

# Chapter 34

## Social Issues and Web 2.0: A Closer Look at Culture in E-Learning

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### ABSTRACT

*Developing the foundations for intelligent applications that efficiently manage information is one goal of Web 2.0 technologies and the Semantic Web. As a result, the organization of Web 2.0 and other Semantic Web approaches to learning hold significant implications for learning, especially when one considers the role of cultures in learning and e-learning. Exploring how these technologies impact learning, this chapter focuses on social and cultural issues from potential users' and learners' standpoints. Furthermore, the chapter offers dimensions of cultural variability as a framework for its arguments. The chapter draws from existing literature and research to present implications of Semantic Web and Web 2.0, along with the issue of digital divide which is critical when exploring access to Web 2.0 technology platforms. The chapter ends by addressing key implications for Web 2.0 and the Semantic Web regarding usage and general effectiveness in the learning context.*

### INTRODUCTION

Web 2.0 promises a more powerful, more engaging, and more interactive user experience that will revolutionize the way people interact with information technologies and resources, especially in learning environments. The Web 2.0 approach to public web reshapes the relationship between how users connect and use information. While Web

2.0 is not a technological innovation *per se*, it is changing the landscape of information, knowledge acquisition and dissemination and the role of users. This is accomplished through the read/write feature that allows learners and users to author or edit information in a way that suits their goals or learning needs.

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## SOCIAL ISSUES AND CULTURE

This chapter discusses learning in the context of social interaction. Learning and knowledge management is increasingly being conceived as a social activity, where communication technologies are used as tools to help learners and individuals become increasingly aware of their social environment in the learning process. To this end, e-Learning is undergoing paradigmatic shift from an organized and formal network context to an informal and spontaneous network context, otherwise referred to as Web 2.0 or semantic web environment. Learning technologies, courses, and learning objects--anything that is pedagogically formal, closed, and developer/teacher-driven is considered passé because the current emphasis on constructivist ideologies of making learning fun, user-driven, and informal are now paramount. This approach, however, is currently under scrutiny because not everyone subscribes to this method of learning. Therefore, information technology (IT) designers are trending toward a new zeitgeist where they replace standardized courses with *in-context* learning or learning on demand (Braun & Schmidt, 2006a), a trend of great import when the context is heavily influenced by culture.

The Web 2.0 is a new generation of web applications developed to harness the power of the web to create a new standard in human computer interaction (HCI). The majority of the technologies classified under Web 2.0 are prevalent in social networking communities, eLearning, professional business and organizational environments. Given that Web 2.0 is not a term that refers to any specific or new form of World Wide Web (W3), instead, it refers to the aggregate of social software that uses the Internet as a platform for which such devices can be connected (Kenney, 2007; O'Reilly, 2005). Web 2.0 is used largely as a metaphor to suggest a major software upgrade to the W3 (Tredinnick, 2006). A key goal of these technologies is to bring about *network effects* for users to participate. Examples of social software

that enable Web 2.0 for collaboration include blogs and its multimedia companion such as pods and videocasts (Cameron & Anderson, 2006; Kenney, 2007), wikis, distributed classification systems, flickr, and RSS feeds (Dron, 2007; Mejias, 2005). Essentially, Web 2.0 is an idea that includes enabling technologies that facilitate read, write, and edit features that reflect semantic web. IT designers and platform theorists are giving Web 2.0 and its possibilities considerable attention. While the technology has much to offer individuals and users, the technologies face significant social and cultural challenges and especially as they relate to knowledge and platform of choice in global organizations, education, and eLearning.

The goal of the semantic web is to develop a basis for intelligent applications enabling more efficient information use through collections of repository knowledge (Schoop, Moor, & Dietz, 2006). As such, IT designers have offered the semantic web as a valuable resource in achieving the goals of eLearning or distance education and training often embraced in global organizations and their respective workers. For example, knowledge gap analysis can be automated by competencies and learning objects that are connected through ontologies (Sicilia, 2005). It follows that the organization of Web 2.0 and other semantic web approaches to learning holds significant implications for learning and cultures that the literature rarely addresses. With this in mind, the proposed chapter explores, in general, how these technologies impact learning by focusing on social and cultural issues from potential users' and learners' standpoints.

