

Using Activity Theory to Guide E-Learning Initiatives

Neal Shambaugh, Ph.D.
504N Allen Hall, PO Box 6122
West Virginia University, USA
Morgantown, WV 26506-6122
Phone: 304-293-2060
Fax: 304-293-9424
neal.shambaugh@mail.wvu.edu

Biographical Sketch

Neal Shambaugh is an associate professor and program coordinator of Instructional Design and Technology at West Virginia University. He received his Ph.D. in instructional systems design from Virginia Tech. His master's degree is in curriculum and instruction, while his undergraduate degree is in Management Science/Decision Support Systems. Prior to entering academia, his business interests included radio broadcasting management and customized training program development for energy companies. His academic research interests include instructional design, visual literacy, and mental models. He has published two textbooks on instructional design.

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

Using Activity Theory to Guide E-Learning Initiatives

Neal Shambaugh, West Virginia University

Key words: asynchronous education, internet-based instruction, online course, online learning community, synchronous discussion, web-based curriculum, web-based education, web-based education-administrative issues, web-delivered education, administrative cultures, curriculum design, higher education, instructional design, instructional technology

EXECUTIVE SUMMARY

This case documents how activity theory can be used as a tool to help educators understand the issues behind deploying online learning programs. Faculty members in higher education are accustomed to teaching online, but are new to the development of online academic programs. This case chapter provides a background to the academic setting and a discussion of activity theory. The specific context of an academic department is described, followed by how activity theory was used to represent the overlapping goals of faculty, students, and administrators, and to understand the contextual issues of roles, community of practice, and division of labor to reach the desired goal, which was to implement their academic programs online. Guidelines for using activity theory are provided.

BACKGROUND

Organizational Issues

Higher education institutions historically have been slow to adjust to changing pressures and environments. Administrators now push for E-Learning initiatives, which increase student enrollments through online or blended learning courses. E-Learning, of course, can be used in a face-to-face environment or in blended instruction. However, E-Learning is defined in this case as the use of digital and networked technologies for online instructional programs.

Faculty who teach courses, conduct research, and contribute to service activities are increasingly called on to develop plans to market, recruit, and retain students in new online programs, tasks that are new to them. In addition to taking considerable time to design, faculty groups work with little organizational experience to implement and manage E-Learning initiatives. Traditional models of **curriculum development** take too long and are linear in nature, ill-suited to the needs of institutions to make decisions faster than they are accustomed to. Faculty members typically discuss program objectives, program features, courses, and assessment, while administrators deal with the issues of student recruitment, course staffing, and program coordination and evaluation. E-Learning initiatives, however, require academic departments to address issues of both curriculum and organization simultaneously.

To involve faculty, students, and administrators in making faster and more responsive curricular and organizational decisions, academic institutions must understand the complex contexts surrounding fast-changing market conditions. This case documents the use of **activity theory** as a tool to help faculty members of an academic department understand the issues of developing their online academic programs and making decisions. Viewing E-Learning initiatives through

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

“activity” acknowledges the different constituencies that have a stake in such programs, including faculty, students, and administrators. An activity perspective acknowledges the context of both curriculum (what is to be taught) and organizational needs (how to implement and manage).

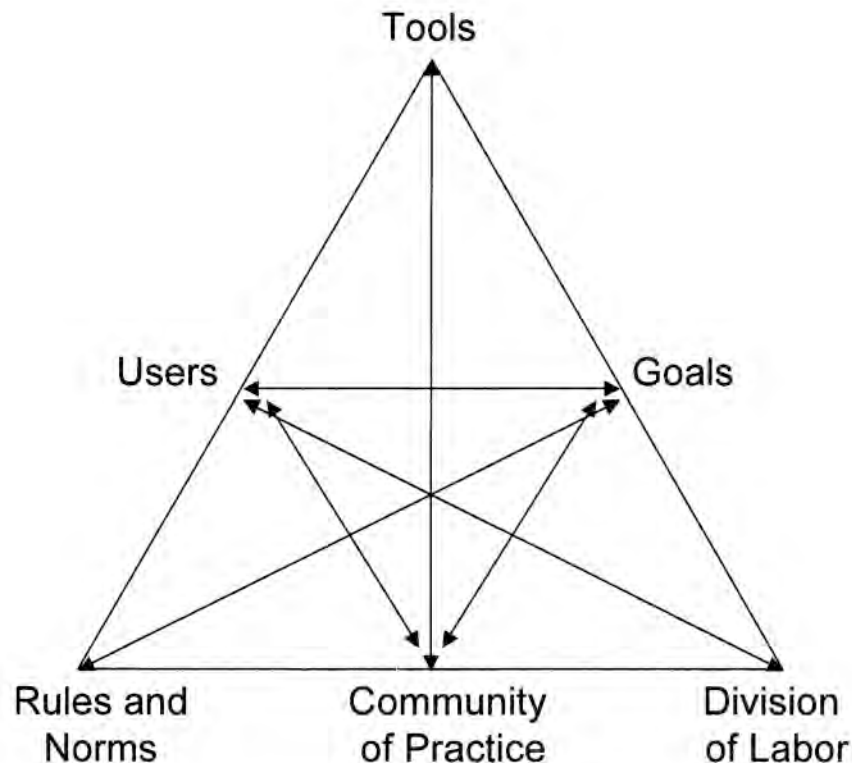
Activity theory has been used to analyze educational settings ranging from computer-based training to better understand the workplace in which the training was used (Pang & Hung, 2001), as well to acknowledge teachers’ beliefs about teaching and the power issues between teachers and administrators in public schools (Robertson, 2008). Activity theory has been used in higher education strategic E-Learning initiatives (Salomon, 2005) and to look specifically at asynchronous learning networks (Li & Bratt, 2004).

Activity Theory as a Tool

Activity theory is a socio-cultural perspective on understanding the interconnections of people, organizational rules and culture, and tools, all directed to some outcome or goal (Bertelsen & Bodker, 2003; Cole & Engeström, 1993). To achieve E-Learning in higher education involves different human constituencies including faculty, students, administrators, and the influence of social and cultural norms, values, language, and tools on these humans (Vygotsky, 1978).

Activity theory is represented in Figure 1 as a collective image of several components or nodes (Engeström, 1987).

Figure 1. Visualizing Activity System Components.



Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

The top triangle in the visual involves users, goals, and tools. The goal node in the activity system visual itemizes how human activity is directed. These goals are accomplished with the help of tools, such as a learning management system in E-Learning. The bottom half of the triangle identifies three categories of contextual issues that involve all human activity. The community of practice is made up of individuals and groups who share the same goals and have developed specific ways of working. The division of labor node refers to the roles and tasks of the community members and a division of responsibility and control. Rules and norms refer to the explicit and implicit regulations, norms, and conventions that constrain actions and interactions within this activity system.

On a pragmatic level, activity theory can be used as a tool of **analysis** to examine the interconnected activity of faculty, students, and administrators. Analysis is a distinct feature of human-computer interaction design where systems analysis, the gathering of data on the information needs of a unit (e.g., data flow diagrams, entity-relationship diagrams), leads to a system design which meets those needs. In education instructional design includes analysis as a front-end activity in a cyclical systematic process, which proceeds to design, implementation, and program evaluation/revision. Instructional design taps many analysis methods, including task analysis, content analysis, instructional needs analysis, and knowledge elicitation techniques, features which attempt to identify what is to be learned before the actual performance (Jonassen, Tessmer, & Hannum, 1999). Activity-based approaches assume that knowledge and performance are connected, and that activity structures serve to help understand how humans organize to accomplish specific goals. Thus, activity theory is related to other learning theories including situated cognition, distributed cognition, and constructivism.

The overall advantage to activity theory as an analysis tool is that the model raises awareness of the players to contextual and historical factors that comprise human activity. The different players can then discuss the potential impacts of this context on reaching the goals. Activity theory is not just a front-end analysis tool, as needs assessment is in **instructional design**, but a “heuristic aid” (Gay & Hembrooke, 2004) for the players to continually evaluate implementation and make revisions, but also to keep the needs and concerns of the interconnecting players in front of everyone.

The cultural-historical approach discussed here has focused on ‘higher psychological functions,’ Cole (1988) but Griffin & Cole (1984) pointed out the insensitivity of activity theory towards cultural diversity. Now questions of diversity and dialogue have become increasingly serious challenges to advance the usefulness of activity theory in organizations. One example, are the power relationships between public school teachers and administrators (Robertson, 2008). Future uses of activity theory need to develop conceptual tools to understand dialogue, multiple perspectives and voices, and networks of interacting activity systems.

SETTING THE STAGE

Administrative

The department is one of four academic departments in a college of education. The college is part of a land-grant university, which in the United States means that the university offers a

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

comprehensive range of degrees, conducts doctoral level research, and provides service to its state. The department consists of 15 faculty members, each of which serves one or more program areas. A total of four program areas exist consisting of child development, educational psychology, research methods, and instructional technology. The child development program offers an undergraduate degree (B.S.) and a master's (M.A.), while educational psychology and research methods offer master's degree (M.A), and the instructional technology program awards both a master's (M.A.) and a doctoral degree (Ed.D).

Within the past ten years the department has reorganized twice, retitled itself, adding a child development program from another college, and losing a program to another department in the college. In general the department serves graduate students, but with the addition of a new program a significant number of undergraduate students have improved the department's overall student numbers. The department is supervised by a department chair, who reports to the college dean. Department issues are discussed at twice-monthly leadership team meetings, composed of the dean, associate deans (3), department chairs (6), and center directors (3). Within the department one of the faculty members coordinates each of the four programs. A small stipend is paid to each program coordinator. Funds are allocated to each department based on the student numbers across a fall and spring semester academic year, as well as any summer enrollments.

Three competent office staff, each with 20+ years of experience, handle the financial details of each program, including purchasing of materials and supplies and travel reimbursement, as well as providing program support dealing with faculty teaching, student queries, and student records.

Faculty

Faculty members teach courses to serve their program areas, but may also teach courses in a dual-degree five year teacher education program. All faculty members have a doctorate degree. Adjunct faculty members are sometimes used for summer courses. Of the 15 faculty, 13 are tenured or on a tenure-track. These 13 have written expectations for high quality teaching and research dissemination, with moderate expectations in the service category. The other two faculty members are clinical appointments, meaning that their primary activity is teaching. Each of these two faculty members teaches 4 courses, while the other 13 teach between 2 and 3 courses, depending on their other responsibilities.

As this department primarily serves graduate students, its focus is graduate level teaching and conducting research. Tenure-track expectations place a considerable pressure on new faculty members on their first 6 years, as they are expected to publish regularly to achieve tenure, while also receiving good-to-excellent ratings from students on their teaching. Of the 13 faculty members, 8 have tenure at the associate professor or professor level with 5 faculty members at the assistant professor level. Additional pressure for all faculty is the amount of graduate advising that must occur. Faculty members overage over 12 chair duties and sit on 50+ committees. Research methods faculty who teach research methods courses sit on 50+ master's and doctoral committees, as they are likely the methodologist on the committee. Advising in the child development program area is principally undergraduate and advising students on courses and graduation requirements. The one faculty member who teaches the online courses in child development also performs many advising duties at a distance with online students.

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

Students

Traditional age students are enrolled in the child development undergraduate program. Each of these students is advised by a child development faculty member or an office staff person. A wide range of ages characterizes the students enrolled in the graduate programs. Student enrollments in the graduate programs consist of 30% international students. Advising for the graduate programs involves a faculty member who is assigned to be the student advisor. At the master's level a program of study with a coursework option specifies courses and requires one faculty member signature. Students who choose a thesis option submits a program of study specifying courses and requires three faculty members to attest to the thesis through a written document and a defense. The instructional technology doctoral program requires a committee of five faculty members, a program of study, a year residency requirement, a candidacy examination, and a dissertation document with defense. Online courses are usually fully enrolled (caps of 20-30 students).

Technological Infrastructure for E-Learning

The university's administrative and educational technology needs is supported by an office for **information technology**. This support group provides web hosting space on its server, including space for departments and student organizations, online courses, and personal web hosting for faculty, staff, and students. Wireless network access is provided, both encrypted for staff and students, and non-encrypted for guests.

Distance learning opportunities for students across all programs is marketed by an office of distance learning. However, E-Learning courses can be developed and delivered by any academic program unit. Instructional support is coordinated by an instructional technology group and consists of course development, media development, including blogs/wikis, multimedia and streaming media.

