Chapter 9
Open Content, Open Learning 2.0: Using Wikis and Blogs in Higher Education

Steve Wheeler

Abstract This chapter focuses on the use of open content social software (wikis and blogs) as online supporting and enabling tools for students in higher education. The chapter presents arguments from both strategic and pedagogical perspectives and focuses particularly on the reality of pedagogical change where self-directed and self-organized "informal" learning, open content, and open learning are challenging the traditionally accepted roles of both students and teachers. The chapter describes approaches used to promote best practice in the use of blogs and wikis for reflective practice, knowledge creation, and the promotion of a culture of sharing and collaboration. It introduces a new five-stage model of online learning activities presented as an adaptive framework and a second model which has been created to enable visualization of Web 2.0 tool integration. The chapter argues that open content tools present opportunities to promote positive changes in university education to enhance quality and extend access, by encouraging student-generated content, knowledge creation, and self-organized learning processes, wherever students are located.

9.1 Introduction

The changes currently witnessed across the entire spectrum of education are far reaching and are impacting upon practice at both institutional and individual practitioner levels. The relentless evolution of new information and communication technologies and the emergence of freely accessible social software on the Web have been instrumental in repurposing the manner in which pedagogy is conceived and delivered in schools, colleges, and universities. Yet, these are the first wave of a sea of changes

S. Wheeler
Faculty of Education, University of Plymouth, Rolle Building, PL4 8AA, Plymouth, UK
e-mail: swheeler@plymouth.ac.uk

U.-D. Ehlers and D. Schneckenberg (eds.), *Changing Cultures in Higher Education*,
DOI 10.1007/978-3-642-03582-1_9,

teachers can expect, and opinions are divided. For many who are observing from inside the educational system, change does not come fast enough. For other observers, change is not welcome at all. The inevitable tensions caused by change and the disruption it creates can be problematic for schools and universities alike. Change is therefore an important process to manage effectively for the future success of education.

I will argue here that changes that are required are not only needed at an institutional level, but must also occur within the "hearts and minds" of all actors in the process – the tutors and the students. Successful use of open content software requires a shift in perceptions and a leap of imagination for teachers and students alike, so this chapter identifies and outlines several strategies that have been employed to encourage pragmatic use, in an attempt to successfully embed wikis and blogs within established curricula.

9.2 Management of Change

Educational institutions are notoriously slow to adapt to change. With the best will in the world, the most enthusiastic professional practitioners can only hope to effect localized change, if the institution does not sanction such change. When an entire institution does accept and implement wholesale change, it can either be held up as an exemplar, or viewed as anachronistic, depending on the prevailing societal mood. In large institutions, change can be embraced and resisted equally, leading to uneven adoption of innovation and the problems of inconsistency this brings. Change, when it is adopted widely, is generally something that is imposed upon the institution from above. Yet, in the age of open access and democratization of knowledge through the Internet and other social media, change of a different kind is beginning to emerge. Referred to as "viral" change, this is generally a self-organized and organic response to the imposition of structure and constraint and is based on the ability of the Web to connect like-minded people, enable them to gain quick access to up to the minute information, and self-organize themselves.

Pedagogical change is rooted in age-old debate over the conditions within which people learn. It has been forged in the heat of centuries of philosophical argument. The tension between inertia and impetus grows as some teachers resist while others adopt new ideas. The management of change in such situations is required to be sensitive, yet responsive to the needs of the entire learning community.

To claim that most of the recent change in education has been technologically driven would be an oversimplification. Other factors such as economic stringency, globalization, and democratization of education have of course played their parts in the changes now being implemented across all sectors of education. Yet, it is often the change that has been brought about by the introduction of new technologies that looms largest and most threateningly in the minds of teachers. Often teachers balk at the prospect of having to learn how to use new technologies, due to lack of time, risk of embarrassment, or challenges to professional integrity. Some are particularly worried that their students may know more about the technology than they do. Yet,

new technologies have changed not only pedagogical practices, but significantly, also teachers' perceptions and expectations.

One of the most significant changes to the business of teaching and learning in the past four decades has been the introduction of "open" forms of learning.