The driver of Web 2.0 involves user's ability to create and publish content online at will using the read/write features of the web (Richardson, 2007). Building upon this always open and ready environment, the social component of the Web 2.0 platforms helps users engage in high, seemingly unlimited, levels of interactivity with the technologies and other users. More important, however, is the role of Web 2.0 in educational pedagogy.

While Web 2.0 focuses more on in-context learning and application of social relationships to the learning environment, it does not mean that the technologies that support Web 2.0 are becoming more context-aware by responding to contextual needs. Instead, the technologies are only able to provide learning content in a given context and allow for networking in a social web (Braun & Schmidt, 2006a), usually the context and culture of the developer. One limitation of Web 2.0 from this standpoint is culture, which raises significant challenge to Web 2.0 and its use in eLearning and other knowledge management systems.

With this conclusion in mind, the dimensions of cultural variability is a theoretical/philosophical approach to exploring cultural issues proposed by Geert Hofstede (1980) that will frame the arguments for this chapter. Drawing from existing literature and other research, implications of semantic web and Web 2.0 on the digital divide among societies will be addressed, with emphasis on the potential mismatch between semantic technologies and user needs and requirements. Finally, the chapter addresses key implications for semantic web use toward effectiveness of the technologies.

## **SOME KEY CHALLENGES TO WEB 2.0**

Tredinnick (2006) defines Web 2.0 as a process of ceding control over applications to users, enabling users to extract information and data and to use or reuse the information and data as the user sees fit (i.e., flexibility), while enabling users to change the structure of the information. In essence, Web 2.0 or the semantic web allows a shift from what is known as knowledge push of the traditional teacher-centric to knowledge pull or learner-centric and interest-oriented approach (Lytras & Naeve, 2006). However, the idea of ceding control to end users of information with Web 2.0 creates some challenges. One of the general arguments

in favor of incorporating newer communication technologies into education and learning curriculum is the fact that technologies enhance learners' capacity to determine how they learn, especially in eLearning environments (Dron, 2007; Olaniran, Savage, & Sorenson, 1996). Dron (2007) argues that choices are made by both teachers and learners in a learning environment; however, the degree to which a person dictates the choice determines the amount of transactional control in a given setting. Dron (2007) defines autonomy as the level of control students have over a learning environment. Further, this autonomy is dramatically increased in Web 2.0 facilitated learning environments because teachers must yield significant control to learners. As teachers yield increased control to learners, learners increasingly must take charge of how they learn. Therefore, students in these environments have pressing needs to know that their varied sources of information are valid and reliable, and teachers need to know that what is presented as student learning is authentic.

From a socio-context approach, it is the responsibility of the teachers to set the tone for learning and to guide students through learning. However, with Web 2.0, ceding control to students and learners implies that students must assume some of the instructor's role by taking charge of how they learn. By implication, this suggests that students come self-equipped with the knowledge to determine what and how they must learn. However, this implication misleads; 1) students may be not only be novices about the content but may even be novices about their own learning styles, making them ill-equipped to master course objectives. If, the latter conclusion is the reality, the notion of learners controlling how they learn is fundamentally flawed. Specifically, how can society at large be confident that learners have indeed learned what they claimed to have learned? Clark (1989) hinted at this problem when he found in his study that learners without adequate guidance perform poorly on post-test measures, especially when compared to pre-test evalua-

tion measures. This raises at least two poignant questions: Can instructors put much trust in what students are presenting as evidence of learning? How can instructors gauge the difference between original student-constructed learning and products assembled to give the appearance of learning?

Beyond the issues of autonomy and control, scholars (e.g., Aviram & Matan, 2005; Lytras & Naeve, 2006) have identified other key social challenges or weaknesses facing the semantic web. Lytras and Naeve (2006) identified the fact that semantic web cannot:

- Discourage knowledge emulation
- Increase the motivation for deep and reflective learning
- Substitute for our local networks and personal relations

