Chapter 24

ACTION E-LEARNING

An Exploratory Case Study Examining the Impact of Action Learning on the Design of Management-level Web-based Instruction

Deborah DeWolfe Waddill
Restek Consulting, *Vienna, Virginia, USA*

1.   INTRODUCTION

Web-based instruction is this 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).

On the balance sheet, WBI that is high volume and low margin can be cost effective (Forman, 2002). Conversely, however, those cost efficiencies are partially eroded when the class size is small and the development costs high. In the latter case, Fornaciari, Forte, and Mathews (1999) point out that organizations with a strategy for differentiation — where the firm's product or service offering creates something that is perceived as being unique — can demand a higher price and sustain smaller, more individualized classes. In so doing they can realize the cost benefits.

When WBI was first implemented in the 1990s 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). Typically, those creating WBI courseware were experts in a subject matter or in the technology but had little or no understanding of how to design

475

instruction to accommodate the way adults learn (Khan, Waddill, & McDonald, 2001). In the latter part of the 1990s new developments took place, particularly in the area of education.

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, & Grave, 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. To date, however no studies have been conducted measuring the impact of the powerful management development process called Action Learning as a WBI delivery method. Action learning has been offered over the Internet as a course (Reeve, 1998) and as an online tutoring approach (Sandelands, 1999). In both cases its impact on the learning process was favorably reported. However, the action learning process has not been applied as a Web-based instructional method.

Reg Revans was the creator and "father" of action learning (Dilworth, 1998b). He developed this method originally as he worked with the British government for the nationalization of the coal industry. In that situation, the action learning participants visited each other's work sites and consulted with each other to solve real, "live" problems. Later he refined his action learning approach and relied upon those who were considered to be part of the problem to solve the problem. Revans went on to use this process in other parts of the world.

In the 1990s, Marquardt (1999) formalized the action learning process when he distilled the elements of action learning. Marquardt identified six essential features of action learning: (1) a problem in need of resolution; (2) a group of four to eight people called the action "set"; (3) a commitment to the use of a questioning and reflection process; (4) a commitment to taking action (by one with the authority to do so); (5) a commitment to learning; and (6) a facilitator to enable the process. Marquardt's approach is advantageous because it provides workable actions and conditions that specify exactly how action learning can succeed. Marquardt's action learning method was used in this study.

Action learning differs from other management education methods such as experiential, problem-based, project-based, or workplace learning

(Marsick & O'Neil, 1999). Unique to action learning is the convergence of these criteria: the problem must be a "live," urgent problem; the problem presenter must have the authority to enact a solution; and the group/set members must participate in a questioning process called reflective inquiry. As a result of the reflective inquiry process the presenting problem may be "reframed" or may change in nature (Marquardt, 1999, p. 2004).

2. THE STUDY APPROACH

The research reported in this chapter examined how action learning impacted the effectiveness of one management-level online course. The research idea was spurred by the awareness of design challenges for Web-based instruction. Reportedly, WBI needs to spur interactivity in order to increase learning. The action learning approach addresses these needs.

2.1 Research Question

An exploratory case study method was used to approach the research question: *How does the action learning process impact the effectiveness of one management-level e-learning course?* According to Yin (2003), case study research is most appropriate as a method when the question to be answered is a "How" question. It was chosen as the methodology for this study because the exploratory case study "tries to illuminate a decision or set of decisions: Why they were taken, how they were implemented, and with what result" (Schramm in Yin, 2003, p. 12).

3. THEORY AND WBI

Since adult learners were the target audience, adult learning theory provided the theoretical underpinnings for the research. Knowles (1973) examined characteristics of adult learners that are still relevant for training design in the 21st century (Shandler, 1996). Knowles noted that adults tend to prefer self-direction. This implies that training, at least in part, needs to allow for choice, input, and decisions by participants. Learning should encourage the communication, reflection, and evaluation of adults' experiences in light of the educational content and goals. Additionally, adults appreciate methods that simulate the work environment because they want to acquire knowledge and skills that can be immediately applied to real life situations. Later, Knowles added two more characteristics to his

description of the adult learner (1984, 1998). First, adults are externally motivated by incentives like promotions, new knowledge, better pay, etc. Second, adults identify their own learning needs based upon real-life events. When they identify their own skill deficiencies they will be more participatory and open to learning that addresses the knowledge gaps.

