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Conceiving a Learning Organization Model for Online Education

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INTRODUCTION

As online technologies and information resources rise in salience, experience has shown (Vat, 2000, 2001, 2002a, 2002b) that online education must be based on theories of learning and instructional design principles to guide usage of the tools and resources for mediating collaboration and social exchanges within communities of learners (CoL). Relatively recent discussions in the literature (Cobb & Yackel, 1996; Marshall, 1996; O'Connor, 1998; Vygotsky, 1978) suggest that learning is increasingly viewed as a constructive process occurring during one's participation in and contribution to the practices of the community. This is supported by a current shift (Brown et al., 1993) from the cognitive focus on knowledge structures presumed in the mind of the individual learner, to a constructivist focus on the learner as an active participant in a social context. Indeed, we have been witnessing classroom culture being enriched with tools such as the Web-based search engines that mediate knowledge building and social exchanges among peers as participants in discourse communities (Bonk, Medury, & Reynolds, 1994; Bonk & Reynolds, 1997; Fabos & Young, 1999). These communities open opportunities for learners to interact with multiple perspectives, which challenge their existing knowledge constructions and impose cognitive conflicts (Piaget, 1952) requiring negotiations. The theme of this article is to investigate strategies to enhance learning and knowledge sharing in the learners' communities through the idea of a learning organization model. Its aim is to develop the collective intellect of the CoL through appropriate design of information system (IS) support so as to expand its capacity to adapt to future challenges.

THE IDEAL OF LEARNING ORGANIZATION

The concept of the learning organization took seed several decades ago and gained major recognition with the incredible success of Peter Senge's 1990 book *The Fifth Discipline*. Senge (1990) describes a learning organization as a place where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together. At the core of Senge's formulation are five essential learning components: personal mastery, mental models, shared vision, team learning, and systems thinking, which may be briefly described as follows.

Personal mastery has to do with individual learning, and can be seen as the basic building block through the actualization of which the learning organization is typically constructed. Mental models are about how individuals reflect on their own knowledge, using such models to improve the internal understanding of an organization's functions and processes. Shared vision implies a sense of group commitment to a matrix of organizational goals, while team learning describes a sharing and utilization of knowledge involving collective thinking skills. The purpose of systems thinking is to understand relationships and inter-relationships, as well as the context and the forces that affect the behavior of the organization.

To learner-centered teachers, it is not difficult to perceive that the learning organization model somewhat represents an educational context through which students can learn by dealing with others, exchanging ideas, and comparing our ideas with other people. In fact, Vygotsky's theory (1978) suggests that we learn first through person-to-person interactions and then individually through the internalization process that

leads to deep understanding. This belief in the social process of knowledge sharing is based on people's mutual understanding of their own and others' interests and purposes, and the recognition that their interests are somehow bound up in doing something to which they all contribute. Indeed, at one time or another, we might have experienced being a member of a great team. We probably remember the trust, the relationships, the acceptance, the synergy, and the results that we achieved as a group of individuals. Though it takes time to develop the knowledge of working as a whole, when a group of people who over time have learned to enhance their capacity to create what they truly desire to create, this is, in fact, an instance of a learning organization.

THE EDUCATION PHILOSOPHY FOR ONLINE LEARNING

In realizing the learning organization ideal of providing educational services, it is observed that there has been a major shift from the linear view to a dynamic view of managing education (Bates, 1995; Berreman, 1997). The first challenge for educators is to figure out how to harness the power of the new media to take advantage of its capacity to support flexibility, concurrency, and just-in-time design, instead of merely using the new media to deliver the same old stuff. In the linear model of education, learning design proceeded in a linear fashion from defining objectives to lesson planning to course delivery. Educators first engaged in a comprehensive learning needs analysis process, often based on assessments done by others about competencies and learning objectives. Comprehensive syllabi were developed. Finally, the course was delivered as planned. Associated with this linear approach were a set of teaching strategies which matched its linear qualities, characterized by being predominantly one way, centralized, and broadcast oriented. When students appeared bored and unengaged in this type of program, the solution was to find ways to use new media to make the one-way broadcast more entertaining.