Instructional technology support for in-class use within the college is supported in two ways: A university unit for classroom technology supports eight classrooms in the college building, which are equipped with a PC (with DVD playback capabilities), data video projector, document camera, auxiliary input panel, and touchpanel control system. Additional "optional" equipment such as microphones, personal response system clickers (PRS), Macintosh computer, VCR, and dual projection screens are available depending on the room. Second, the college's computer lab manages a full floor of 5 classrooms, 2 labs, and public computing space, as well as computing consulting, mobile computing, reserve materials, and audiovisual support. The college lab also sponsors periodic workshops, software guides, and an end-of-the-year professional development event.

Online delivery is coordinated through the use of a **learning management system (LMS)**, which is integrated with the university's administrative system so that faculty and students are automatically registered for their online courses as they are for face-to-face classes. Faculty use the LMS to develop online courses using the standard features. These features include posting of materials and links, blogs/wikis, web chats, synchronous audio, as well as learning outcomes, assessment and grade data. Instant messaging is also available for each course. All faculty and

**Cases on Successful E-Learning Practices in the Developed and Developing World:
Methods for the Global Information Economy.**

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

students are given email addresses for communication within the LMS and outside using other mail clients. Within three years (Fall, 2005 through Fall, 2008) the number of sections grew from 1454 to 5994.

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

E-Learning History

The child development program offers a master's degree through online delivery. A non-tenure track faculty member coordinates the online courses and teaches full time in the department. A total of 5 faculty members teach in this program. A second program, instructional technology with 4 faculty members, delivers its master's courses face-to-face (F2F) or online, either through **synchronous** (e.g., video) or **asynchronous** modes, depending on the faculty member and the individual student. The goal is to enable any student to take a course online or F2F for the instructional technology master's degree, however, the master's program is not marketed as an online program. This online teaching decision was made recently as a first step in offering an official online master's instructional technology program.

Administrative pressures over the past 10 years have stressed the need for student numbers, a common issue at most academic institutions. Faculty members have been under this pressure to keep course enrollment high, although the majority of the programs in this department are graduate programs, and issues of program quality have arisen. Student enrollment targets and a student recruitment process have been adopted. Curriculum issues and online program features, questions of quality control for these programs, have not been discussed at the department level.

During periodic meetings of the department issues of online courses come up for discussion but no organized discussion, design, or professional development has occurred with overall program goals in mind. **Professional development** in the college has focused on individual faculty members' needs to understand online tools and how they might be used in their courses. There was, however, a need to discuss program issues regarding online programs and delivery.

Department Management Practices

Decision-making in this academic department is solicited and managed in a top-down mode typical of academic institutions: namely, dean, leadership team, and department chairs. Faculty input and decisions occur through standing committees and a faculty constitution. Within this department faculty have a significant voice in all matters. The downside is that there are many academic matters to contend with and periodic meetings have long agendas. Not all issues can be addressed during the academic year; only a minority of the issues can be adequately addressed through department meetings.

The case description provides an overview of **activity theory** as an analysis tool, and demonstrates how activity systems can be depicted for the major E-Learning constituents, which include faculty, students, and administrators. Robertson (2008), meanwhile, labels his three activity systems as organizational, technological, and pedagogic. Subsequently the case describes how the activity system model was used to analyze overlapping goals of the three constituent groups and better understand the context in which each group operated. While this approach is ongoing, the case describes how the system representation has been used to prompt changes in rules, work culture, and roles. The idea of boundary crossing actions was used to prioritize E-Learning decisions for future curriculum and implementation.

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

CASE DESCRIPTION

E-Learning Activity Systems for Faculty, Students, Administrators

Specific components of a generic activity system model for E-Learning initiatives (see Figure 2) include the curricular degree-granting program, which is the goal of the activity systems. The users include students, faculty members, and administrators and require activity systems of their own to examine their distinct contextual features (to be described below). These users tap tools, such as the **learning management system**, which coordinates student activity in courses, and the administrative system, which coordinates student matriculation through a program. Sometimes these systems are connected, sometimes they are not. This tool category would also include the technical support and instructional design support personnel. The division of labor node identifies “who does what,” while the rules-and-norms node identifies the policies and procedures of that department in regard to hiring, promotion, teaching, research, and service activities. The cultural features describe a unique **community of practice** that describe the unique ways of working from faculty members, students, and administrators.

Figure 2. Academic E-Learning Activity System.



Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

E-Learning requires three activity systems to address the goals of faculty, students, and administrators. Initiatives must take into account issues of *what to teach* (curriculum) and *how to implement* this curriculum (organizational) within a complex academic context. Both of these issues also occur within different systems of activity for faculty, students, and administrators.

Faculty Activity System

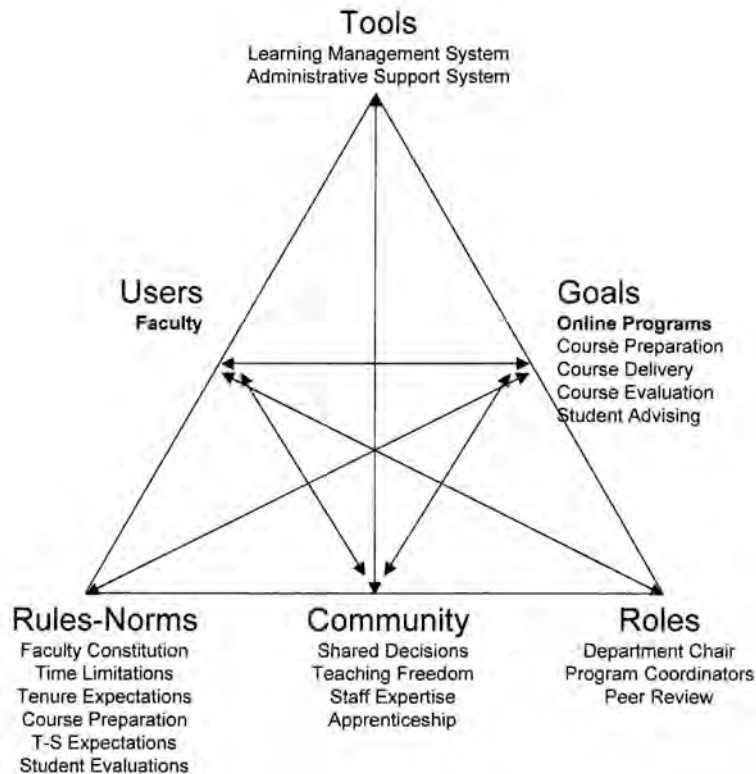
Faculty activity systems can be visualized using an activity system (see Figure 3). The items listed under each node were gathered from faculty meetings in which online program development was discussed. Faculty goals with E-Learning initiatives involve the preparation, delivery, and evaluation of online courses. Faculty use student course performance as an outcome in the advising of a students' program of study and mentored research activities. The rules and norms for faculty can be divided roughly by those seeking tenure and those who have tenure. Tenure-track faculty operate under expectations to publish and achieve good-to-excellent teaching ratings, all within a six-year time frame. Faculty members themselves have expectations for a successful delivery of a course, as well as mediating how students regard their expectations.

