Innovative Action-Based E-Learning Strategies

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> *This is one of six innovative sessions proposed for the AHRD Scholar-Practitioner Track and coordinated by the AHRD Scholar-Practitioner Committee. It examines a suite of novel e-learning design options and how to implement an action-based approach to online learning. Participants have the opportunity to hear about these innovative approaches to HRD practice and examine the potential for it impacting their own organizations.*

Keywords: Research to Practice, E-Learning, Experiential Learning

This session introduces unique and innovative approaches to e-learning program design. The focus is on the over-riding experience and how it contributes to learning rather than the detail of threaded discussion, asynchronous/synchronous, or delivery vehicle selection. Commonalities among the approaches and their distinct and unique differentiating characteristics will be examined.

The session will introduce examples of situations in which action e-learning and problem-based/project-based learning have been implemented. Participants will then examine their own programs/workplaces for potential application of these approaches.

Goals

The goals of this session are for participants to:
1. Gain a shared understanding of e-learning design options.
2. Hear the experiences of those who have designed, implemented, and managed innovative e-learning programs using action learning and project-based/problem-based learning.
3. Examine each aspect of these approaches.
4. Share learning between more- and less-experienced scholar-practitioners within small-group settings.
5. Document potential applications that are identified by participants.

Session Content

Web-based instruction is one of the past century's most talked about educational and training media. In an attempt to actualize the power of this tool, organizations are experimenting with innovative methods to improve their learning processes (Yoo, Kanawattanachai, & Citurs, 2002). The resulting courses offered over corporate and educational Intranets -- also called Web-based Instruction or WBI -- present what can be a cost-effective alternative to face-to-face training (Fornaciari, Forte & Mathews, 1999; Phillips, Phillips, Duresky, & Gaudet, 2002; Roberts, 1998).

When WBI was first implemented in the 1990's it was defined and designed for the capabilities of the technology, not the type of adult learning environment or experience provided (Driscoll, 1998, 1999; Hall, 1997). It was common for those creating the WBI courseware to be experts in a subject matter or in the technology but with little or no understanding of how to design instruction to accommodate the way adults learn (Khan, Waddill, & McDonald, 2001). In the latter part of the 1990's new developments took place as a result of research, and some important design recommendations resulted. For instance, we know that e-learning is particularly attractive to adult

learners because of it flexibility (Arbaugh & Duray, 2002), learner control of the learning process (Rossett, 2002), opportunity to reflect and provide thoughtful responses as well as to use conceptual thinking (Arbaugh & Duray, 2002), option for collaboration (Arbaugh, 2000), and cause for participants to enhance their ability to function in the e-learning and networked computer mediated environment (Meisel and Marx, 1999). However, learners only reap the benefits of e-learning if the designer implements researched and proven best practices.

E-learning Design

The results of e-learning research provide guidelines for designing effective learning environments. We know that e-learning design should allow students to establish their own norms and that those norms need to be very clear. There should be office hours for the e-learning instructor, and they should span a larger amount of time than the hours offered by classroom instructors. Instructors should use a combination of email, bulletin board, video, office hours, and phone to communicate. Instructor feedback must be clear because there are no cues from body language. E-learning should not allow emergent design to occur during the course offering. "What might be spontaneous in an on-campus setting spells confusion at a distance, so care should be taken to be extraordinarily organized and clear" (Brindle & Levesque, p. 453). Consequently, learners should receive written instructions before class begins.

We also know that adults need protected time to reflect in order to learn (Argyris, & Schon, 1974; Schon, 1983, 1987). From the perspective of the learner, the asynchronous e-learning design enhances the opportunity for reflection. As Ivergard and Hunt (2004) point out, e-learning provides opportunity for participants to reflect and translate learning out of their practical application of explicit knowledge. Inherent to the asynchronous e-learning environment is the time lag between reading and entry, which allows reflection. Journaling or answering probing questions in an online forum can also stimulate reflective practice. For deeper learning, there must be time for self-reflection on learning assumptions or actions (DeFillipi, 2001).

Adult learners benefit from the synergy and multiple perspectives provided in social learning situations (Bandura, 1977, 1986) and, specifically, communities of practice (Brown & Duguid, 2000). In a social context, they learn through interacting with and observing other people. Communities can be encouraged in the online medium. Murphy and Cifuentes (2001) reported in their case study the following recommendations to form an online community: 1) establish a balance between structure and dialogue as maintained by the instructor; 2) provide instructional support because participants must be oriented to the technology before using it and that should be part of the process of preparation for participation in an online community; 3) A sense of community can be built through "purposeful design of activities that are self-directed, reflect real-life experiences, and provide for collaboration and bonding" (p. 8). Ahern and El-Hindi (2000) found in similar research that learning communities formed when participants worked together on common topics.