As far as semantic web not able to discourage knowledge emulation – the issue is that in the emerging knowledge emulation society, the emphasis is on what a learner can convince others that they know rather than what they actually know. Lytras and Naeve (2006) argued that the inability to discourage knowledge emulation is a “*disease*” that is spreading rapidly. The easy accessibility to updated materials from other learners, teachers, and experts that can be *cut and pasted* or repackaged as one’s idea speaks to this problem. The repackaging or cut and paste mode of learning hinders motivation and reflective learning. Lytras and Naeve (2006) indicated that in the information overloaded environment such as in the semantic web, concern for efficiency dictates cut and paste and readily available content that can be used especially when it is difficult to find the time to compose or create original thought. Some scholars went further arguing that the convenience of the Internet and the open web is creating poor research habits where learners rely more on using the open web rather than the library, for much of their research and consequently plagiarism is major concern on many campuses (Jones &

Madden, 2002; Level & Hoseth, 2008). In such an environment, it is difficult for deep and critical thinking to occur. Similarly, semantic web cannot substitute for local personal networks. In essence, there are still needs for face-to-face networks and interpersonal encounters (Aviram & Matan, 2005; Olaniran, 2007b). Lytras and Naeve (2006) describe the increase time and emphasis on web-based global networks as: “connecting globally” and “disconnecting locally” (p. 488). For example, students’ formal papers too often devolve into the stylistic formatting found in web interactive patterns such as chatting.

## **DIMENSIONS OF CULTURAL VARIABILITY AND WEB 2.0**

The way people learn is a direct reflection of their culture, given the fact that culture represents the attitudes, values, and belief systems that guide who we are and how we perceive our environment and the way things are and how we conceive that they ought to be (Olaniran, 2007a). However, cultures vary— as do learning styles. While some have attempted to refute this claim (e.g., Ess, 2002), Sellinger (2004) finds a vivid evidence of a cultural impact on learning styles in Web based eLearning among South African’ learners. In fact, cultural attitudes, values, and belief systems covary with learning styles. Therefore, semantic web development that driven by the culture and learning habits and traditions of one part of the world may limit the usability of Web 2.0 resources for all cultures. Along this line, Hofstede (1980) offers his enduring dimensions of cultural variability to account for the differences in culture globally. He emphasizes the pervasive role of culture in societies and in what he later refers to as the software of the mind (Hofstede, 1996, 2001). The dimensions of cultural variability consist of four dimensions including power distance, uncertainty avoidance, individualism, and masculinity (Hofstede, 1980, 2001; See also

Dunn & Marinetti, 2002 overview of cultural value orientations and cultural dimensions). These four categories result from data collected from fifty countries and three world regions (Hofstede, 1980). Past research used these four dimensions to operationalize cultural differences and their effects on uncertainty reduction in intercultural communication encounters (Gudykunst, Chua & Gray, 1987, Olaniran, 1996). A brief description of the four dimensions supports the notion that culture is omnipresent in the lives of all humans, and it can vary along all of the dimensions. These four dimensions include power distance, uncertainty avoidance, individualism-collectivism, and masculinity.

Power distance, is “the extent to which the less powerful members of institutions and organizations accept that power is distributed unequally” (Hofstede & Bond, 1984, p. 418). Therefore, societies with a high power index, like many (but not all) found in the developing world, tolerate inequities with strong support across all levels in society. Uncertainty avoidance describes “the extent to which people feel threatened by ambiguous situations and have created beliefs and institutions that try to avoid these” (Hofstede & Bond, 1984, p. 419). With this dimension, low uncertainty-avoidance societies have strict rules and laws that cannot be violated. Individualism-collectivism acknowledges the fact that in individualistic cultures, “people are supposed to look after themselves and their family only,” while in collectivistic cultures, “people belong to in-groups or collectivities which are supposed to look after them in exchange for loyalty” (Hofstede & Bond, 1984, p. 419). The United States is a classic individualistic culture, one reason U.S.-inspired popular culture can clash with that of societies that have a more collectivist orientation. Masculinity refers to cultures “in which dominant values in society are success, money and things,” while femininity refers to cultures “in which dominant values are caring for others and quality of life” (Hofstede & Bond, 1984, p. 419-420). If a global

e-learning architectural Web 2.0 platform is an earnest goal, then consideration of these cultural dimensions is imperative.