9.3 Open Learning

Open learning operates at a number of levels. It offers an approach to learning that gives students flexibility and choice over what they learn and the location in which they learn it. Open learning also promotes flexibility to enable students to decide at what pace they learn, and when they learn. Students could therefore study in a combination of campus, home, and mobile learning and could take long breaks in between their study to attend to other matters such as family and work commitments. In the last few decades there has been an increased demand for flexibility in education and training, as more mature students return to participate in lifelong learning. There has been a rapid increase in open universities around the world, and there are no signs that this trend is slowing down.

The first truly open forms of organized learning were introduced in the mid-1960s when the mega universities – those with more than 100,000 students enrolled at any one time – began to emerge. The University of South Africa and the British Open University are notable examples of open mega universities – institutions who welcomed anyone through their doors to enable those who had been deprived of a full-time higher education to achieve their degree as mature students. Early public perception of open learning through open universities was that degrees were being devalued and that open universities were second class due to their policies of open access for anyone to study regardless of qualifications. However, as the open universities have striven to create and maintain quality programs of study and have established large and sophisticated support structures for their remote students, public perception has shifted. Open universities are now generally viewed favorably by much of the traditional academic community. Quality has become the byword for open learning, and over the years the early open universities have developed a tried and tested method of mass distance education which has since been emulated by much of the traditional academic community.

What changes has open learning brought to education? One of the trenchant problems of education is the widening of participation. Many are excluded from pursuing studies in higher education due to economic and social barriers, while many more self-exclude due to perceptions that they are incapable of studying at this level. Open learning of the kind delivered by the open universities offers students a "second chance," enabling access to education which is not contingent on previous qualifications, geographical location, or even in some instances the ability to be able to afford the course fees.

Moreover, open learning systems also make resources available that would be inaccessible to traditional on-campus learners (Lane 2008). These might include

local organization of tutorials and study groups, as well as distance support provided by remote tutors. Web-based technologies can offer students rich media content wherever and whenever they study. Nomadic learners – those who find themselves constantly on the move – can now benefit from mobile access to Web resources through ubiquitous and pervasive technologies and wireless services.

9.4 Negotiation of Meaning

According to constructivist theories, people learn by constructing knowledge through social interaction. People learn within social contexts, building upon their existing knowledge through exposure to new ideas and information, often introduced to them by others. The co-construction of knowledge is often based upon conflict and resolution, necessitating continual negotiation between the interlocutors. The synthesis of knowledge arising from this negotiation of meaning can be powerful. Construction of this kind of knowledge is mediated not only through interaction with others, but also by maintaining internal dialog, through the process of reflective thinking (Vygotsky 1978).

9.5 Reflective Thought

Reflexivity is an important concept in all spheres of education and training. It is widely acknowledged that there is a need to develop and nurture learners who are reflective and critically aware. Reflective students tend to think more about what they are doing while they are doing it (Schön 1983), leading to an ability to think quickly and can apply previous learning to new situations. In a society where knowledge goes out of date very quickly and new skills are required "just in time," it is clear that students need to develop reflective skills simply to keep pace with change and survive. Schön argued that the approach to professional training which loaded students up with knowledge that could later discharge when they entered into employment was not a good description of how professionals "think in action." Where professionals are required to continually update their knowledge, learning without reflection is clearly inappropriate for professional practice in a world of constant change.

9.6 Web 2.0

One of the most significant yet poorly defined developments of the Web is the social web. The social web is now referred to commonly as "Web 2.0" (O'Reilly 2005), which for some signifies a second iteration of Web 1.0. However, the term "Web 2.0" has been challenged by Web pioneer Sir Tim Berners-Lee (Anderson 2006)

who points out that most of the social tools now attributable to Web 2.0 have been in existence since the early days of the Internet. If Web 1.0 was the "read only" web, then Web 2.0 must be seen as not only the read/write web, but also the listening/speaking and doing web, because it demands and attracts a great deal more participation than has been previously observed. Web 2.0 is not a revolution, but rather an evolution from previous web activities. It is more about community involvement, interaction and sharing than it ever was in the past. It has been a gradual transition from "the quagmire of stickiness" to "the architecture of participation" espoused by the likes of Tim O'Reilly (O'Reilly 2004) and other Participatory Web champions.

Web 2.0 then, is more indicative of the new ways in which people are using the Web than it is about the tools. Because "Web 2.0" is universally understood to represent these social dimensions of the Web, it is the term which will be employed throughout this chapter. As we shall see, the notion of "2.0" lends itself not only to a reconceptualization of how web tools can be used, but of learning *per se*. Hence, we will also refer to "Learning 2.0" as a spectrum of pedagogical approaches that draw heavily upon Web 2.0 tools and services. Web 2.0 encompasses the emerging sociable web which hosts a continual stream of new services, while Learning 2.0 draws upon participative, democratic, and collaborative methods.