The e-learning designer must accommodate the instructor's changed role. The online instructor must be prepared to engage in more personal dialogue with the participants (Berger, 1999). In fact, in the e-learning environ the instructor becomes a facilitator or coach (Clark, 2001). As facilitator he/she should not exert a dominant point of view (Poole, 2000). Rather the instructor should facilitate peer interaction while structuring and supporting the process with the goal of building learning communities online (Swan, 2002).

To handle the changed role of the facilitator and to better serve the instructional purpose, the e-learning situation should be limited to less than 20 participants (Stevens-Long & Crowell, 2002). Additionally, discussion group size and work teams should be no larger than 4-5 participants (Thielman in Berger, 1999). Personalities tend to change online therefore the usual predictors cannot be used to configure groups and try to create a personality mix. However a gender balance is helpful (Weasenforth, Biesenbach-Lucas, & Meloni, 2002).

E-learning Applications

Educational institutions have begun to rely more heavily upon e-learning delivery using a variety of applications. Some creative design applications and features for Web-Based instruction include implementation in an interpersonal skills course (Human, Kilbourne, Clark, Shriberg, & Cunningham, 1999), project-based instruction online (DeFillippi, 2001; Rhodes & Garrick, 2003), problem-based online learning (Dolmans, Gijselaers, Moust, de Grave, et al, 2002; Gijselaers, 1995; Kanet & Barut, 2003), and online discussion rooms. The latter is particularly popular as a method to increase interactivity, community, and the meaningfulness of the courseware (Brower, 2003; Yoo, Kanawattanachai & Citurs, 2002). These approaches to Web-based instruction have been employed in the management education and management training environments in an effort to increase the quality of online courseware.

Constructivism

Many of the above-mentioned e-learning applications favor a constructivist design. What is constructivism? Savery and Duffy (1996) explain that the goal of constructivism assumes that understanding comes as a result of our interactions with our environment. The constructivist believes that cognitive conflict or puzzlement is the stimulus for learning and determines the organization and nature of what is learned. For the constructivist, knowledge

evolves through social negotiation and through evaluation of the viability of individual understandings. The impact of constructivism on the instructional design process is summarized by Perotti, Gunn, Day and Coombs (1998) when they state that a constructivist design should: a) anchor all learning activities to a larger task or problem; b) support the learner in developing ownership for the overall problem or task; c) design an authentic task; d) design the task and the learning environment to reflect the complexity of the environment they will function in at the end of the learning; e) give the learner ownership of the process used to develop a solution; f) design the learning environment to support and challenge the learner's thinking; g) encourage testing ideas against alternative views and alternative contexts; h) provide opportunity for and support reflection on both the content learned and the learning process

When commenting on Web-Based Instruction and constructivism, Byrne (2002) states "It appears to be more suited to subjects and learning styles that are exploratory in nature, and that encourage self-directed learning rather than teaching. As a medium it (WBI) is primarily constructivist and andragogic, and therefore should be very applicable to companies seeking to establish a knowledge sharing culture." (p. 48) Constructivism applied to e-learning engages the learners as co-producers of the course (Lengnick-Hall & Sanders, 1997).

Management learning favors a constructivist design when the practical aspect of managing people broaches ill-defined or ill-structured domains. In such case, knowledge alone does not suffice. Assuming that managers need more than knowledge alone in order to function in a heavily complex and inter-personal business realm, the trend in management education is toward an active or experiential approach to learning. Action learning, problem-based learning and project-based learning design have been used effectively as constructivist designs both in the classroom and in the e-learning environment.

Action Learning, Constructivism, and E-Learning Design

Action learning is a powerful organizational, team, and individual learning process pioneered by Reg Revans in the early 1950's. The basic assumption of action learning is that "managers learn best by taking action and reflecting on the action" (Revans, 1998). The components of action learning include a set of people working on live, unsolvable problems through questioning the assumptions and conditions of the presented problem. A facilitator keeps the action learning set on task. Someone in the set must have authority to enact the solutions that are identified through the process. That person takes action on the problem and reports the results back to the set. This process may go through numerous cycles and sometimes the very problem itself becomes reframed as the understanding of the problem increases and solutions are implemented.

Marquardt (1999, 2004) distilled this process into six key elements: 1) an action learning set of 4-8 people; 2) an urgent problem; 3) a facilitator; 4) a commitment to learning by all set members; 5) a commitment to taking action on the problem; 6) questioning and reflection (reflective inquiry) approach. It is Marquardt's approach that was used in this study. Waddill put this process online as an instructional methodology and has since implemented within an e-learning curriculum (Waddill, in press).