Both power distance and the individualism-collectivism dimensions hold important social implications for Web 2.0 and the semantic web application for learning and especially eLearning. For instance, part of the requirement for ceding control to users, is based on the belief that it promotes democratic access and information manipulation (e.g., Braun & Schmidt, 2006a; Tredinnick, 2006). Certainly, the idea of democratic participation in information and knowledge management underlies individualistic and low power distant cultures and the accompanying constructivist ideologies popular in Western society’s learning and educational environment (Olaniran, 2007a). With constructivism, emphasis is put on making learning fun and allowing students to take increased control in how they learn.

However, not all cultures subscribe to this particular ideology, as high power distant cultures subscribe to the fact that teachers are knowledgeable and authoritative figures whose job is to guide and instill in students their knowledge and experiences that students in turn can acquire. From this standpoint, Web 2.0 technologies are best suited to Western cultures; but when transferred or promoted across cultural boundaries, they become a way to undermine non-Western cultural ideals (i.e., collectivistic and power distant cultures). More importantly, there arises the contention between whether individuals from other cultures can successfully use these technologies. For instance, the issue of general literacy and systems or technology literacy required for using technologies becomes paramount. Based on an earlier argument, Web 2.0 or social software is developed to become context aware. However, this is not necessarily the case. When crossing certain cultural boundaries, this software brings a Western set of ideals for learning, and may not do a good job simply because the technology *per se* does not adapt to people; rather it is people who must adapt and

appropriate these technologies. Of significant importance is access to the web and accompanying Web 2.0 that powers the semantic web. Most individuals in the less economically developed countries (LEDCs) do not have personal computers to access the W3 due to cost constraints and other infrastructural problems (Olaniran, 2007a). While attempts to offer increased access through mobile technology are growing, limitations of this capability persist.

It has been suggested that Web 2.0 is an idea to make users *self-determined* masters of the web and that learners ignore the affective dimension of information seeking, human interactions, which deny the importance of necessary teacher guidance (Braun & Schmidt, 2006a 2006b). In other words, social relationships have huge impacts on human behavior.

An example of the effect of social relationships on learning is from whom an employee or learner chooses to seek information. A common logic would suggest that individuals are more inclined to seek information from knowledgeable experts. However, Braun & Schmidt, (2006a) argue quite the contrary, that people, instead may opt to seek information from those individuals that they are on good terms with, given that asking for help implies some degree of weakness and risk of vulnerability. In so far as individuals do not like to appear vulnerable to those with whom there is tension in their relationships, they may opt for a friend who is somewhat competent over an ultimate expert. Thus, the quality of the social relationship mediates the quality of information in the long run (Braun & Schmidt, 2006a; Tang & Soloman, 1998). From another perspective, identified experts in workplace knowledge management can become so overloaded with inquiries that it becomes difficult for them to get their work done. Braun and Schmidt (2006a) argued that this overload is not only due to objective overload and bad timing, but also consideration for relationship to the learner, given that there are certain individuals that one cannot say no to, despite the

unfortunate circumstances that may contextualize the request. On the other hand, there are individuals from whom one will never allow a disturbance, regardless of the circumstances of the request. Therefore, social relationships will mediate how learners seek and negotiate information in Web 2.0 environment.

This self-determination can become even more troublesome when learners are willing to rely on the opinions of other peer users as expert, because their opinions offer guidance to learning (i.e., folksonomy). Thus, it is not only essential to have access to information resources or databases, it is crucial to have links to good resources instead of receiving information matching a query. However, a problem arises in deciding whether a learner chooses to be guided by another learner or chooses to guide other learners, especially in those situations where individuals or users are competing for grade and evaluation (Braun & Schmidt, 2006a). This problem points to issues of trust (Golbeck & Hendler, 2006; Tredinnick, 2006) and authentication of information, expectation, and reliability. Furthermore, information in of itself gives individuals that possess it status. Status, on the other hand, is a key component and cherished value in power distant cultures and, as a result, can hinder how information and knowledge is acquired and disseminated. Another intrinsic quality of Web 2.0 and its self-determined, learner masters is that it allows data or information to be re-use or manipulated in a way that is unrelated to the purpose for which it was gathered or intended (Dron, 2007; Miller, 2005). Web 2.0 application technologies allow users to filter, select, edit, and publish information and participates in information resources, which results in a *decontextualization* of information in what Tredinnick (2006) refers to as antipathetic to the traditional practices of established information publishing organizations.