Blogs and wikis and other hosted services enable users to generate and broadcast content, share resources, connect into communities of interest, and generally communicate more effectively to a potential worldwide audience. The potential of this "architecture of participation" is gradually being harnessed by teachers worldwide to promote deeper and more engaging learning within socially rich and collaborative online environments.

9.7 Open Content

Open content software has been available since the inception of the first word processor. Teachers have used open content software such as PowerPoint to good effect, creating content for presentational purposes. Since the advent of Web-based media, content can now be made available for students to access any time, any place. Yet, teachers will miss a vital opportunity to transform the learning experience if they stop there. One of the changes that some teachers find difficult to countenance is the concept of learners generating their own content and becoming managers of their own learning. This increasingly applies to all sectors of education and therefore to all age groups. The old adage of the "sage on the stage" stepping away from the center of the learning process to become the "guide on the side" is an exemplification of the humanistic and democratic student-centered learning philosophies espoused by the likes of Dewey (1916) or Rogers and Freiberg (1994). It presupposes that students are self-motivated and are able to assume ownership and responsibility for their own learning. Such proactivity however is not always forthcoming, so teachers often revert to behavioral, didactic, and instructional techniques to draw reluctant students back into learning. The argument for self-directed learning

is that such learners engage more deeply when they are facilitated but are more superficial in their approach when being led.

Open content tools can play a significant role in the promotion of student-centered learning in a number of ways. Firstly, tools such as blogs enable learners to create their own online reflective journals which they can then choose the share with an audience of authentic readers. Secondly, the use of photo-sharing services such as Flickr can encourage learners to be more creative in their image-making and presentational skills. Thirdly, the abundant availability of free hosted services including podcasting and audio broadcasting tools, photo- and video-sharing sites and associated services has allowed a myriad of small self-organized communities of learning and interest to coalesce. Finally, open content tools such as wikis are able to promote collaborative writing within shared online spaces. We shall return to evaluate the contribution of some of these open content tools to open learning later in the chapter.

Ultimately, such groupings lead to the generation of a host of digital artifacts, many of which can be of great interest and use to not only the groups themselves, but also to individuals. It is inevitable that individuals will reuse and repurpose photos, videos, texts, and audio resources for their own personal learning purposes. This is the essence of what has become known as "Learning 2.0."

9.8 Learning 2.0 and Self-Organization

As previously indicated, Learning 2.0 is representative of the many ways in which learning (and teaching) is changing as a result of the introduction of Web 2.0 tools and services. It reflects learning in a new digital age where new practices are emerging and where the openness of learning is increasingly pre-eminent. That students are able to participate in a democratic, self-organized form of learning that is often outside and beyond the boundaries of conventional education is central to the theme of Learning 2.0. Self-organized learning not only connotes students taking responsibility for their own learning, but also points up a radical change in the role and function of teachers. They become less central to the learning process in Learning 2.0 and begin instead to adopt the roles of resource and mentor for learners. In Learning 2.0, teachers provide their students with the environment and resources to learn and assess learning, but they are no longer exclusively responsible for the delivery of content – instruction makes way for facilitation.

Another important influence on Learning 2.0 can be ascribed to connectionism – hailed as a new learning theory for the digital age. Siemens (2005) holds that within our new knowledge economy, the ability to form connections between sources of information and thus develop useful information patterns is essential. Our social connections and knowing how and where to find the information we require, he says, are the most important skills of the information society. The connectionist approach, he believes, enables new forms of knowledge to be framed in a time of

significant change and upheaval. Siemens argues that many of the learning processes from traditional learning approaches can now be offloaded onto, or supported by, new technologies. There is an assumption behind this theory that technologies can act as mind-tools, to enhance, extend, or even amplify the capabilities of the human mind.

Finally, Learning 2.0 presupposes that students are continually engaged with informal kinds of learning, gaining knowledge and skills outside of the formalized settings of school, college, and university. Informal kinds of learning can come from almost any extracurricular activity, but notably through handheld games, casual internet surfing, and visual media viewing. Informal learning is a driver for the adoption of individualized digital learning environments – those which are now commonly referred to as personal learning environments or PLEs.