3.1   Adult Learning Theory and WBI

Web-based adult learning must be designed with the adult learner in mind and should address these needs. Consequently, WBI should allow adult learners to interact with other learners (Saba, 2000), work with others (Bandura, 1977, 1986; Cho and Berge, 2002; Dewey, 1916), have control of their learning (Rotter, 1954; Rotter, Seeman, & Liverant, 1962), have incentives to learn (Keller & Kopp, 1987; Martins & Kellermanns, 2004; Rossett, 2000), and have time for reflection to help them make meaning of their learning experiences (DeFillippi, 2001; Marsick, Cederholm, Turner, & Pearson, 1992; Schon, 1987). Adult learners differ significantly from most undergraduates who have had neither the life experiences nor the responsibilities of an adult (Nadkarni, 2003). The target audience for this study was managers who demonstrated potential for the executive track.

While the need for some learner control is a characteristic of the adult learner and should be designed into the WBI (Rotter, 1954; Rotter, Seeman, & Liverant, 1962), learner control can inadvertently undercut the learner's own goals. Adult learners may remain engaged in Web-based instruction until they have learned what they feel they need to improve a specific skill or to learn a certain task (Zielinski, 2000, p. 66). They may drop the course when other priorities and responsibilities seem more important (Parker, 1999). Along those lines, Carr (2000) states that because many WBI learners are older and have more competing obligations, they may drop out of the course when other obligations claim priority. In these cases, learner control is both an asset and a liability. Adult learners have control over their learning in a WBI environment such that they can drop out when the WBI no longer serves their purposes. Consequently, the designer of WBI must distribute relevant learning activities throughout the course to keep the learner involved.

3.2   Instructor/Facilitator and WBI

Web-based instruction rocks the very core of instructional design largely because "The Internet has blurred the distinction between who is a content user and who is a content provider, throwing off-balance another pillar of training — the role of the instructor" (Galagan, 2000, p. 29). Rather than

deal with the modified role of the instructor, some organizations have simply eliminated the instructor/facilitator from the delivery of WBI. This type of training is pre-programmed instruction that is delivered over an Internet connection. The impact of that decision upon the learner may be increased isolation (Cho & Berge 2002).

Specifically, this study addressed management training and development as opposed to entry level, new-hire, or front-line training and development. The selection of the management construct allows examination of a management development method called action learning. Action learning assumes that the learner must have the power to make decisions and the authority to implement solutions to business problems, two things which undergraduates, new-hires, and entry-level personnel may not normally have.

3.3   Evaluating WBI

Kirkpatrick's Four Levels of Evaluation served as the foundation for measuring effectiveness in terms of the ways in which participants' knowledge and behavior changed. According to Kirkpatrick, it is important to capture an initial reaction to the course. Kirkpatrick (1994) states, "Positive reaction may not ensure learning, but negative reaction almost certainly reduces the possibility of its [learning] occurring" (1994, p. 22).

Other tools for evaluating WBI exist, but Kirkpatrick's method is accepted and endorsed in the e-learning literature as a viable process for evaluating the effectiveness of online instruction (Hall & LeCavalier, 2000; Hughes & Attwell, 2003; Mayberry, 2005; Singh, 2001). Further, in comparison to other more prescriptive evaluation tools, these Four Levels of Evaluation provide the flexibility that is necessary to assess a constructivist design where participants develop their own learning goals and objectives.

In the action learning online course, there were only twelve volunteer subjects; this number of participants/respondents does not satisfy conditions necessary for quantitative research. Thus the parameters of the research, the environment, the target audience, the number of participants, the philosophical underpinnings (constructivism) as manifested in the course design provide the conditions necessary for implementing Kirkpatrick's Four Levels of Evaluation. Kirkpatrick's four levels are:

- Level One — What were the students' perceptions of the learning approach to the course?
- Level Two — What was learned?
- Level Three — Was the learning being used and if so, how?
- Level Four — Did the learning have a positive effect on the host organization?

4.   METHOD

This study examined the impact of the action learning process upon a management-level web-based instruction course. In order to accomplish this end, the selection of host organization and the identification of courseware for modification were critical. With regard to the host organization, it had to be one that embraced adult learning principles and allowed for increased learner control, as well as the infrastructure to support WBI (Marquardt, 1999). These were available through the host organization. The host site, a for-profit training consulting organization, agreed that an action learning approach was a viable Web-based instruction methodology and allowed the researcher (and author of this chapter) to use their server to pilot a WBI action learning course using action learning as the method.

4.1   Host Site

The host site for this research will be referred to as "Management University" (MU); this is not the actual name. MU is an educational organization that provides training to United States federal government employees. Management University delivers hundreds of face-to-face and online courses on a wide variety of topics.