The manipulation of information through Web 2.0 technologies raises yet another important question: Who owns the information? For some, an

important feature of Web 2.0 is its inclusive nature. The technologies place a greater emphasis on the contributions of users in creating and organizing information as they see fit, rather than what is found in traditional information management organization and retrieval systems. Nevertheless, Tredinnick (2006) argues that behind Web 2.0 focus on users' inclusiveness is the potential application of these technologies in a way that substantially reverses the traditional perception of information and knowledge that prevails in the library and other information management profession. Traditional approaches have viewed information and knowledge as existing independent of the user-- accessed, stored, classified, and managed by reference to its objective characteristics. However, with Web 2.0 there is transformation of knowledge into information by codification (i.e., structural arrangement). Therefore, knowledge from this standpoint exists independent of the individuals that have it, as a result, it becomes something that can be interrogated, and accurately recorded, outside of the context in which the knowledge was originally developed. Consequently, Web 2.0 treats information and knowledge as ideas that are constructed and co-constructed within social interaction and interactions among users along with information systems (Tredinnick, 2006). For example, the web pages of wiki are not prepared in advance, rather they are created by users based on their need for specific information.

Furthermore, certain aspects of blogs hold some implications for self-determinism and ownership. First, is the fact that users and contributors become editors and thus, autonomously dictate publishing content. This is in sharp contrast to the traditional publishing outlets where certain structures and institutions are credited with the authority of proofing and editing publication contents.

Today, with blogging software and Internet tools anyone can become a publishing authority on any subject. Some, however, would argue that blog and the ease of web publishing offers

individual opportunity to participate in the democratic space of the Internet (Tredinnick, 2006). However, as indicated above, the democratic participation creates a challenge to information trust and authentication; and may prove challenging depending upon cultural context.

Another challenge posed by blogs and the collection of tools that make the blogging process easier is that blogging tools allow for a quick summary of a specific webpage automatically into a blog, along with the hyperlinks. Therefore, the line between information manipulation and copyright violation is significantly blurred. By implication, users need to be diligent and become increasingly selective about information they pay attention to in an attempt to safeguard against misleading information. The need to be diligent with information authenticity is also reinforced by the fact that most bloggers utilize blog roll (an indexing tool for bloggers) and RSS feed to manage information and keep track of their favorite blog sites and to be notified when those sites are updated, which prevents users from seeking additional sources that may confirm or disconfirm information that they already have. The emphasis on self-determined participation through Web 2.0 is even more vivid in the wiki. Wiki, like the blog, is a simplified method of web publishing. According to Tredinnick (2006) "The wiki takes the ethos of the open-source software movement with its realization of the benefits of collaborative software development, and applies it to information resource management and development" (p. 230). One major advantage of wikis is that they enable collaborative authoring. That is, wikis give users the power to edit and update information at will.

Autonomy and cultural class issues can become magnified by some inherent features of Web 2.0 and eLearning. Stojanovic, Staab, and Studer (2001) identified Web 2.0 and eLearning characteristics and social issues that amount to a different set of cultural values that exist just within eLearning environments. First, students

are required to set the agenda. Second, learning becomes reactionary because students are required to respond to the problem at hand through collaborative social settings. Third, learning is non-linear because students decide how they access knowledge and the sequence of that access, in way that makes the most sense to them. Fourth, learning is symmetric, taking the form of integrated social activities. Fifth, learning is distributed, because it results from the confines of interactions among participants and teachers. Sixth, learning is personalized, where content is determined by the individual users' needs. Seventh, learning is dynamic given that learning content changes through individual users' inputs, experiences, and new practices among others. For instance, the creation and maintenance of shared conceptualizations is a problem due to lack of standardization (Sicilia & Lytras, 2005). Finally, ontologies are socially constructed artifacts that only evolve with time and come at a considerable maintenance cost (van Elst & Abecker, 2002; Sicilia & Lytras, 2005).