9.9 Personal Spaces for Learning

PLEs can take almost any form imaginable, through the use of contemporary digital technologies and tools. Indeed, digital tools and environments can be combined with other resources to create PLEs too. Creating spaces for learning that are personal, whatever they are made of, is essential to the doctrine of student-centered education.

For many living in the digital age, personal learning environments consist of a number of online social networking tools, blogs, and communication tools. Social bookmarking and tagging become important for those who wish to create useful and unique pathways through the morass of information that is found on the Web. Probably, the most important feature of the PLE is the communication tool – this can be simply an e-mail account, but increasingly learners are turning toward the personalizable and multifunctional social networking tools such as Facebook, MySpace, or Ning for their needs. An issue of critical mass is present. Many users would argue that it is easier to network and keep social contact alive and functioning, particularly if the service of choice is populated by all of the user's community of interest. Other tools such as the microblogging tool Twitter, a sort of short messaging service for social networking, are becoming increasingly popular and are on the verge of going main stream as an essential part of many people's personal learning spaces.

9.10 Social Connections for Learning

It has long been argued that people rarely learn within a social vacuum. From the early days of Socratic discourse, where learning was evoked as a direct response to questioning from another, through to the more sophisticated trappings of the online social network, people learn as a response to challenges, discussion, and collaboration. Learning that takes place within a socially rich environment is no longer specifically dependent upon "the other" though. Digital learning

environments enable learners to also call upon resources and artifacts that have been created by "the other" and enable learners to share their thoughts and reflections through the same tools and spaces, thereby forging valuable and sustainable dialog through audio, text, and object-based conversations.

Such social connections work at a number of different levels. Some represent weaker social ties than others, but all connections, whatever their strength and extent, empower the learner with the capability to tap into a vast and seemingly endless supply of opinion, knowledge, skills, and resources that go beyond anything a single individual would be able to muster. It would also be reasonable to argue that such benefits surpass those offered by even the most highly resourced institutions. Web 2.0 tools, when integrated into a PLE, can offer connections that are immediate, rich in dialog, and archived for later retrieval.

There are a number of generic tools that occupy the space in which reflective learning and collaborative learning can interact. These include the wikis and blogs themselves, but also tools such as micro-blogs, image sharing tools, and podcasting facilities. Such tools enable learners to generate their own content and share it with their peers, so that reflection, dialog, and collaboration can be triggered by these artifacts. Students in one study reported that exchanging artifacts strengthened social ties and facilitated more effective collaborative learning later in the course (Minocha and Roberts 2008).

9.11 Adaptive Frameworks

One of the quests for teachers in the digital age is to try to create combinations of tools that provide learners with the best possible learning environments. Combining the reflective approach to learning with collaborative activities in which students engage collectively with learning materials has been one of the approaches taken by the author.

Figure 9.1 presents a conceptualization of how reflective and collaborative tools such as blogs and wikis could be combined and the resultant potential for co-construction of knowledge and learning within a community of interest. Note that the most powerful region for change through negotiation of meaning and the resultant co-construction of new knowledge is at the nexus between spaces – the point where students may be uncertain about how they will proceed or what stance they should adopt.

9.12 Blogs

Students use their personal blogs to create a running commentary on their learning journey, as well as to communicate their ideas to their peers. They can also pose questions, challenge concepts, and post comments on other people's blogs. Because of the asynchronous nature of the posting and commenting, blogs are an ideal tool

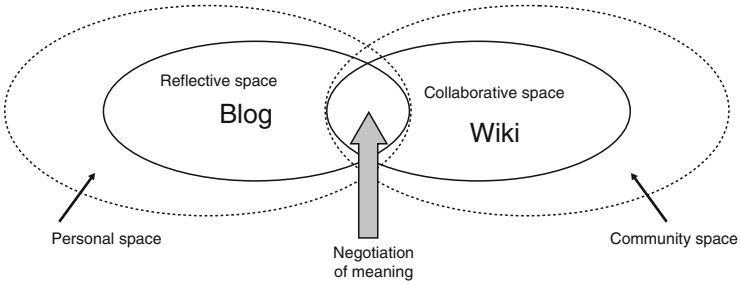

Fig. 9.1 Negotiation of meaning within shared spaces

to promote reflective forms of learning. Ostensibly, blogs are recognized as personal tools that resemble diaries, but in online format, and made available for others to read.