The Director of Training at MU agreed to the action learning online research because of its relevance to and potential impact on their present offerings, however the researcher received no remuneration for the services provided. MU's Leadership Development Program (LDP) grooms managers for upper-level management. It is a yearlong management development program. Managers who wish to participate in this training must be nominated by their own management and then must go through a rigorous selection process that includes a pre- and post-program performance review by peers, subordinates and superiors, a personality test, and other evaluative measures. At the conclusion of the program, managers create their own Management Development Plan (MDP).

4.2   Participants

The participants in the Action E-Learning course were management-level individuals who were graduates of MU's Leadership Development Program. A recruitment letter was sent out to LDP Alumni requesting volunteers to participate in this groundbreaking research. Twelve recent graduates of the program volunteered and participated in the action learning online course.

The twelve volunteers had the following common characteristics: they were all senior managers working in a federal government position, they

each had completed the LDP, they worked in a variety of locations nationwide, they had Internet access and typically used the Internet in daily business transactions, they were familiar with computer-based learning, and they were committed to rendering positive change within their organizations. During the LDP, they each had developed their own Management Development Plan (MDP).

The volunteers were grouped into three sets. Since the online environment often changes and even reverses personal assertiveness and communication styles (Weasenforth, Biesenbach-Lucas, & Meloni, 2002), participants were not grouped by personality type. However, a gender balance was intentionally established (Arbaugh, 2000).

4.3   Propositions

A management-level course on the topic of action learning was modified to include action learning methods, yet conform to the same curriculum purpose, goals, and content. The unit of analysis was the individual within the action learning set. The propositions (Yin, 2003) to be examined were:

- Proposition 1:   The action learning component will prompt each learner to examine at least one troubling, business/workplace problem related to the course content.
- Proposition 2:   The learner will take action and report the results of the action as a learning opportunity for the other participants in the set.

The results of this case study demonstrate the impact of using action learning as an effective approach for the design of management-level WBI.

4.4   Course Strategies

The course included strategies to:
- Capitalize on the learners' Management Development Plans and give them an opportunity to customize their learning to their own development plans.
- Allow the learners to, consequently, establish their own, personal goals and learning objectives relative to their Management Development Plans.
- Provide resources relative to the components of the action learning process.
- Introduce participants to the processes, principles, tools, and skills to lead and/or participate in open-group action learning sets.
- Provide practice scenarios.

- Immerse the learners in real life scenarios by allowing them to submit their own "live" problems for the course discussion and personal action.
- Introduce the learner to the reflective inquiry (questioning and reflection) processes unique to action learning.

4.5   Action E-learning Courseware Design

The design for this WBI course included steps to modify the face-to-face version of the course to create an online offering using action learning as the method. A redesign process must occur in order to adapt to the assets and liabilities of the online environment (Brindle & Levesque, 2000). Design changes were made to accommodate asynchronous delivery online. The areas impacted by these design changes are the following:

- The learning environment provided the most dramatic difference. The Action Learning Course was conducted face-to-face in a classroom whereas the Action E-Learning (AEL) Course was conducted in a Web-based (virtual) environment using asynchronous communication and Blackboard as the Learning Management System.
- The face-to-face course was conducted over fourteen weeks where participants met in a classroom every two weeks for eight-hour sessions. At the client's request, the Action E-Learning Course was shortened to five, continuous weeks.
- The audiences differed; for the face-to-face version the students were masters or doctoral level students. For the Action E-Learning course the participants were all graduates of the Leadership Development Program.
- The purpose and goals/objectives for the face-to-face offering were very specific and based in the behaviorist approach to course design; on the other hand, in the AEL Course the participants developed their own learning goals and tied them to the Management Development Plan (MDP) that they designed while enrolled in the Leadership Development Program.
- In the face-to-face class, the topics progressed from a simple to complex approach whereas in the Action E-Learning information was arranged in blocks; the learners provided their own sequencing.
- The face-to-face course did not require the participant to consider reframing the problem, though it may have occurred. The Action E-Learning threaded discussion required, after the first week, that the participants either restate or reframe (modify) their problem statement at the beginning of each week-long cycle of questions.