From within these possibilities remain the issue of determining whether learners are indeed learning what they need to be learning, whether they are effective at supervising or monitoring their own learning, and whether such a learning model is suitable across learning contexts around the globe and varieties of cultures. Only time will tell, but we argue that in so far as some of the learning models run quite the contrary of cultural prescriptions of some cultures (i.e., high power distance and collectivistic cultures), the current learning approach is doomed to fail or at least requires major modifications for the effective worldwide use of the social software that makes up Web 2.0. McCool (2005) and Schoop, et al., (2006) echo this sentiment by concluding as erroneous and faulty the assumption that Web 2.0 and semantic web are context-free facts and rules of logic.

At the same time, when viewing the issue of control from learners' standpoint, it will help to

understand that learners could be given control and not necessarily have the wisdom to utilize it effectively, which could be detrimental to them (Dron, 2007). Typically this surfaces as considerable learner information overload (e.g., de Moor, 2004; Singh, 2002) given the amount of information available and the need to prioritize information in ways that adequately separates useful from useless information. Without wisdom (higher functioning executive controls) the old rule of garbage in Semantic tools for learning, collaboration, and communication requires extra attention for development than regular web tools, given that they use underlying languages such as description logics that may be foreign to an average users (Sicilia & Lytras, 2005).

The structure of Web 2.0 as a learning platform can present problems too. Traditionally, Web 2.0 and social networking sites have considerable large amount of users, often in millions. Thus, they may be too large for meaningful learning to take place. As a matter of fact, Dron (2007) identifies this problem when he argues that because of the size and users contributing to the overall make up of the system, using social software may not be *pedagogically sound*. Thus, the large size may make Web 2.0 non adaptive to needs of the users and consequently Web 2.0 systems intended for educational use must take this into consideration. The reality is that few teachers takes this into consideration hoping that students will figure out the best way to navigate the system in a manner that makes the most sense to them. This could be asking too much from the students, however. Web 2.0 technologies such as social bookmarking contributes to the idea of herd behavior or folksonomy where users tag information for their own ends; but in the end, the tagging is used by others as a decision making mechanism. Surowiecki (2004) termed it as wisdom of the crowd – where the crowds are only wise when other individuals are not aware of the choices being made. User ratings used to rank search results or listings are one example of this, particularly, price compari-

son sites where decision to purchase is based on collective and subjective opinions of other users (e.g., Sterling, 2005; Tredinnick, 2006). There is also the issue of the intent. According to Dron (2007) when a technology system is not intended as learning platform, which is often the case in most social networking sites, it will evolve to something totally different. After all, social software is built on the idea of helping people make connections with each other.

### **TRUST & TRUST DEVELOPMENT IN WEB 2.0**

Trust in an eLearning system is important regardless of the platform (i.e., social software, w3), and it is crucial to the program success. Dron (2007) addresses different aspects of trust that cannot go unrecognized: the trust that the system will work, is secure, and information resources are reliable and will be supported. From this standpoint it looks as if one is asking too much of any system especially Web 2.0 than it can deliver. The idea behind Web 2.0 is self-sustaining and context free inter-operability. The self sustenance and inter-operability is important to trust in terms of control users have over information. For example, if a learner or user controls the content, he or she gets to decide access to a given file or protect against intentional attack (Dron, 2007); but when individual is not the content originator, he or she may not have such privilege and at the same time users gets to decide and make judgment about who have access to what file and consequently deciding on who is trustworthy and who is not. This method of determining trust is susceptible to attribution errors in the least. A clear implication from lack of access to certain information is the inability to learn particular content, which consequently, defeats the democratic participation for which Web 2.0 claims to support in the first place.

There is skepticism about Web 2.0. Shaw (2005) claims that why Web 2.0 aims at offering

a unified movement toward a better web, the technologies upon which the platform is built share very little in common and that Web 2.0 is just another attempt for marketing certain services. Dvorak (2006) also views Web 2.0 as an attempt to regain the glory days of the 1990s' dot.com mania. While the goal of this paper is not to substantiate any of this skepticisms, we, however, echo the fact that Web 2.0 creates a counter culture movement that challenge the existing ideology of what counts as learning and how learning is done. We also share Tredinnick's (2006) view regarding the fact that Web 2.0 creates computing counterculture because of its interest in combining artificial intelligence with self organizing and libertarian ideology governing information management resources and the open source software development and programming. Additionally, Web 2.0 approaches looks at knowledge and knowledge management as something that can occur outside of cognition in what Tredinnick (2006) described as "scooping knowledge out and reproducing it in a database." However, learning and knowledge transcends mere transformation of information into a database or an easily accessible mode (i.e., codification). Rather, knowledge involves the ability to interrogate, verify, question, and prove the validity of information, and this process simply cannot be done outside of contexts or individuals that possess the knowledge.