Much early online learning was nothing more than a way to generate a broadcast of an expert and his or her multimedia slides with good production values. Today, we need a renewed mindset for education, especially when it is offered through the Internet. Teaching and learning is currently seen as an ongoing process rather than a program with a fixed starting and ending point. The importance of widespread participation by learners in the design of their own learning has been widely recognized (Kimball, 1995). ICTs (information and communications technologies) are particularly well suited to a more dynamic approach to managing education. Good teachers have also always been open to changing their lessons plans based on student input. New media makes it easier. And online environments can provide electronic spaces for continuing conversation among students and teachers about what is working and what is not working in the process. The idea of participatory course design is not to be neglected. The online environment provides an opportunity to support collaborative learning in ways we have not been able to do before. Yet, just putting participants together in some kind of common electronic space will not turn them into a collaborative group automatically. The key is to design a framework for group work, which requires the team to grapple with roles, protocols for working inter-dependently, and mutual accountability.

THE APPRECIATIVE SETTINGS FOR KNOWLEDGE SHARING

In selecting the pedagogical devices to support knowledge sharing according to the learning organization model, we have borrowed some legacies from some educational visionaries in trying to blend the art and science of constructivist teaching. For example, John Dewey's designs embedded learning in experience (Dewey, 1938). He advocated field studies and immersion in experiences to stimulate learning. Jean Piaget's work influences constructivist educators through designs of discovery learning (Piaget, 1970). Students manipulate subject matter and objects representing the subject matter as they interpret their findings. Piaget believed that learners' internalization leads to structural changes in how they think about something as they assimilate incoming data. Today, constructing meaning on the basis of one's interpretation of data is indeed the heart of science inquiry. Besides, Feuerstein's (1980) mediated learning theory refutes the concept of an unchanging intelligent quotient and leads to intense examination of how the classroom setting affects students' meta-cognition. On examining the varied work of these master architects, we see an array of constructivist settings to enable knowledge sharing.

What follows is our appreciation of three important processes considered as indispensable in the operations of the CoL in terms of their collective knowledge activities: the personal process, the social process, and the organizational process. Of particular interest here is the idea of appreciative settings, which according to Vickers (1972) could refer to the body of linked connotations of personal interest, discrimination, and valuation, which we bring to the exercise of judgment and which tacitly determine what we shall notice, how we shall discriminate situations from the general confusion of an ongoing event, and how we shall regard them. The word "settings" is used because such categories and criteria are usually mutually related; a change in one is likely to affect others.

The Personal Process

Consider ourselves as individuals conscious of the world outside our physical boundaries. This consciousness means that we can think about the world in different ways, relate these concepts to our experience of the world, and so form judgments that can affect our intentions and, ultimately, our actions. This line of thought suggests a basic model for the active human agent in the world. In this model we are able to perceive parts of the world, attribute meanings to what we perceive, make judgments about our perceptions, form intentions to take particular actions, and carry out those actions. These change the perceived world, however slightly, so that the process begins again, becoming a cycle. Nonetheless, this simple model requires some elaborations.

First, we always selectively perceive parts of the world as a result of our interests and previous history. Second, the act of attributing meaning and making judgments implies the existence of standards against which comparisons can be made. Third, the source of standards, for which there is normally no ultimate authority, can only be the previous history of the very process we are describing, and the standards will themselves often change over time as new experience accumulates. This is the process model for the active human agents in the world of CoL, through their individual appreciative settings. This model has to allow for the visions and actions which ultimately belong to an autonomous individual, for individuals do not have to conform to the perceptions, meaning attributions and judgments that are common, even though there may be great social pressure to do so; after all, we are a social animal.

The Social Process

Although each human being retains at least the potential selectively to perceive and interpret the world in their own unique way, the norm for a social animal is that our perceptions of the world, our meaning attributions, and our judgments of it will all be strongly conditioned by our exchanges with others. The most obvious characteristic of group life is the never-ending dialogue, discussion, debate, and discourse in which we all try to affect one another's perceptions, judgments, intentions, and actions. This means that we can assume that while the personal process model in the world of CoL continues to apply to the individual, the social situation will be that much of the process will be carried out inter-subjectively in discourse among individuals, the purpose of which is to affect the thinking and actions of at least one other party.