Most regular bloggers are acutely aware of their audience of readers and tend to write carefully to present a favorable impression. As social beings we are naturally aware of our social context and take care to present our "best side" to others. Goffman (1959) suggests that individuals tend to carefully manage their impression by presenting a "front stage" version of themselves in public, which can greatly contrast with the self that is seen "back stage." It is highly likely that evidence of impression management might be present within the written postings of students on blogs, due to the potential for large, unseen audiences made up of casual web visitors. Such a phenomenon has already been observed in previous studies of students using blogs (Miller 1995) and also on social networking sites (Wheeler et al. 2008). It is therefore possible that some students could be reluctant to participate if they perceive the need to adapt their writing styles, or open their ideas up to scrutiny from a hidden audience. Students may be resistant to their tutors asking them to post regular blogs, seeing it as an extra imposition which may have no immediate reward. If blogs are to be successfully integrated into the learning process, tutors should ensure that they are viewed as nonthreatening (Ojala 2005), not directly imposed upon students (Farmer et al. 2007), and as having a real pedagogical purpose and measureable outcome (Kop 2007). This may require blogging to be assessed as a formalized assignment requirement.

9.13 Wikis

Rich in its collaborative potential, the wiki can be located firmly within the sphere of community. Wikis are websites that can be edited and added to by anyone who has been given access. Bruns and Humphreys (2005) like the idea of a nonlinear, evolving, complex, and networked environment which is created and sustained by multiple authors. These conditions, they suggest, provide opportunities for increased collaboration, argument, and interaction between group members.

Several recently published studies have highlighted the advantages of using wikis to promote collaborative learning (Trentin 2009; Bruns and Humphreys 2005). These studies also suggest that there are difficult issues to be addressed, and that some aspects of wikis may not always be welcomed by students. Wheeler et al. (2008), for example reveal that although many students readily posted their own content to the wiki (usually in the form of useful hyperlinks and brief descriptive annotations), they were often more reluctant to edit the content posted by their peers for fear of causing offense. Such a constraint negates a major affordance of the wiki – that it can be used as a shared space to encourage cooperative activities between all group members. Furthermore, sustaining students' activity on Web 2.0 tools in formalized setting can be a struggle. With both wikis and blogs, students often experience difficulty keeping their engagement going. They may post content, read, and comment initially, but more often than not, interest and involvement tails off after a short time, due to lack of time, loss of impetus, or simply a perception that posting new content is a waste of time. The last issue rarely arises if other students respond to posts with comments, providing the learner with encouragement to post more. Another issue that created barriers for students was the inchoate and chaotic nature of the wiki.

9.14 The Five-Stage Wiki Activities Model

To enable wiki activities to be presented in a structured way, a five-stage model was devised by the author in direct response to the problem of lack of engagement. The five-stage model encourages a progression of engagement from solo inquiry to group collaboration through increasingly complex skills acquisition and application (modes). It also illustrates the journey from superficial technical, social, and academic content through to deeper levels of skills and knowledge construction (activities). There are elements of reflection present throughout the entire process, because learners are expected to contextualize each activity into their everyday professional practices.

Those who intend to teach using collaborative online tools might adopt a progressive activities approach to draw students into using wikis. For example, an Exploration activity might involve students posting a simple short biography "About me," which can then be shared with the rest of the group. Students can be asked to upload a picture representing them. Although this is a simple task, it serves several purposes; students learn how to upload images, post, and save content on the wiki. They also read other students' "About me" contributions, and learn more about their peers. They begin to engage with the tool and also with each other. At the second level, students can Exhibit some of their discoveries – sharing a useful hyperlink with notes onto the "Useful Links" page for example. At a deeper level, students might be required to offer Explanations – they can explain for example, why they prefer one particular theory over another using the discussion