From an organizational perspective, Web 2.0 offers users and employees the capability to create content and manage information in a way that is free of managerial control and interference. Even at that, it is not without critical challenges. A major problem concerns the risk of bad information being touted and used as the basis upon which crucial decisions are made. Thus, while the intent is to empower employees to participate in critical decision making process within organizations, the risk of costly mistakes may hinder its use or support from top management. Furthermore, The fact that technology such as Web 2.0 is available for facilitating increase employee participation does

not imply that it will be adopted or used (Olaniran, 1993; 2007b). Technologies, no matter how good they are, cannot change the existing organizational culture. Specifically, the nature of participation that social software like wiki, blog, folksonomies are based still depends on the existing corporate culture where individual must decide whether they are free from negative repercussions from the upper management about information they contribute (Tredinnick, 2004; 2006). Furthermore, Tredinnick (2006) cited Guardian's (2006) findings indicating a staggering research results that indicate that the ratio of content contributors to that of users' participation is 1:100. As a result, Tredinnick (2006) concluded that the nature of such findings on participation spells disaster for organizations, especially those trying to introduce Web 2.0. For example, the risk of bad information being circulated and used as basis for critical decision is too great for some organization to risk. At the same time, Tredinnick (2006) found that technologies such as Web 2.0 by itself cannot change embedded organizational culture. To this end, Tredinnick (2006) concludes that successful implementation of Web 2.0 and other user content design technologies are dependent on the organizational culture and especially those where Web 2.0 is the norm and not an exception.

## IMPLICATIONS & FUTURE TRENDS

There are significant and obvious problems facing appropriation of Web 2.0 in eLearning. Notwithstanding, however, there are ways to try to overcome some of these challenges in spite of their social and technological nature. Perhaps, a consensus about all learners regardless of cultural background and geographical location is the fact that learners need time and place to study, directions or guidance for passing exams, and they need both student-to-student as well as student-to-teacher communication interactions along with help in evaluating and interpreting

information (Stutt & Motta, 2004). At the same time, students in the face of increasing Web 2.0 technologies face information overload and authentication. Therefore, students may benefit from increase customization of these technologies in addressing their needs.

One attempt in aiding customization issue is through *ontology* – which is an explicit specification of concepts (de Moor, 2005). With ontology, technologies can be used to improve accuracy of information and knowledge management resources where selecting the right ontology for the right task, assignment or knowledge exchange would result in effective and efficient process. At the same time there needs to be a way to account for the different contexts in which learning takes place. As a result, ontology by itself is not sufficient. Therefore, ontologies which represent generic knowledge that can easily transfer from one culture to another ought to take the cultural and communication context into account. It is to this end that some suggests that ontology needs not be too tightly linked to specific purpose (e.g., de Moor, 2005; Spyns, Meersman, & Jarrar, 2003; Stojanovic, et al., 2001). Some contextual elements that must be taken into account include the community of use, the objective or the goal of the community, and the type of communicative interactions and rules that govern such community. When this is done accordingly and appropriately, learners can enjoy the proposed benefits of Web 2.0 technologies the way they are designed and intended. Furthermore, taking the context into account may help address specific needs associated with different culture and rules or protocols that guide their learning communities and philosophies about learning. Such a guarded approach to these technologies may help prevent them from being seen as another attempt at re-colonization of cultures through technologies (Olaniran, 2004; Olaniran, 2007a; Ya'u, 2004).

To make this a reality, however, would imply that instead of having one large web community of use or social networking, that is simultaneously

being adapted for eLearning or learning at large, smaller web communities designed specifically to aid learning may be necessary. From this standpoint, attention would be given to the necessity of different communities to create their own ontologies and semantics – their own vocabularies and approaches to issues that are unique to the community and its members.