As a result of the discourse that ensues, accommodations may be reached which lead to action being taken. Consequently, this model of the social process which leads to purposeful or intentional action, then, is one in which appreciative settings lead to particular features of situations, as well as the situations themselves, being noticed and judged in specific ways by standards built up from previous experience. Meanwhile, the standards by which judgments are made may well be changed through time as our personal and social history unfolds. There is no permanent social reality except at the broadest possible level, immune from the events and ideas, which, in the normal social process, continually change it.

The Organizational Process

Our personal appreciative settings may well be unique since we all have a unique experience of the world, but oftentimes these settings will overlap with those of people with whom we are closely associated or who have had similar experiences. Tellingly, appreciative settings may be attributed to a group of people, including members of a team, or the larger organization as a whole, even though we must remember that there will hardly be complete congruence between the individual and the group settings. It would also be naïve to assume that all members of an organization such as a CoL share the

same settings, those which lead them unambiguously to collaborate together in pursuit of collective goals. The reality is that though the idea of the attributed appreciative settings of a CoL as a whole is a usable concept, the content of those settings, whatever attributions are made, will never be completely static.

Changes both internal and external to the CoL will change individual and group perceptions and judgments, leading to new accommodations related to evolving intentions and purposes. Subsequently, the organizational process will be one in which the data-rich world outside is perceived selectively by individuals and by groups of individuals. The selectivity will be the result of our predispositions to "select, amplify, reject, attenuate, or distort" (Land, 1985, p. 212) because of previous experience, and individuals will interact with the world not only as individuals, but also through their simultaneous membership of multiple groups, some formally organized, some informal. Perceptions will be exchanged, shared, challenged, argued over, in a discourse, which will consist of the inter-subjective creation of selected data and meanings. Those meanings will create information and knowledge which will lead to accommodations being made, intentions being formed, and purposeful action undertaken. Both the thinking and the action will change the perceived world and may change the appreciative settings that filter our perceptions. This organizational process is a cyclic one, and it is a process of continuous learning and should be richer if more people take part in it. And it should fit into the context of our learning organization model.

CRITICAL IS DESIGN ISSUES FOR PURPOSEFUL ACTION

According to Checkland and Holwell (1995), the main role of an information system is that of a support function; such systems do not exist for their own sake. The IS function is to support people taking purposeful action by indicating that the purposeful action can itself be expressed via some activity models, which are also called the "human activity systems" (HAS) models from the perspective of soft systems methodology (Checkland & Scholes, 1990). The function of providing IS support can also be thought of as entailing a pair of systems, one a system that is served (the people taking the action), and the other a system that does the serving (namely, a system that contains a data storage element and a data processing element, as well as the people to maintain, operate, and modify it). Thereby, whenever a system serves or supports another, it is a very basic principle of systems thinking (Checkland, 1983) that the necessary features of the system that serves can be worked out only on the basis of a prior account of the system served. This is because the nature of the system served-the way it is thought about-will dictate what counts as service, and hence what functions the system which provides that service must contain (Checkland, 1981). Thus, an IS strategy concerning support to an organization, such as a CoL, can be coherently designed and set up only on the basis of a clear concept of the CoL. This is true not only for the IS strategy of the CoL as a whole, but also for the thinking concerning each detailed system created within that strategy. Consequently, the process of IS development (ISD) needs to start not with attention quickly focused on data and technology, but with a focus on the actions served by the intended system. Given that principle, we can now indicate the broad features of our ISD process for CoL.

The first requirement, in the general case, is a thorough examination of the ways in which people in the CoL perceive their world. It is necessary to get a grasp of those perceptions as they lead to the particular assumptions about meanings and purposes that cause certain purposeful action to be regarded as both necessary and in need of data-processing support. We need to understand why, among these people, certain data are selected and treated as relevant items in order to get the best possible definitions of accepted purposes and the intentional action, which follows from pursuing them. The examination of meanings and purposes should be broadly based, and its richness will be greater the larger the number of people who take part in it. Nevertheless, the examination should try to home in on the question: If we want to pursue this purpose, which seems meaningful to us, what would we have to do and how could we do it?