- In the classroom course, there was a teacher and towards the end of the course participants rotated the action set facilitation. In the Action E-Learning Course the teacher was a set facilitator who offered resources and facilitation expertise and could only ask questions; participants did not rotate set facilitation.
- In both classes each participant presented an urgent issue/problem. This is called the open-group approach as opposed to the single problem approach where the entire set works on one problem with the sponsor (the one responsible for implementing the solution) participating in the set (Marquardt, 2004).
- In the face-to-face AL Course, the students were assessed based upon their active participation, journal log, and research papers. The Action E-Learning Course participants assessed their own learning by: creating personal goals tied to their Management Development Plan, presenting a business problem, setting norms, generating questions and answering those posed, submitting a learning log that recorded what they had learned, reframing their own problem, assessing and reporting whether or not they met their goals, and completing the end-of-course interview. Another unique facet of the AEL course was that the facilitator conducted a follow-up inquiry within six months of course completion. The purpose of the inquiries was to identify the status of the participants' solutions and subsequent actions to resolve the problem.

4.6   Action E-learning Cycle

This course introduced a unique tactic for Web-based, asynchronous discussion. Participants were required to follow a pre-specified discussion approach. The facilitator set the guidelines for the sequence of activities while the participants in each set established the norms. The WBI literature attests to the wisdom of having predetermined rules of interaction in order to limit the chaos that can occur online. Brindle and Levesque (2000, p. 453) state, "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." Figure 1. The Action E-Learning Cycle depicts the required discussion sequence of action e-learning.

Participants posted their urgent problem in the threaded discussion on the first day of the weeklong session. There were five one-week sessions in the course. Relevant readings were cited under the References button in Blackboard. The Announcement page that appeared when participants logged in to Blackboard provided direction and activities for the weeklong session. Participants were required to pose at least three questions for their
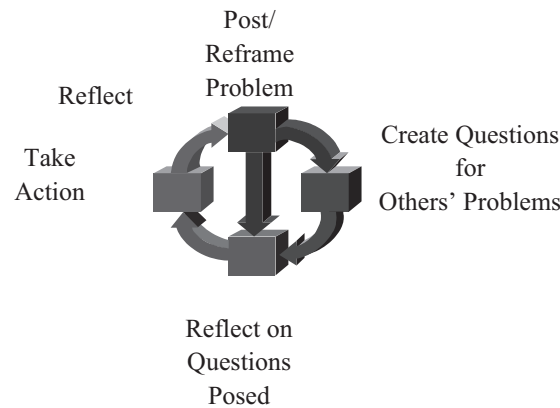
Figure 1. The Action E-Learning Cycle

other set members before midweek. Then they reflected on the questions about their own problems, made a commitment to action, and reported on the results of actions taken. Since this course was only five weeks long, many participants did not take action until the end, if at all, but a majority of the participants did identify actions they would take.

On the first day of the next one-week session, participants either "reframed" or restated the urgent problem. Reframing occurs when the person presenting the problem feels that the core problem has changed. Set members asked questions of each other and the cycle continued until the participant came to a solution and actions to implement or the course ended. There were no phone conferences or face-to-face sessions with the participants. Most of them did not know each other. The researcher/facilitator never met the participants face-to-face. The purpose of conducting this course entirely as WBI, not blended learning, was to determine if the WBI action learning method could result in learning. Throughout the five-week course, the facilitator was available by phone for questions regarding the process, problem selection, or Blackboard related issues. There was a flurry of calls at the beginning having to do with login and passwords; aside from that there was very little phone contact.

4.7 The Research Domain

Each individual brought what he or she perceived to be a difficult, urgent problem to the table. All participants worked in federal agencies and participated as volunteers for this research while they continued to perform their full-time jobs within the government. The participants knew the course

timetable and made a commitment to complete the course within the allotted five weeks as well as participate in the end-of-course interviews.

4.8 Data Sources

The Leadership Development Program (LDP) offered through Management University is a competency-based executive training program. Participants are required to be managers under consideration by their organizations for executive responsibilities. Their superiors acknowledge their potential to become executives and must nominate them to participate in the LDP. The goal of the LDP is to build on the competencies needed to become successful leaders and possibly executives in the federal agency. The LDP participants' organizations provide the necessary funding and release time to complete the yearlong program. All participants in the LDP complete a competency inventory, and a review by selected peers, subordinates, and superiors to gain feedback on the essential behaviors of a successful leader in preparation for the design of their Management Development Plan (MDP) that they had to have as a result of their enrollment in the program.

The LDP alumni had the prerequisite skills to access and participate in an online course because they had used a Web-based discussion room in the LDP program. However, most had not taken any online instruction. For many of the volunteers in this research, their primary exposure to Web-based instruction occurred when using a learning management system, Blackboard, for project work and communication during the Leadership Development Program.