The **community of practice** for faculty involves shared decision-making when it comes to programs, courses, and their role. Faculty have varying views of collegiality and academic freedom in regards to their activity. Their view and treatment of staff members is an important community of practice. Faculty also have varying views of their role in developing the skills and attitudes of graduate students. Faculty assume different roles within the college and department, include the new faculty member, the tenured faculty member, and a role of annual peer review for promotion. Faculty members may also assume different administrative functions.

Figure 3. Faculty Activity System.

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA



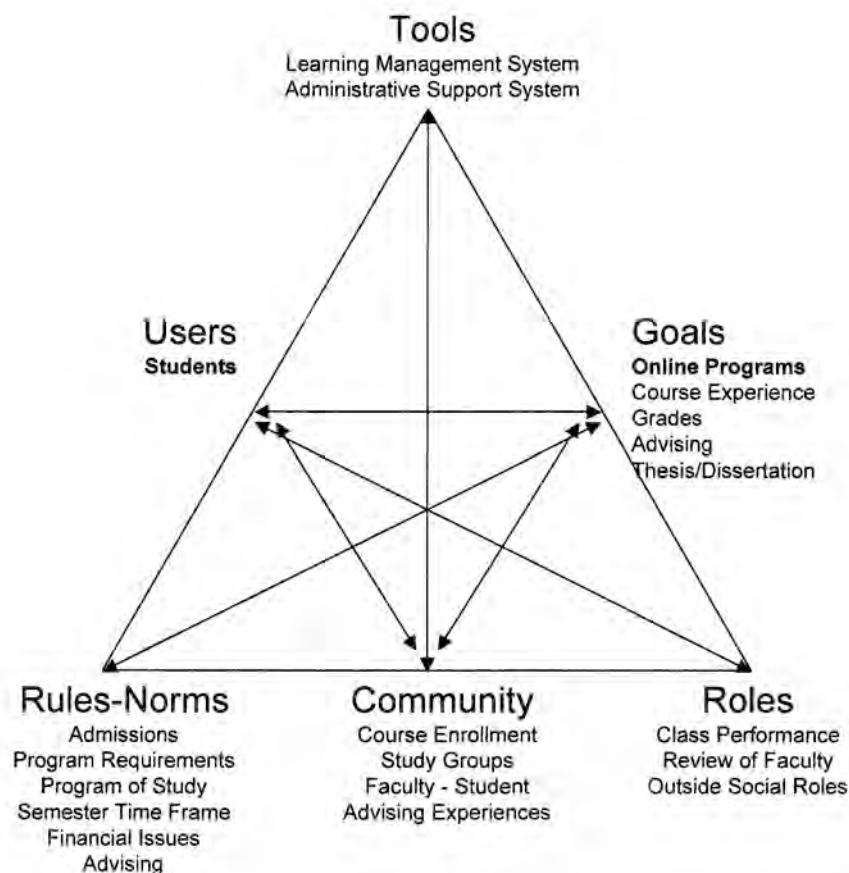
Student Activity System

Student activity systems can also be visualized (see Figure 4). Students have somewhat different goals than faculty and focus primarily on the course experience and resulting grade. Students are also concerned with completing the program requirements, which may include a thesis or dissertation. In terms of rules and norms, students “navigate” a set of admission and program completion requirements and procedures, address financial needs, and complete semester courses and other expectations. Student **communities of practice** and inherent cultures include temporary communities found in course, whether face-to-face (F2F), online, or in blended course deliveries. Ad hoc study or project groups may form and disband over time. A larger level of community involves the relationships developed between faculty members and their students in coursework, program advising, and mentoring of research projects and a thesis or dissertation. While graduate programs in particular focus on the development of future faculty who may teach or conduct research, the roles for these students become that of course performance, review of faculty teaching, and activity in other program related functions.

Figure 4. Student Activity System.

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA



Administrator Activity System

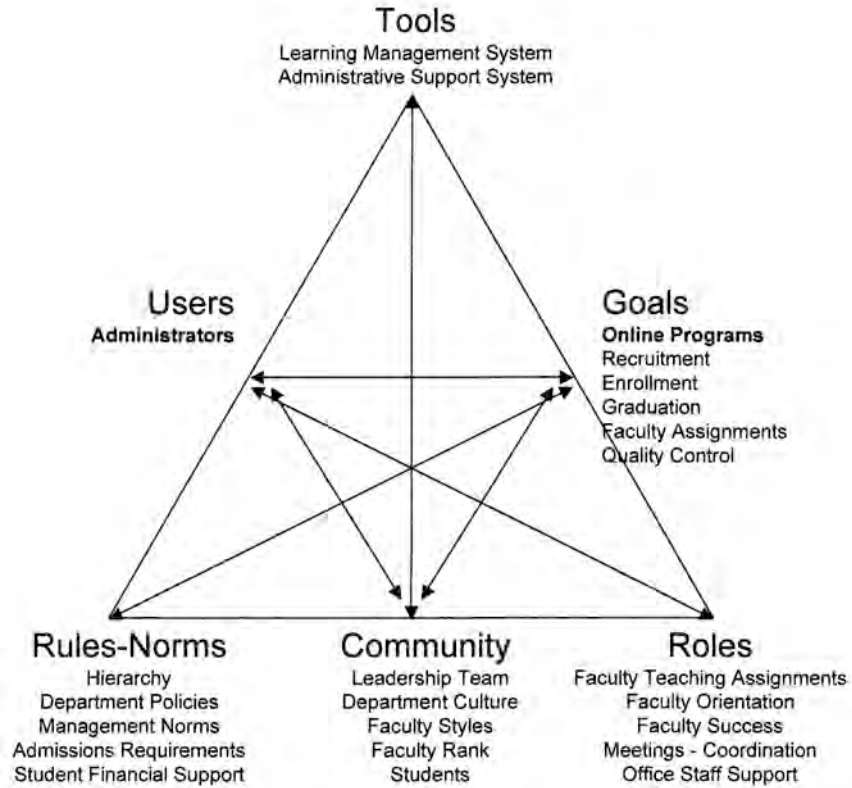
The activity of administrators, which is seldom examined, can also be visualized (see Figure 5). Their goals in terms of E-Learning overlap to some extent but focus on student recruitment, enrollment, and graduation. Administrators are also responsible for faculty teaching assignments and overall workload, as well as the quality of their academic programs.