For illustrative purposes, using the above principles, one could imagine a technology that would allow a scientific community to be simultaneously designers, users (at multiple levels), teachers, and students—across cultural contexts (e.g. organizations, societies). The data produced by the scientists would be indexed and abstracted on a site that continually meta-analyzed (and also meta-synthesized) incoming data. Each user could query the data set to produce custom-tailored analyses, and each user can also add commentary, reviews, and ratings to the analyses. Furthermore, expertise of users could be reported by users and rated by the system itself, based on how users interact with the system. In this way, users themselves become data elements while helping to discourage knowledge emulation. All of this information would be warehoused (in abstraction) allowing for these data to become independent of the original designers, allowing for the free-flow of information, even while these data are continually being re-formed, re-categorized, and re-synthesized by the community of users. The web of thoughts and ideas in such a system would be a map of the community's essence, its universals that are used to create, predict, and suggest the location of new knowledge.

Furthermore, using Web 2.0 technology, any user can also be a designer, creating smaller communities deep within this landscape that can have their own habits and systems that draw from and feed the larger system's cosmology as needed. Ostensibly, these communities will be a smaller manifestation of the core system. For example, one such community could be scientists of African descent who speak Portuguese and

who study cotton farming. This community could have an array of ways of accessing and making information accessible from blogs to links to other “co-communities” and their community resources—creating sub-communities among the co-communities. In such a community, new knowledge need not wait for the annual conference of PanAfrican Portuguese speaking agriculturalists; this system will constantly and always report and categorize the findings, reviews, rejoinders, replications, and meta-analyses produced by members. Like the larger system, this system can be tweaked to meet the needs of any user. More importantly, at a deeper level, liaisons (both human and technological) will emerge to help various communities interact, merge, break apart, or re-formulate into new communities. Rather than focusing on one common language, the liaison will speak many languages (both human and technological) dynamically supporting this system of users as designers and designers as users. Also, these liaisons will be sensitive to the dimensions of cultural variability, allowing for user control at the cultural level. Liaisons can also play an executive role in this cosmology by constantly monitoring user behavior and tweaking the system. The combination of these systems (the wisdom produced by user control of the system) will help organize and summarize the massive amounts of data produced into usable knowledge.

The rules, habits, and folkways of each of these communities would help the entire system to grow and evolve in a relentless inverse of Moore's Law: so as silicon chip design packs more and more processing power into a smaller space, ontology predicts that architecture openness to a user-driven data needs will constantly harvest ever growing collections of intelligence from a vast and growing network of ever-smaller, contextually specific, and culturally relevant, particular communities that are still guided by teachers and experts. The common element in this system is the free-flow of data that blurs designer/teacher-centric and even user/student-centric paradigms into a world

of no center, a world of unending diversification. On this notion of diversification, Hoopes (1991) reinforces that “diversification is the vestige of chance-spontaneity, and wherever diversity is increasing, there chance must be operative” (p. 228). It is this organized access to the chance-spontaneity of Web 2.0 driven data that is the genius of the system and a boon for the users.

## CONCLUSION

In this chapter, we discussed the implications for learning in a Web 2.0 environment. We report that Web 2.0’s great advantage will be the user’s ability to create and publish content online at will. However, Web 2.0’s advantages can illuminate certain disadvantages, none no less significant than culturally-driven learning styles that are unanticipated by Web 2.0 design either because these tools are not initially designed as learning tools or simply because their adaptation to learning environments fails to conform to the designers’ intents. Therefore, in order to remain true to the self-determined ethos of Web 2.0, cultural customization will need to be guided by ontology and explicit specification of concepts that take cultural and communication contexts into account.

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## KEY TERMS AND DEFINITIONS

**Culture:** Consists of different value preferences that influence communication interaction and how people create meaning.

**Globalization:** Involves economic and socio-cultural ideas where organizations are able transcend national geographic and cultural boundaries through convergence of space and time in attempt to accomplish goals.

**eLearning:** Involves the process of knowledge dissemination and acquisition taken place over electronic networks.

**Folksonomy:** Addresses learners or users' willingness to rely on expert opinions of other users due to the belief that such opinions offer guidance.

**Information Management:** Focuses on information resource uses,

**Wiki:** Collaborative tool or technology offering a way for contribution and editing

**Web 2.0:** Technology platforms that support or facilitate social interactions by allowing users to decide how they access, contribute, and manage information with and from other users via the web. The technologies are often referred to as social software