4.9 Data Collection

In the evaluation of course effectiveness, the specific data collection approach was to: (a) Gather and evaluate reflections by the participants using the data in email records, online threaded discussions, and the end-of-course interviews; (b) Examine the logs (journals) for learnings; (c) Examine the commitments to action; (d) Collect feedback from the learners on the outcomes of their actions taken during the course; and (e) Follow up by email two and six months after course completion to elicit data regarding the impact of their commitments to action and actions, either on themselves or the organization.

4.10   Interview Protocol

Upon completion of the management-level, Action E-Learning Course, each participant was interviewed. For qualitative research, Stake (1995, p. 25) refers to the questions within this protocol as "topical information questions." Participants were encouraged to provide anecdotal information in support of their responses to the interview questions. All of the twelve interviews occurred at the participant's convenience, within two weeks of the course termination and were initiated by phone. All telephone interview responses were transcribed and resubmitted to the interviewee for confirmation, correction, or additional comments. If corrective feedback was not received from participants within three weeks after their receipt of the transcribed interviews, the interviews were finalized and coded.

The set participants had access to all of the threaded discussions. They reviewed their own bios and write-ups of the problems. They provided their own words regarding actions taken and follow-up activities. Additionally, a professor of qualitative research methods reviewed the research methodology. Each of these procedures minimizes threats to trustworthiness.

4.11   Data Analysis

Atlas TI was used for data analysis; it is a qualitative analysis software tool that is designed for textual coding and analysis. All of the documents, threaded discussions, personal emails (to the facilitator and submitted outside of the public forum of Blackboard), participant journals, meeting notes, and transcribed interviews were converted to text files in order to select, code, annotate, and compare data segments.

When coding the segments and sentence fragments within each of the documents, some of the codes emerged (open-coding) from the documents' contents; others were predetermined by the research questions and constructs of the study. The codes captured the variety and range of "input" that came directly from the participants. The content and context of the sentences within the text drove the process of code assignment. A peer reviewed the raw data and the assigned codes to examine their validity.

The theoretical basis for the course modifications emerges from the constructivist school of learning where meaning and knowledge are socially constructed (Duffy & Jonassen, 1992; Jonassen, Peck, & Wilson, 1999; Savery & Duffy, 1996; Weasenforth, Biesenbach-Lucas, & Meloni, 2002). The modifications that occurred to the course were very specific and involved the use of action learning as the delivery method. Evidence of the impact of this innovation was viewable from the pattern of student persistence in the learning effort and measurable from the standpoint of the

effectiveness of the courseware to achieve its stated purpose and participant goal(s), the account of participant learnings and their reported behavior changes.

Being both researcher and facilitator permitted the viewing of the postings to the threaded discussion as well as all files to which a facilitator normally has access. Online set facilitation is not for the faint of heart. Neither is it a role to be taken lightly. In the Action E-Learning process, the facilitator must: (a) Be vigilant of the online dialogue to intervene when the process gets off track; (b) Enable and enforce the reflective inquiry process; (c) Ask questions; and (d) Inform participants of any relevant exchanges or events involving the facilitator and participants that occur outside of the threaded discussion.

Design documents related to the course before and after its modification were relevant to this effort. Other documents included, but were not be limited to the course syllabus, all participant assignments, organizational memos, emails, policy changes, printouts of threaded discussion, etc., that bore relevance to the course content or process. The online threaded discussions, documents, and emails specific to this course, and generated both by the facilitator and the students were saved and subjected to rigorous analysis, as were the transcribed interviews. In total thirty-four textual files were analyzed.

5. FINDINGS

Table 1 summarizes the participants' commitments to action and actions taken as reported in the follow-up interviews and later in email updates.

5.1 Support for Propositions

Were the propositions for this research supported? The two propositions were:

- Proposition 1: The action learning component will prompt each learner to take constructive action on at least one troubling, business/workplace problem related to the course content.
- Proposition 2: The learner will take action and report the results of the action as a learning opportunity for the other participants in the group.

As can be seen in Table 1, a majority of the participants who completed the course took action on their problems during or after the course. It appears that the propositions were supported because a majority of the learners who completed the course did take action and reported the results of the action.

Another way to examine the propositions is through evaluating the effectiveness of the course.