The rules and norms for administrators who are also faculty members, involve the upward (dean's office) and downward (faculty assignments, student admissions and financial support) reporting of goals and results, as well as the enforcement of department policies with staff, students, and faculty members. The activity of administrators is bound by academic policies and college/department norms for shared decision-making. The **communities of practice** experienced by administrators can be found at the leadership team level, which is composed of department chairs, the dean and associate deans, a staff member, and center directors. Each administrator is also bounded by historical department practices and expectations, as well as the different expectations for faculty who are new, tenured, or those without a tenure-track appointment. Students and the administrator form a unique community, mostly procedural, policy-driven, and management-by-exception. Administrators take on different roles and power relations providing guidance for new faculty, the continued success of all faculty members, coordinating program initiatives and teaching, as well as supporting staff members.

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

Figure 5. Administrator Activity System.



Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

Using Activity Systems for E-Learning Analysis and Synthesis

Child development online programs were in place prior to official faculty meetings on E-Learning programs, which occurred during the Fall 2008 semester. In addition, master's courses in the instructional technology program were being offered both face-to-face and synchronously for distance students. Monthly meetings included on their agenda discussions on E-Learning programs, first in a brainstorming session, which allowed faculty to share their past experiences or concerns. These issues were then analyzed using the activity system structure to help organize their concerns.

Analysis of Overlapping goals

Analysis of the activity system components across the three groups provided immediate insight. Breaking out the shared but different aspects of activity between faculty, students, and administrators identified an overlapping set of goals (see Figure 6). This overlap suggests that E-Learning was a mutual concern and that changes to address the needs of one group would impact one or more of the other two groups.

Figure 6. Shared, Non-shared Goals for E-Learning.

Faculty Goals	Student Goals	Administrator Goals
Online course preparation, delivery, and evaluation	Online course expectations, grades, and performance	Faculty assignments
Student advising	Program advising online/F2F Thesis/dissertation mentoring	Student recruitment, enrollment, graduation
		E-Learning program quality control

Figure 6 was developed by examining the E-Learning goals for faculty, student, and administrator in Figures 2-4 and looking for the overlaps. A significant overlap of concerns existed with online courses and advising, meaning that any implemented changes will impact all three groups. One area of less concern for faculty and students, but significant for administrators, was in evaluating and improving the quality of the overall academic programs, including E-Learning components. This area of concern becomes an acute issue with new programs that are completely online. Despite overlapping goals, the immediate concerns of faculty, students, and administrators can be regarded as “divided terrain” where these individuals do not always talk or work with each other. The activity system suggested the possibility of analyzing a multitude of relations within the triangular structure of activity, including shared goals and differences in roles, and ways of working together. However, the essential task was always to grasp the systemic whole, not just separate connections.

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

Synthesis of Decisions for E-Learning

The visual activity representation provided both analysis and synthesis opportunities. **Synthesis**, in terms of decision-making, can be facilitated by discussing how the use of E-Learning tools influences or mediates the goals of the three groups and what changes in rules-norms, communities of practice, and roles may be needed. Synthesis, in terms of decision-making, can be facilitated by discussing how the use of E-Learning tools influences or mediates the goals of the three groups and what changes in rules-norms, communities of practice, and roles may be needed. Based on Figure 7, online courses and E-Learning programs require what Engeström (2002) calls **boundary-crossing** actions. Boundary-crossing actions are two-way collaborative interactions requiring both renegotiation and reorganization decisions.

Figure 6 depicts what the department has identified as such opportunities between Faculty – Administrators, Faculty – Students, and Administrators – Students. Benefits of identifying such opportunities forces joint responsibility for E-Learning courses and programs on all three groups, that program development in E-Learning, given its uniqueness and newness, requires an ongoing, iterative, and collaborative set of practices quite different from traditional academic courses and programs. The one boundary crossing action on collaborative discussion of program features necessitates continual involvement of faculty, students, and administrator across many issues. Thus, program development is not a linear history of **curriculum development**, followed by administrator implementation, as in traditional academic programs. E-Learning requires a dynamic involvement across multiple issues, including program purpose, marketing, program features, assessment, and matriculation of students through the program.

One specific conflict identified from these **boundary-crossing** activities involves the re-definition of what constitutes a faculty-student contact hour. Traditionally, courses have required 45 contact hours (3 hours/week X 15 weeks). Online courses, which operate in an **asynchronous** delivery mode, are at odds with a **synchronous concept**. Rather than defining contact as “seat-time,” student performance is being discussed. Rather than a unit-of-delivery, such as contact hours, specific types of student performance for each course is specified, such as papers, designs, critiques, or chats. Thus, contact hours are specified in terms of a unit of task performance.

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

Figure 7. E-Learning Boundary Crossing Actions.