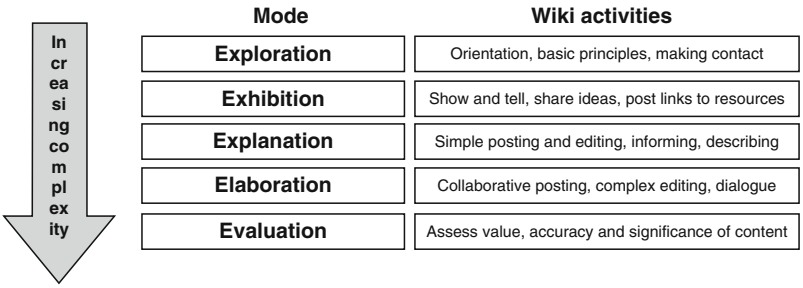

Fig. 9.2 Five-stage wiki activities model

boards – and defend their explanations against any challenges. At an even deeper level of engagement within the wiki, students may need to Elaborate on their decisions, postings, or contributions within collaborative writing exercises. Progressive writing tasks can be assigned to pairs or small groups, in which the students research and present their mini projects and justify their decisions. Finally, an Evaluative element can be brought into wiki activities to encourage students to assess, challenge, and question the value, accuracy, and relevancy of all content on the wiki. Recent studies by the author and colleagues report that such activities have been welcomed by students and have produced quality learning outcomes such as better academic writing (Wheeler et al. 2008; Wheeler and Wheeler 2009). The full model is presented below in Fig. 9.2.

9.14.1 Benefits

The wiki activities provided a form of scaffolding, giving students an initial template and guidance on how and what to add to the space, and a sequence and timescale within which to complete each task. Issues of critical mass (McPherson and Nunes 2004) did not exert a noticeable influence on engagement, possibly due to the reasonable group size (average = 18), and the fact that regular face-to-face sessions supplemented the wiki activities, which maintained the impetus of the students' wiki usage. After each face-to-face session, wiki activity subsequently increased and then declined after a few days. Coupled with the structure and naturally progressive nature of the wiki activities, students were observed to maintain their own momentum, both singularly and collectively. Within the first two terms of the academic year (October to March), the 14 groups of students between them ($n = 237$) generated in excess of 65,000 wiki transactions including more than 1,000 message postings and over 3,000 page edits. Some teacher trainees were so impressed by the concept of the wiki as an online shared learning space that they implemented similar projects with their own students.

9.14.2 Limitations

Many students resented using the wiki however, due to a common perception that working online to create their own content was yet another task they needed to complete in an already busy program. This was, however, more a reflection on the demanding structure of the general program of study than it was on the wiki. There were problems with the implementation of the wiki, though, including lack of initial training on accessing the wiki, page editing, and using discussion pages. Most students succeeded in overcoming this through trial and error and supporting each other. Some unfortunately disengaged after several unsuccessful attempts. A greater problem was inadvertent deletion or overwriting of someone else's content. Invariably when this occurred, technical intervention was required to roll back the page to its previous version to restore earlier content.

Generally, the wikis were used successfully to create useful repositories for professional knowledge, and some students found these engaging. Most students were reluctant to edit the work of others, but consensus was reached over much of the content they created, using discussion and a wiki activity in which the group decided on "wikiquette." Further problems arose when two or more students attempted to edit the same page simultaneously, frustrating those who could not access the page to complete their work. As a collaborative tool then, the wiki was not directly successful, but due to the additional tools such as discussion groups, students were able to use the wiki to collaborate indirectly. The wiki activities were useful scaffolding to encourage students to use the space and maintain impetus. Future use of wikis in teacher education should take these effects into consideration (Wheeler 2008).

9.15 Conclusions

There is a clear indication in the preceding text that there is a place for Web 2.0 tools such as wikis to be used as shared, collaborative spaces to enable students to create and discuss their own content. It is also apparent that blogs can play a particular role in encouraging reflection in learning. Both have been used successfully in authentic teaching and learning contexts, and both have a great deal to offer in an age of digital communication. What is less clear, but starting to emerge, is the many ways Web 2.0 tools can be used in combination to promote more holistic forms of learning which encourage personal reflection and group cooperation. This chapter was written to illustrate some of the work that has been undertaken to attempt this approach. There have been mixed responses, some successful, some less so. Many factors militate against the successful use of Web 2.0 tools in education, including lack of skill and knowledge, insufficient technological infrastructure and support, and reluctance by some to enter into areas of significant change. Most issues can be successfully addressed, but this author believes that the most trenchant issue will remain resistance to change – a problem that will need to be carefully and sensitively managed if Web 2.0 tools are to become mainstream educational resources.

http://www.springer.com/978-3-642-03581-4

Changing Cultures in Higher Education
Moving Ahead to Future Learning
Ehlers, U.-D.; Schneckenberg, D. (Eds.)
2010, XXXIV, 533 p., Hardcover
ISBN: 978-3-642-03581-4