Table 1. Action E-learning Participant Problems and Actions

Action E-Learning Participant Problems and Actions					
Partici-pant	**Problem Type**	**Level of Risk**	**Re-frame?**	**Commitment To Action**	**Action Taken During and After the Course (Designated "Later")**
Male #1	Team building	Low	No	Dropped	Dropped-None
Male #2	Merging organizations	High	Yes	Consensus and collaboration	Visiting other department heads; conducting an off-site strategic planning session, later
Female #1	Association member participation	Low	Yes	Call members about member benefits from participation	None
Male #3	Computer updates, will be outdated before complete	High	Yes	Alternate channels to propose suggestions	Pursued alternate channels, later
Female #2	Unresponsive superior causing disruption/ Classes	High	Yes	Pursue an early intervention program with superior	Began early intervention, later
Female #3	Pursue Ph.D.	Low	Yes	Give up; later, decided to pursue CPA	Researched CPA programs, later
Male #4	Retirement or not	Low	No	Dropped	Dropped--Prepared for retirement
Male #5	Brand recognition	Low	Yes	Logo, standardized report cover, survey	Discussed with staff
Male #6	Homeland security emergency efforts	High	Yes	Be prepared icon; article to inform; use a general agency-wide communication	Met with Web Master
Female #4	Team building/ management development	High	Yes	Include team members, meeting with facilitator for dispute resolution center	Individual meetings; included team members
Male #7	Career derailment	High	Yes	Wait and see	Applied for the job, later
Male #8	Career derailment	High	No	Talk with superior	Asked to stay in position; Remained

5.2   Kirkpatrick's Four Levels of Evaluation

The impact of the Action E-Learning approach and its effectiveness as an online method were evaluated using Kirkpatrick's (1994, 1996) Four Levels of Evaluation. A complaint of Kirkpatrick's is that organizations often stop at the first level, reaction, and never get beyond that. This research examined all four levels.

5.2.1   Level One Evaluation: Reaction

Kirkpatrick's Level One evaluates reaction. The majority of the learners reacted positively to this course. One learner stated in response to the question of how he felt about action learning being offered online, "I don't know if this [the action learning process] could be done any other way." The two who initially preferred the face-to-face training environment stated their preference for the face-to-face venue at the beginning and maintained it to the end. However, one of those two said that she could see some application for AEL in the regional offices of her organization. The other saw the value of Action E-Learning regarding its application with virtual teams. This was evidence that she began to soften toward the online approach regardless of her personal preference.

The Level One responses to the Action E-Learning Events were not all positive. Negative reactions could be grouped into two areas of concern: (a) the open-group approach (where each individual presents a problem); and (b) formation of a sense of community. With regard to the former, four of the participants had less favorable reactions to the open-group approach. One participant, for instance, imputed his own confusion on all of the participants when he said, "We felt really confused if it was a single issue or multiple issues, if we were supposed to vote on it or what; there was no leadership within the group itself to make that determination; it was very awkward getting started."

Although no one else indicated a similar confusion, it is worthy of note. Certainly the single-issue approach would be more straightforward and more easily handled online. This individual was never able to discern if we were working on one problem or multiple problems. He found the open-group process very confusing online. In the second week, that same individual dropped the course.

The facilitator assumed that learning communities would form through the process of discussing the individual problems that were presented. It would seem that learning communities should develop from social learning situations. However, one can query, "Can learning communities develop when people cannot interact socially in the same room, face to face?" This

question addresses the dynamics of distance learning in general and WBI in particular. Given the literature on WBI and learning communities, the assumption was that communities would form.

In the final analysis, the assumption that learning communities would emerge was incorrect. All of the participants indicated that they did not develop any on-going relationships of any type from the course. Any relationships that existed were residual from the Leadership Development Program. This is a surprising finding for the facilitator, who was convinced that the action learning process itself would bond the individuals and build a sense of community. That did not happen.

5.2.2   Level Two Evaluation: Learning

Kirkpatrick's Level Two evaluates learning. In the threaded discussion online, all of the participants learned and used the reflective inquiry method. None of the participants were familiar with the questioning and reflection approach prior to the AEL Course. In order to use reflective inquiry, they had to learn the AEL Cycle.

The act of reframing is evidence of learning. When the originator looks at the context differently, he or she may find that the problem becomes a different problem. Reframing occurs when the problem presenter changes the crux of the problem. Each time the problem was reframed in the context of this course at the beginning of each session, it indicated that the participant had changed his or her perception of the problem. Nine of the twelve participants reframed their problem at least once. Changed perceptions also indicate learning. Consequently, reframing is an indicator that learning has taken place.

By their own testimonies, all participants who completed the course said they learned something from the course, either about action learning or about their problem or both. The first and second levels of evaluation determined course effectiveness. The value to the organization appears at Kirkpatrick's Third and Fourth Levels of Evaluation.