<p>Existing Faculty Actions</p> <p>Faculty Constitution Time Limitations Tenure Expectations Course Preparation Teacher-Student Expectations Student Evaluations</p>	<p>← <i>Boundary Crossing Actions</i> →</p> <p><i>College provides support for graduate programs and E-Learning</i></p> <p><i>Department support of E-Learning program development</i></p> <p><i>Department support for online course development</i></p> <p><i>Department documentation of a faculty member's online activities for tenure</i></p> <p><i>Faculty collaborate on program features, goals, curriculum scope and sequence, student assessment, student advising, program evaluation</i></p> <p><i>Faculty dissemination of online teaching best practices</i></p>	<p>Existing Administrator Actions</p> <p>Hierarchical Reporting Department Policies Management Norms Admissions Requirements Student Financial Support</p>
<p><u><i>Boundary Crossing Actions</i></u></p> <p><i>Instructor provides clear specifics on student performance in an online course</i></p> <p><i>Instructor provides prompt, consistent, and constructive course feedback and student advising</i></p> <p><i>Instructor provides flexibility in course delivery features based on students' technological capacity.</i></p> <p><i>Instructor identifies student differences, including international students, and makes adjustments in course implementation.</i></p>	<p>Existing Student Actions</p> <p>Admissions Program Requirements Program of Study Semester Time Frame Financial Issues Advising</p>	<p><u><i>Boundary Crossing Actions</i></u></p> <p><i>Department provides clear specifics on online program requirements</i></p> <p><i>Department provides clear policies and availability of financial resources</i></p> <p><i>Department examines what a contact-hour means in an online course</i></p> <p><i>Department solicits data on improving course and program features</i></p> <p><i>Department identifies program evaluation details</i></p>

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

CURRENT CHALLENGES/FACING THE ORGANIZATION

Short-term Needs

An important administrative shift from the university has been an increased priority on graduate programs. Such a shift signals college administrators to re-visit existing graduate programs and identify opportunities for student recruitment and support, in terms of finances and advising quality.

Faculty are being asked to invest additional time in the design of online courses and programs. Department faculty, however, are still concerned with online course development, rather than online program development. Finding time to discuss these issues is problematic in any academic setting. Agendas that are specific, limited in scope, and achievable provide have been useful to establish the norms and community for this activity.

Staffing of courses for instructors is an issue, given existing faculty workloads and responsibilities to conduct research and service. Some of the department's courses, particularly in research courses, must look across program areas to staff courses. This flexibility enables faculty members in the department to concentrate on course development or research projects, or E-Learning development.

How learning will be assessed in E-Learning programs is an ongoing issue that is currently addressed on by individual online programs in the department. The undergraduate child development program uses the current learning management system to provide security on individual student work, while graduate programs focus primarily on designed artifacts that are open for critiques from class-enrolled students. Online portfolio products are being tested to house these artifacts. Matriculation issues, documenting that students are completing program requirements, still rest on prior form-based mechanisms, rather than an online system that might be used in business training systems.

Long-term Needs

For faculty E-Learning initiatives must figure into faculty members' teaching and research agenda, and that adequate professional development and time be accorded. Particular attention needs to be given to tenure-track faculty who have online teaching expectations, which provides some "success" issues in terms of student evaluations and course preparation time. Guidelines for peer review need to be re-examined in terms of course design and student evaluations.

Students have higher expectations for online courses than traditional F2F courses, resulting in a significant increase in online faculty attention. Program and course clarity in terms of graduation and performance need to be clearly specified. Online training might also be needed for some students who do not fare well in non-F2F settings.

For administrators, E-Learning provides opportunities for significant student enrollment increases, but such initiatives carry with them the need for quality control and ongoing development. Program area coordinators will require a significant amount of time to coordinate E-Learning programs. Departmental meetings, with a long list of other issues, cannot address E-

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

Learning in these settings. An ad hoc work group has formed so that a small group of faculty members can directly tackle E-Learning issues across the academic year. Working groups may providing a more effective organizational structure to identify work priorities and report out to the department results from small cycles of work-decisions.

GUIDELINES FOR USING ACTIVITY THEORY

Brief Constituents on the Purpose of Activity System

Higher education administrators press faculty members for online delivery of courses mostly out of a need to increase student-paying enrollments. Years ago, online teaching experience was a rarity, now it is looked for in new faculty. Developing online programs, however, is a new experience for many faculty members. Activity theory provides a tool to help faculty members unpack the complexity of delivering online programs. The approach provides a working structure to organizing the discussion of developing E-Learning programs. Another value to the approach is that the entire process of E-Learning development is occurring systematically, useful for program evaluation documentation, but also to disseminate what they learn in publications and conferences.

Specify Procedures

What was learned from the use of **activity theory** as an analysis tool was the need for a set of procedures. This case describes a three-step process, including **analysis**, **synthesis**, and **boundary crossing** activities as its procedure. This was done to keep the procedure simple for the faculty meetings. The activity theory structure very much assisted in making sense out of faculty discussions.

Jonassen, Tessmer, and Hannum (1999) suggest six steps. Step 1 clarifies the purpose for the activity system. Step 2 analyzes the activity system by defining the subject, communities, and goals. Step 2 provides a big picture look at the overall initiative. Here faculty decide on such questions as what distinguishes a program from other programs, and what skills and competencies students learn from the program. Step 3 specifies analyzing all of the activities that involve the participants. Here purposes to support the goals are re-examined, action steps are determined, and any design or development work undertaken. Step 4 examines the role of the tools, specifically, the Learning Management System, portfolio software, and synchronous or asynchronous E-Learning tools, on student learning, faculty, teaching, and administrative management. Step 5 addresses the internal and external contextual features. Internal features can include faculty workload concerns, getting along with other members, experiences in teaching and online instruction. External features of the context can include faculty reward structures, external support from administrators, the sharing of tasks, and expectations for performance. Step 6 prompts one to examine what is occurring and progress towards the intended goals, as well as any changes in relationships and understandings of the overall process.

Collaborate Continually and Frequently

E-Learning programs, given their dynamic nature, require a continual collaborative involvement of all constituents. Activity systems visually depict different features of faculty, students, and administrators. The various nodes along the triangle raise an awareness of different rules/norms,

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

community, and roles for these three constituent groups. Comparing goals depicts a possible overlap and potential for a change in existing practices and boundary crossing actions to take place. Conflict will arise, but these conflicts will provide opportunities for discussion and clarity or change. The overall value of activity theory is that the contextual details inherent in three activity systems come into view.

E-Learning programs require a joint involvement of time. Any initiative that asks more time of faculty members will undergo careful scrutiny. The design of E-Learning programs requires significant time to develop, but an ongoing commitment is necessary in their implementation and revision. One way to address the time investment is to identify a working group of faculty members who share joint interest in developing E-Learning programs. The key is to frequently report back to the large faculty group and to solicit input and delegate action across the faculty group.