Remembering the many relationships that have to be managed, we have to acknowledge the rarity of complete consensus. What are sought are often the accommodations, which enable energy to be enlisted in undertaking action relevant to plausible purposes. Once the action to be supported has been decided and described, which can usefully be done using activity models, we can proceed to decide whether support

should take the form of either or both of the following: automating action, which is currently being carried out by people; or providing information support to people as they carry out their tasks. In the case of the latter, we need to distinguish the informational support that will help people take the desired action, and that which will help people monitor the action and take control action with respect to it if desired outcomes are not emerging.

Often the monitoring and control need to be thought about carefully in terms of declared measures of performance, which should derive from how the purposeful activity is conceptualized. From an analysis of the information support appropriate for whomever is concerned with taking the intentional action in the CoL, it is now legitimate to turn attention to the system, which will provide that support through the elaboration of suitable information technologies. Yet, this is not to deny that on occasion new emerging technical possibilities may make possible new intentional action. The key point is that in order to conceptualize and so create a system that serves, it is first necessary to conceptualize that which is served, since the way the latter is thought of will dictate what would be necessary to serve or support it.

CONCLUSION

This article describes an initiative to develop a learning organization model for online education, paying particular attention to the design issues in support of participatory knowledge construction. The idea is aimed to create collaborative learning experiences, which invite students (lifelong learners) to construct knowledge and to make meaning of their worlds of learning. Specifically, we discuss the educational framework of our design from the constructivist's perspective of cultivating the collective intellect conglomerated from the communities of learners (CoL), in the form of essential knowledge processes in the context of a learning organization. Our discussion intends to clarify the ideal of a CoL whose growth is often based not so much on delineated learning paths, but rather on knowledge sharing, and reciprocal support for tackling day-to-day problems in the various learning scenarios. We elaborated the design issues of three important knowledge processes (the individual, the social, and the organizational), which the design of a learning organization model for online education must support to help structure and facilitate knowledge interconnectivity.

Through the exposition of the individual, social, and organizational processes in which, in a specific organizational context, a particular group of people can conceptualize their world and hence the purposeful action they wish to undertake, the article also renders a perspective of a learning context in which our CoLs could be considered as cultural processes in which social reality is continually defined and re-defined in both the talk and action which carries and expresses their multiple agendas of interest and concerns. This provides the basis for ascertaining such issues as: what technical support is needed by those undertaking the learning action, and how modern IS design can help to provide that support. The article concludes by reiterating the challenge of designing IS support as human activity systems in which purposeful actions of the CoLs can be supported through the elaboration of suitable information technologies.

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KEY TERMS

Appreciative Settings: A body of linked connotations of personal or collective interest, discrimination, and valuation which we bring to the exercise of judgment and which tacitly determine what we shall notice, how we shall discriminate situations of concern from the general confusion of an ongoing event, and how we shall regard them.

CoL: Acronym referring to the community of learners whose learning is fundamentally a social phenomenon. Namely, a CoL focuses on engagement in social practice as the fundamental process by which we learn and so become who we are.

Collaborative Learning: Learning is integrated in the life of communities that share values, beliefs, languages, and ways of doing things. What holds the learners together is a common sense of purpose and a real need to know what the other knows. The essence is the underlying process of shared creation involving two or more individuals interacting to create shared understanding where none could have existed on its own.

Constructivism: A theory of learning based on the idea that knowledge is constructed as learners attempt to make sense of their experiences. It is assumed that learners are not empty vessels waiting to be filled, but rather active organisms seeking meaning: regardless of what is being learned, learners form, elaborate, and test candidate mental structures until a satisfactory one emerges.

IS Support: An information systems (IS) function supporting people taking purposeful action. This is often done by indicating that the purposeful action can itself be expressed via activity models, a fundamental rethinking of what is entailed in providing informational support to purposeful action. The idea is that in order to conceptualize and so create an IS support which serves, it is first necessary to conceptualize that which is served, since the way the latter is thought of will dictate what would be necessary to serve or support it.

Knowledge Sharing: A process of leveraging the collective individual learning of an organization such as a group of people, to produce a higher-level organization-wide intellectual asset. It is supposed to be a continuous process of creating, acquiring, and transferring knowledge accompanied by a possible modification of behavior to reflect new knowledge and insight, and produce a higher-level intellectual content.

Learning Organization: An organization that helps transfer learning from individuals to a group, provide for organizational renewal, keep an open attitude to the outside world, and support a commitment to knowledge.

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