5.2.3   Level Three Evaluation: Behavior

Kirkpatrick's (1994, p. 22) Level Three evaluates changes in behavior where behavior is defined as follows: "…the extent to which change in behavior has occurred because the participant attended the training program." The prerequisite condition to the problem selection for the course was that the participants each identify and present what he or she perceived as a real problem in their workplace. Most of the participants' business problems required some novel solutions that the majority of the participants

found during the course. According to the participants who took action, those solutions and the implementation plan emerged as a result of the course. The actions taken by the participants during or after the course *may* indicate a change in behavior, but they do not provide conclusive evidence.

5.2.4 Level Four Evaluation: Results

Kirkpatrick's (1994, p. 25) Fourth Level is defined as "the final results that occurred because the participants attended the program." This level is more difficult to evaluate (Kirkpatrick, 1994, p. 65), especially for management development issues. However, there were indications of personal and organizational results occurring due to the impact of the Action E-Learning Course.

Kirkpatrick indicates that the results should be measurable. When it is a management development or personal development issue, the measurement would be to interview those around the participant to identify reactions to the changes in behavior resulting from personal development. Tools such as feedback from subordinates, peers, and supervisors would be appropriate as a measurement of results. One participant received some benefits of the results during the course as she involved her subordinates in more of the critical decision-making processes. One of her team members commented, "Wow, that felt good to hear and be a part of the decision making."

In the above-mentioned anecdotal case, the AEL Course participant's new management behaviors and attitudes evoked a positive response from a subordinate. However, in general the researcher/facilitator neither had access to nor the authority necessary to obtain feedback and/or gather follow up information on all of the other participants. Without this important data, it is difficult to ascertain if the course rendered lasting behavioral changes.

The results and impact of the actions taken requires more passage of time to evaluate. The feedback received from the participants relative to long-term results was that they were moving forward with their plans and had no major obstacles preventing implementation. One participant recommended that future Action E-Learning offerings include a step where the participant states, alongside the problem, recommendations for measuring the effect of the actions on the organization. Then the researcher would know what to examine for impact.

If the participants had worked on a single problem (rather than the open-group approach), the results would probably be easier to measure. Action learning has a reputation as an organizational learning tool. The power of action learning to impact organizational learning is that participants are not merely producing reports or making recommendations for another person to

implement. Participants or sponsors implement solutions they have developed themselves. This ultimately has an impact on the organization.

The results for the organization are not measurable because of the open-group approach and the use of volunteers. If this research had focused on a single live problem that was presented by a sponsor, then the facilitator could exercise more control over the problem selection process. The facilitator can, in a single problem approach, ensure that the problems that are chosen result in measurable outcomes. Additionally, given the fact that in the AEL course the participants were volunteers from various agencies in the U.S. federal government, the researcher did not have access to performance and personnel records to examine long-term changes in behavior.

6. IMPLICATIONS, LIMITATIONS, AND FUTURE DIRECTIONS

A discussion of this research brings us to the topic of the virtual, asynchronous learning environment. The participants themselves touted the strengths of the application. One participant stated in the interview, "To me the advantage was the ability to get the point across without being interrupted, it gave you time to think. It also gives people a good chance to 'listen.'" The positive feedback provided by the participants about the asynchronous technology focused on its strengths. Participants were less likely to jump to conclusions in an asynchronous environment because they had time to consider a response. The asynchronicity allowed the set members to think and "listen" to what others were saying. It enabled the learners to get a point across without getting interrupted. They had the opportunity to reflect and fashion questions for other set members as well as to consider and design the answers to the questions they received.

This research has some significant and practical implications. First, it demonstrates the usefulness of the action learning approach conducted in an online instructional situation. Second, it provides insights on how to facilitate an action learning session online. Third, it demonstrates a successful online design approach that could be used for future design efforts. Fourth, this research demonstrates specific and repeatable techniques such as the AEL Cycle for the implementation of action learning online.

This study focused on the segment of e-learning courseware that can be labeled medium fidelity. Medium fidelity courseware requires a greater reliance on student/teacher contact because this type of training typically has a more direct influence on job performance. According to Nucleus Research (2002), medium fidelity courseware is acknowledged to be the least effective

as online courseware. Implementing action learning in a medium fidelity course offered online will impact the development of Web-based instruction for that segment of courseware. The results of this study and the significance of the study can influence the approach used by organizations and higher-level institutes of learning as they develop management-level programs for delivery on line. Additionally, it further demonstrates another significant application of the action learning process.