Share in the Decision-making Process

While faculty are accustomed to developing and revising their own courses, E-Learning programs require more collaborative development to ensure that they are successful. The definition of what constitutes “success” must be clearly spelled out in advance and subsequently evaluated on a continuing basis. Student assessment data will need to become a regular activity which goes beyond the assignment of grades to data used by the program to partially measure success. Program features will need constant revision, and initial assumptions will need to be scrutinized by all three groups, as the overlapping goals of the three groups determined from the activity systems approach, necessitate this attention. Thus, **curriculum development**, and organizational development, which implements the designs, merges over time. The role of the administrator evolves to facilitate collaboration of the constituent groups and keep the overlapping goals and issues in front of everyone.

Manage the Complexity of Information and Contexts

One disadvantage of any context-based approach is that it will generate a lot of information. The activity system nodes and labels under those nodes help to keep the major issues in front of everyone. The management of that information will need to be facilitated by a working group of faculty members. Summary tables serve to communicate periodic working group activity to other members of the faculty group.

Context complexity will emerge from faculty discussions, a complexity beyond their own program or department. Micro and increasingly broader macro contexts at play have their own pace and rate (Boer, van Baalen, & Kumar, 2002), but this understanding prompts members of the faculty to attend to some issues more than others. For example, it may be needed to spend some time working with other groups who have a stake or a say in your E-Learning program. With E-Learning the broader contexts can include college and university agendas, including university-wide instructional support groups. Even with large-scale E-Learning initiatives, decentralizing the discussion enables faculty in academic programs to make their own decisions (Sharpe, Benfield, & Francis, 2006). Attention may need to be applied to new faculty who have tenure-track pressures. These groups are at a different stage of stability. Priorities can then be determined and action steps be assigned with deadlines.

**Cases on Successful E-Learning Practices in the Developed and Developing World:
Methods for the Global Information Economy.**

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

**Cases on Successful E-Learning Practices in the Developed and Developing World:
Methods for the Global Information Economy.**

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

FURTHER READING

Dede, C. (2006). *Online professional development for teachers: Emerging models and methods*. Cambridge, MA: Harvard Education Press.

Engeström, Y., Miettinen, R., & Punamäki, R. (1999). *Perspectives on activity theory*. New York: Cambridge University Press.

Haertel, G. D., & Means, B. (2003). *Evaluating educational technology: Effective research designs for improving learning*. New York: Teachers College Press.

Kaptelinin, V., & Nardi, B. A. (2006). *Acting with technology: Activity theory and interaction design*. Cambridge, MA: MIT Press.

Mishra, P., Koehler, M. J., & Zhao, Y. (2007). *Faculty development by design: Integrating technology in higher education*. Charlotte, NC: Information Age Publishing.

Salomon, G. (1993). *Distributed cognitions: Psychological and educational considerations*. New York: Cambridge University Press.

Shulman, L. S. (2004). *Teaching as community property: Essays on higher education*. San Francisco, CA: Jossey-Bass.

Tierney, W. G. (2001). *Faculty work in schools of education: Rethinking roles and rewards for the twenty-first century*. Albany, NY: SUNY Press.

Van Oers, B., Elbers, E., van der Veer, R., & Wardekker, W. (2008). *The transformation of learning: Perspectives from activity theory*. New York: Cambridge University Press.

Wenger, E. (1998). *Communities of practice: learning, meaning, and identity*. New York: Cambridge University Press.

REFERENCES

Bertelsen, O. W. & Bodker, S. (2003) Activity theory. In J. M. Carroll (Ed). *HCI models theories, and frameworks: Toward a multidisciplinary science*, pp. 292-324. San Francisco: Morgan Kaufmann.

Boer, N., Van Baalen, P., & Kumar, K. (2002). An activity theory approach for studying the dynamics of knowledge sharing. *Proceedings of the Thirty-fifth Annual Hawaii International Conference on System Sciences (HICSS 35)* (pp. 90-93). Los Alamitos, CA: IEEE Computer Society Press.

Cole, M. (1988). *Cross-cultural research in the sociohistorical tradition*. *Human Development*, 31, 137-151.

**Cases on Successful E-Learning Practices in the Developed and Developing World:
Methods for the Global Information Economy.**

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

- Cole, M. & Engeström, Y. (1993). A cultural-historical approach to distributed cognition. In G. Salomon (Ed.). *Distributed cognitions: Psychological and educational considerations*, pp. 1-46. New York: Cambridge University Press.
- Engeström, Y. (2002). *The horizontal dimension of expansive learning: Weaving a texture of cognitive trails in the terrain of health care in Helsinki*. New Challenges to Research on Learning. Helsinki: University of Helsinki.
- Engeström, Y. (1987). *Learning by expanding: An activity-theoretical approach to developmental research*. Helsinki: Orienta-Konsultit.
- Gay, G., & Hembrooke, H. (2004). *Activity-centered design: An ecological approach to designing smart tools and usable systems*. Cambridge, MA: MIT Press.
- Griffin, P. & Cole. M. (1984). Current activity for the future: The zo-ped. In B. Rogoff & J. V. Wertsch (Eds.), *Children's learning in the zone of proximal development*. San Francisco: Jossey-Bass.
- Jonassen, D. H., Tesser, M., & Hannum, W. H. (1999). *Task analysis methods for instructional design*. Mahwah, NJ: Erlbaum.
- Li, J. Z., & Bratt, S. E. (2004). Activity as tool for analyzing asynchronous learning networks. *Lecture Notes in Computer Science*, 3143, 19-26.
- Pang, P. M. N., & Hung, D. W. L. (2001). Activity theory as a framework for analyzing CBT and E-Learning environments. *Educational Technology*, 41(4), 36-42.
- Robertson, I. (2008). Sustainable e-learning, activity theory and professional development, (pp. 819-826). In *Hello! Where are you in the landscape of educational technology? Proceedings ascilite Melbourne 2008*.
<http://www.ascilite.org.au/conferences/melbourne08/procs/robertson.pdf>
- Salmon, G. (2005). Flying not flapping: A strategic framework for pedagogic innovation in higher education institutions. *ALT-J Research in learning technology*, 13(3), 201-218.
- Sharpe, R., Benfield, G., & Francis, R. (2006). Implementing a university e-learning strategy: Levers for change within academic schools. *ALT-J Research in learning technology*, 14(2), 135-151.
- Vygotsky, L. S. (1978). *Mind in society: the development of higher psychological processes*. Cambridge: Harvard University Press.

