social-networking services facilitate an active participatory role for users—exactly what we want to encourage in learning contexts.

Social-networking services may also benefit learners by allowing them to enter new networks of collaborative learning, often based on interests and affinities not catered for in their immediate educational environment. This has led to arguments that Web 2.0 will result in the reorganization of educational provision away from campus-based institutions and toward online environments and spaces.

Cloud Computing
Associated with Web 2.0 is the growth of cloud computing and its potential to unbundle and repackage, captured in the acts of ripping, mixing, and burning. The cloud allows the unbundling of services and supports a world of “mashed-up” applications, expression, ideas, and scholarship. Ideas are mashed together with other ideas, commented on, transformed, and embedded as they move around the world. As Katz (2008) reminds us, this unbundling provides academics with unprecedented access to other scholars and amateurs in their field, but it can also cause fragmentation across an institution and disrupt its information, information service, and information resources.

Just as the cloud makes it possible for producers to deconstruct and re-resource their services, it allows consumers to assemble their worlds as they wish. Such an infrastructure that empowers users to configure and contextualize their world directly supports the core educational mission of creating, transferring, and transforming knowledge within communities. And today’s students are doing just that—they are using these tools to arrange their worlds. Higher education is traditionally organized in a producer-centric manner. In an unbundled cloud, where consumers are fully empowered to create their own worlds, students may lose confidence
in the capacity of formal educational institutions to construct curricula that meet their needs.

Virtual and immersive environments such as Second Life can be sites for serious academic work and commerce, and will demand the same quality attention that is devoted to physical campus infrastructure. Already, many staff and students interact in online collaborative environments. When we design these environments, we must ensure that this done in a way that encourages good academic practices and safeguards assessment. The unbundling capacity of cloud capabilities will make it possible for staff and students to assemble just-in-time collaborative environments and infrastructure and open-source tools to facilitate a specific instance of a learning experience. It is important that we have ways of capturing this process—that it is not ephemeral and can be revisited and made subject to scrutiny.

The freedom to mash up, extend, connect, hyperlink, and so on challenges many of our traditional ideas about scholarly quality, method, and literacy. The usability and authority of Wikipedia as a scholarly resource is debated endlessly because of its ephemeral nature and reservations about the bona fides of its contributors. Mash-ups can obscure our understanding of authorship and authority, and the identification of the author.

There is no question that information technology, networks, and the onslaught of digital data can change in fundamental ways how we “do” teaching and learning—our challenge is to ensure that we do not lose sight of what matters in terms of quality pedagogy and learning experiences.

THE DISRUPTIVE POWER OF WEB 2.0

Web 2.0 has a profoundly disruptive capacity. Critics claim that Web 2.0 contributes to the development of “a culture of disrespect” between learners and formal-education providers. (See, for example, Noss and Selwyn 2008.) Students who view themselves as consumers do not hesitate to use social networks to post comments about unsatisfactory experiences with teachers and institutions. Web 2.0 technologies therefore have the capacity to realign power relations between teachers and learners. The empowering nature of these technology practices is welcomed by some, while others describe it more negatively as the sinister downside of modern technology.
Concerns have been raised that Web 2.0 tools distance students from the offline realities of their formal education. Bugeja (2006) claims that the ways in which students use Web 2.0 tools on campus could be interpreted as a misuse of resources. He suggests that many of these tools assist students in disengaging from their studies: “Information in the classroom was supposed to bridge digital divides and enhance student research. Increasingly, however, networks are being used to entertain members of ‘the Facebook generation’ who text-message during class, talk on their cell phones during labs, and listen to iPods rather than guest speakers in the wireless lecture hall.”

It is not surprising that Web 2.0 is currently the focus of educational debate—not least over the continued viability of schooling. We must seek ways to use these technologies to recast learning as more dynamic, desirable, and democratic. If we cannot achieve this, then we risk “dumbing down” education and alienating learners.