Action learning lends itself to constructivist design for implementation in web-based instruction. The action set reflects the recommended size of an e-learning workgroup. Action learning promotes reflection for increased learning. The action learning "facilitator" becomes a coach. In fact, to quote Revans in Mumford (1995) "Action learning attacks the inveterate hankering of the teacher to be the center of attention" (p. 2). This role modification aligns with the preferred role of the instructor in the e-learning environment. The action learning process satisfies the constructivist learning goals. The action learning reflective inquiry process surfaces multiple perspectives on a problem. The action learning set typically provides diversity because of the unique backgrounds of the participants. The problem-solving process encourages collaboration and serves as the foundation for embracing multiple perspectives (Honebein, 1996). The learning is embedded in a realistic environment due to the action-learning requirement to address "live" problems. Knowledge is gained through the research that is instigated by the action learning questioning process. Additionally, the use of live problems enables the transfer of knowledge gained in the action-learning context. Individuals take ownership of the learning process through their commitment to learn and the fact that they must have the power to take action to address his/her own problem. The instructor for an action learning course becomes a facilitator, mentor, coach and consultant (Marquardt, 1999, 2004) rather than the "sage-on-the-stage."

Problem/Project-Based Learning

Problem-based learning and project-based learning are two variants of what Tom Duffy (2004) calls inquiry-based learning, both firmly rooted in constructivism. To the extent that there is a difference between the two, it is related to the scope of the problems or projects used. The projects used on project-based learning typically are larger in scope, often providing the stimulus to engage learners for three months or more. Because the differences are minute and because it is the primary approach we use at Ohio University Without Boundaries, we will focus on project-based learning.

How Does Project-Based Learning Work?

Project-based learning is a constructivist approach to learning in which participants learn by working through situations, problems, or projects that are similar to those encountered in the work situation. Learning is approached holistically rather than within the boundaries of artificial discipline-based compartments. Learners master concepts, but learn them in the context of use, maximizing their ability to both recall and apply those concepts as they move back into the work world. They develop the skills (communication, collaboration, teamwork) and the personal characteristics (initiative, creativity, personal responsibility) that are necessary for success. Over time, the process of doing and the process of learning become intertwined and the learner manager becomes the learning manager, possessing the capability of learning from experience throughout a lifetime. Project-based learning follows the steps in the following model**:**

1. *The Challenge*. Participants are confronted with an ill-structured situation, without prior preparation. It can be a problem, a question or a project. It can be presented informally initially, but is always formalized into a charge. The learning project is central to the learning experience. It engages the learner and creates a "need to know" intended to drive the learner into the content. It is, of course, developed on the basis of the desired learning outcomes and the target audience.
2. *Issue Identification*. Participants identify the issues they must confront and manage in order to produce the deliverable required by the charge. Two types of issues are identified: 1) Project Issues - Information and data needs that are unique to the project situation that must be collected and analyzed in order to develop the deliverable, and 2) Learning Issues - Knowledge of concepts and techniques and abilities that need to be present or developed in order to develop the deliverable. These are areas that are not unique to the project, but are generalizable and applicable in many similar situations.
3. *Inquiry*. Based on the identified issues, participants engage in inquiry. They conduct research to collect information and data necessary for the project. They also engage in learning activities, independently, in a tutorial relationship with faculty, and/or with interactive learning modules developed and provided for their use.
4. *Action*. Participants then analyze the data collected, using the learning developed, and make decisions regarding the deliverable. Note that this frequently involves iteration of point 2 and 3 as more information or knowledge leads to the identification of additional issues and to the need for more inquiry. At some point, however, the iterations must stop (usually caused by a time deadline) and the deliverable must be prepared and delivered.
5. *Reflection*. After the deliverable is presented and feedback is received, participants engage in reflection. We believe practice that is unexamined does not lead to learning. Rather, the process of reflection is central to making learning explicit and being able to recall and use the content learned and skills developed in other situations. Many approaches are used to facilitate reflection, ranging from simple discussion, to written diaries, written responses to questions, and confronting and managing similar situations.

Why Are Companies Moving to Action-Based Learning?

Since we started developing and using this type of learning in the mid 1980s, we have seen a significant increase in use of variants in higher education and a much more extensive increase of use in corporate education. Why has corporate education moved more rapidly than educational institutions? Part of the reason is the reticence to change on the part of many university faculty members. More positively, however, many organizations (corporate and non-profit) recognize the strong value-add of project-based learning. In particular the following reasons are noted:

1. Participants develop knowledge, but they develop it in an active way rather than in inert format – *deeper learning*.
2. They learn content in the context of its use thus maximizing future recall in similar contexts – *longer lasting learning*.
3. They develop skills as well as knowledge and reinforce appropriate personal characteristics – *broader learning*.
4. They learn how to integrate work and learning and use future work situations as learning opportunities – *multiple learning*.
5. Deliverables from the learning projects can often provide *direct value-add* to the organization

Description of Format, Style and Agenda

The session will be structured as follows:
1. Introduction and session overview (5 minutes).
2. Description of the action e-learning, problem/project based learning and examination of a graphic summarizing (handout) what these approaches hold in common and what differentiates them from each other. We will need a PowerPoint [LCD or other] projector for a laptop and we will bring the laptop (30 minutes).
3. Small-group discussions examining potential applications (40 minutes).
4. Reporting back from each of the small groups – focusing on key learning points (15 minutes).
5. Wrap-up: summary of the main points from the session (5 minutes).

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