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

SUPPORT MATERIAL

1. Questions and Answers

1. What is the overall problem(s) in this case?

One problem is convincing faculty members that their job involves online program development, rather than the traditional distinctions of faculty workload, which include teaching, research, and service activities. A second problem is evaluating to what extent activity theory provides a tool to understand online program development issues and make decisions.

2. What are the factors affecting the problem(s) related to this case?

Three factors influence the problems in this case. First is gaining faculty involvement. A related factor is time, in which faculty must be convinced that the time they spend on online program development is warranted and a good investment. A third factor is organizing faculty discussion around critical success issues, and moving the group towards its goals through decision-making.

3. Discuss managerial, organizational, and technological issues and resources related to this case.

Managerial issues involve getting people “to the table,” and facilitating discussion and action. Organizational issues involve how to structure the group’s inquiry and decision-making keeping students, faculty, and administrator issues “on the table.” Technological issues tend to center around the veracity of the learning management system to accomplish the goals of online program development, and staff support.

4. What role do different players (decision-makers) play in the overall planning, implementation and management of the information technology applications?

Faculty members are traditionally viewed as the “players” who make curriculum and program decisions, while administrators may set an agenda or priority in front of them, based on administrative strategic plans. Faculty, however, do look to administrators for support in one program development. Students are not seen as decision-makers. Activity theory acknowledges their role in online program development.

5. What are the possible alternatives and pros and cons of each alternative facing the organization in dealing with the problem(s) related to the case?

Choices facing faculty members are to do nothing, migrate slowly with online programs, or implement and test out full online programs. The downside of doing nothing is to lose students to other institutions and programs. The slow migration alternative has benefits in that program features can be tested out and “bugs” worked out over time. The downside is that potential students are attracted to complete programs which are online. The downside to deploying an

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

online program is that not all contingencies will be addressed, and that faculty must pay attention to fast iteration cycles, which they are not used to outside of a semester time clock.

6. What are some of the emerging technologies that should be considered in solving the problem(s) related to the case?

Evolution of existing learning management systems (LMS) which include both synchronous and asynchronous tools, new assessment options, and matriculation data (i.e., how students move through a program). Use of video in online programs may become routine. Portfolio systems which connect to these LMS or a component of an LMS will facilitate the online storage of student work. Technical issues include operating systems, platforms, add-ins for LMS releases, and accessibility (i.e., can all students reach the program features and materials?).

7. What is the final solution that can be recommended to the management of the organization described in the case? Provide your arguments in support of the recommended solution.

One long-term solution would be to work out a new way that faculty organize and get work done, especially the type of work that requires faculty members to see opportunities and work to take advantage of them. A short-term solution is a better understanding of the issues involved in online program development, and to provide ongoing training to new faculty in what it means to teach online.

2. Epilogue and Lessons Learned

This case is another example of the need for all working groups to continually work together in examining new opportunities. Ongoing re-examination of the workplace is also needed, as many of the new markets and opportunities require that the nature of the work may dictate a change in how work is organized. This case also provides an example of the pressures and opportunities inherent in change, and how organizations can change the way they work and look at work.

Lesson 1: Theories can be used as any other tool, but they can be changed.

Theories are usually developed through expertise, but they can be used to help practitioners in all fields to better understand how humans see the world and to discuss these representations. Theories seen as tools become more accessible by everyone. When theories are put to use, the “lessons learned” can be applied to tweak the theory and to provide examples for others to try out.

Lesson 2: The context of any working setting is more complicated than we know or can imagine.

Trying to analyze all of context is impossible, but ignoring the major contextual factors in any goal-directed activity will have consequences. The issues of how humans working together is key to meeting the needs of the organization, its mission and financial goals.

Cases on Successful E-Learning Practices in the Developed and Developing World: Methods for the Global Information Economy.

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

Lesson 3: Much of what derails decision-making lies hidden in the ways that people view their work and roles, and the performance of others.

Lesson 3 is a specific instance of context. In addition to meeting the identified goals of an organization or a group, examining the context means that people acknowledge different roles and division of labor, and acknowledge the communities of practice that exist. Another benefit to examining context and re-designing the way we work is that unintended benefits may arise from such continual practices, such as attracting new talent and identifying new opportunities.

Lesson 4: organizing group thinking and decisions requires an ad hoc approach, and that one approach may never work in another setting or instance.

Some form of organizational processes and procedures may already exist in one's organization or other institutions may have developed them. These are worth to try out, but each group needs its own organizational methods which need to be documented and evolved over time. One of the requirements of including context awareness into the "mix" is the need to find new ways of organizing the process and of what to do with the vast amount of information a group will uncover or develop.

List of Additional Resources

Books:

Bedny, G. Z., & Meister, D. (1997). *The Russian theory of activity: Current applications to design and learning*. Mahwah, NJ: Erlbaum.

Bedny, G. Z., & Karwoski, W. (2006). *A systematic-structural theory of activity: Applications to human performance and work design*. Cleveland, OH: CRC.

Nardi, B. A. (1996). *Context and consciousness: Activity theory and human-computer Interaction*. Cambridge, MA: MIT Press.

Saint-Onge, H., & Wallace, D. (2002). *Leveraging communities of practice for strategic advantage*. Burlington, MA: Butterworth-Heinemann.

Wenger, E., McDermott, R., & Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Cambridge, MA: Harvard Business School Press.

Journals:

Johnson, L. (2006). Managing intellectual property for distance learning. *EDUCAUSE Quarterly*, 29(2), 66-70.

Morris, L., Xu, H., & Finnegan, C. (2005). Roles of faculty in teaching asynchronous undergraduate courses. *Journal of Asynchronous Learning Networks*, 9(1).

**Cases on Successful E-Learning Practices in the Developed and Developing World:
Methods for the Global Information Economy.**

A book edited by Bolanle A. Olaniran, Texas Tech University, USA

Online sources:

<http://www.griffith.edu.au/projects/online-program-development-project>

Example of a structured work flow to manage an online program system.

<http://alt.usg.edu/collaborative/programs/roadmap.phtml>

Site that organizes online degree programs across a state university system, including program models, policy considerations, and general planning.

<http://www2.creighton.edu/onlinelearning/programandcoursedevelopment/programdevelopment/index.php>

Example of a university online web pages that assist program in online course and program development.

<http://akoaooteaoroa.ac.nz/sites/default/files/ng/group-661/n877-1---e-learning-in-context.pdf>

Online E-Learning series