**CONSEQUENCES OF WEB 2.0**

In the longer term, there is likely to be a blurring of institutional boundaries as those boundaries become more permeable, with virtual learning environments outside the institution (including people who are not members of that institution) and with more information used by students residing outside the institution. Web 2.0 supports the co-creation of knowledge and online collaborative activities that can transcend institutional and national boundaries, creating truly global and distributed communities of learners. Students who are already using these technologies are not only willing to use them in their learning but expect to do so. Many of these online tools are free and come without the restrictions found in many institutional systems. They offer the ability to aggregate data information and ideas from different sources easily and quickly, and the material remains available to students after they have left the institution.

However, some tools and products may be ephemeral, and there are concerns about the longevity and continued availability of others. It is difficult to keep pace with technologies and products that appear (and disappear) at such a rapid pace. If we are using these tools in support
of learning in formal accredited situations, we are exposed to significant risk unless we can guarantee their availability for at least the life of a course.

We still have much to learn about how these tools can be used effectively in learning and teaching, and consequently, staff development and support lags behind staff need. It is harder (some may argue impossible) to exert institutional control over what happens in spaces outside the university even when those spaces are being used for learning and teaching. The use of external systems means that students may have to make use of many more usernames and passwords, and their learning space may become fragmented.

In a Web 2.0 world, an institution's ability to control access to both the information and the technology that students use in their study is reduced. Students using Web 2.0 will have a number of relationships with different providers.

The current use of Web 2.0 in higher education is best described as ad hoc. There is little real experience of using Web 2.0 in learning and teaching, or in learner support, and it is not yet clear just how to use it to greatest pedagogic effect. Institutions are only just beginning to develop policies to govern and manage its use and to address quality-assurance concerns and appropriate student use.

LIVING WITH WEB 2.0

Web 2.0 is no longer simply the preserve of a few enthusiasts. Technologies are developing rapidly, and our understanding of their value in education is still limited. It will be some time before we understand the extent of the affordances that each technology offers and where each technology is likely to be appropriate and effective. Creation, collaboration, and communication are core to Web 2.0, so it is not surprising that supporters have been eager to identify its potential for supporting and enhancing learning. While the confident claims that Web 2.0 heralds an imminent transformation of learning and teaching are unlikely to be realized, it is extremely likely that Web 2.0 will play an increasingly significant role in higher education, as it will in life and business.
Students enrolling in post-secondary institutions are using Web 2.0 in their social lives and at work, and have probably used it in previous study, so they will expect to use it in their courses. We will need to be ready to respond to this demand and expectation in a way that is manageable and sustainable. We must address the policy and governance gaps to ensure that we can meet our obligations to students and society, as well as to our funders and accrediting agencies.

In 2008, analysts at Gartner Research suggested that Web 2.0 was falling into the “trough of disillusionment” in their Hype Cycle of Emerging Technologies (see Schonfeld 2008). In Gartner’s 2010 Hype Cycle, Web 2.0 no longer appears, being dealt with instead by means of industry- and application-specific examples. However, the impact of Web 2.0 is reflected in the rise, for example, of social analytics.

Our challenge is to manage the increasingly permeable boundaries between the university and the world so that we enhance the ability of staff and students to interact with and participate in the world, while avoiding a fragmentation of coherent university systems. Traditional frameworks for the development of academic knowledge do not sit comfortably with the speed of information sharing and information production that the Internet supports. An absence of new pedagogic models creates uncertainty for students and staff, and this is a challenge that we must tackle with great urgency.

We may have refined the ways in which we use institutional, systems-based technologies to provide flexibility, but Web 2.0 presents new opportunities and new dilemmas. Universities and colleges remain challenged by questions of facilitating flexible learning in ways that are sustainable, affordable, and practical.

REFERENCES


**A B O U T  T H E  A U T H O R**

After working as a manager and academic in a number of Australian universities specializing in flexible and distance learning, Denise Kirkpatrick moved to the UK to work at the Open University (UK). Her current role combines innovation in learning, teaching, and the use of technologies with academic quality assurance. She enjoys the challenges and tensions created by this combination. Denise is passionately interested in the different ways in which learners approach problems and in the creation of novel and creative solutions to challenges in learning and work. She loves working on multiple problems and is constantly seeking new challenges. Exploring the use of technologies in learning and teaching ensures that she is always busy and challenged. www.open.ac.uk/pvc-lt/p2.shtml