The limitations to this study are noted here. Participants in the Action E-Learning Course were all volunteers. Intuitively, participant volunteers are less involved and committed than paying participants. Two of the twelve participants in this study dropped out of the study. One stated this in his email notifying me of withdrawal from the course, "It appears from my workload at the present time, I will not be able to [complete the course]. Consequently, much to my embarrassment, I am forced to withdraw as a member of your study group." The other withdrew saying, "Both my family, and our Church, are requiring more time than I have to give." As a volunteer, this course and the research were not as critical as the participants' personal responsibilities.

The length of the course was reduced at the client's request. Thus a fourteen-week course became a five-week course. A five-week course does not provide enough time and data to draw conclusions about the participants' changed behaviors resulting from the course.

This study was conducted and analyzed by a single individual. The use of a single judge is appropriate when the goal is to create "an in-depth understanding of a whole event, but it increases the need for further research" (Gersick, 1988).

Eisenhardt (1989, p. 537), in her article on building theory from case study research, states, "Selection of an appropriate population controls extraneous variation and helps to define the limits for generalizing the findings." This Action E-Learning approach targeted a specific population, management-level leaders. Thus, we know that AEL can be used with management-level individuals who have the authority to implement the solutions they develop during the action learning process. However, it is not clear that this same Action E-Learning instructional method would work with undergraduates, front-line, or entry-level personnel.

The conclusion is that online courses involving management-level individuals may find the Action E-Learning method an effective instructional design approach. In action learning, the person who owns the problem must have the authority within their organizations to implement the solutions they develop as a result of the action learning process. Thus, the target population for this research was the management-level individual.

Finally, participants must have reliable Internet access. The online approach will only work with those who have reliable access to the Internet.

Two powerful reactions of the participants evidenced learning and offered a commentary on the Action E-Learning approach. One person said, "I don't think a face-to-face approach would work with this [action learning] course!" Another stated, "I'm not sure this [action learning] process could be done any other way" [speaking about the asynchronous aspect]. These two reactions totally contradicted the expected response by critics of this study who said that action learning could not be conducted successfully online.

In the future, a longitudinal approach to the action learning process would be appropriate. When a course is compressed into such a short time frame (five weeks instead of fourteen), there should be allowance for follow-up. Ideally, the course should take place over a six to twelve month period where the long-term effects of the action learning process could be accurately assessed.

A future enhancement to the open-group approach (where each individual brings a unique problem) would be to have the owners of the problem identify at the beginning of the course if there is any way to measure impact of their problem-solution on their organizations. The owner or sponsor of the problem should establish, at its inception, the metrics to measure the impact on the organization. Then, after the action learning event, the evaluators would know where to start in the organization to assess the impact.

7.   SUMMARY

In summary, this study demonstrates the power and effectiveness of the action learning method when applied online. Action learning can be implemented as an e-learning course delivery method. Management-level participants can learn the action learning online approach and use it to take action on urgent problems. It is an effective methodology for delivery of a management-level, virtual asynchronous course.

REFERENCES

Arbaugh, J. B., J. B. (2000). An exploratory study of the effects of gender on student learning and class participation in an internet-based MBA course. *Management Learning, 31* (4), 503-549.

Bandura, A., A. (1977). *Social Learning Theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A., A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall.

Brindle, J., J., & Levesque, L., L. (2000). Bridging the gap: Challenges and prescriptions for interactive distance education. *Journal of Management Education, 24* (4), 445-419.

Brower, H. H., H. H. (2003). On emulating classroom discussion in a distance-delivered OBHR course: Creating an on-line learning community. *Academy of Management Learning and Education, 2* (1), 22-36.

Carr, S., S. (2000). As distance education comes of age, the challenge is keeping the students, http://chronicle.com/free/v46/i23/23a00101.htm, retrieved January 30, 2002.

Cho, S. K., S. K., & Berge, Z. L., Z. L. (2002). Overcoming barriers to distance training and education. *Education at a Distance — The USDLA Journal, 16* (1), 1-15.

DeFillippi, R. J., R. J. (2001). Introduction: Project-based learning, reflective practices and learning outcomes. *Management Learning, 32* (1), 5-10.

Dewey, J., J. (1916). *Democracy and Education*. New York: The Free Press.

Dilworth, R. L., R. L. (1998a). Action learning in a nutshell. *Performance Improvement Quarterly, 11* (1), 28-43.

Dilworth, R. L., R. L. (1998b). Setting the stage, *Performance Improvement Quarterly, 11* (1), 5-8.

Dolmans, D., D., Gijselaers, W. H., W. H., Moust, J., J., & De Grave, W., W. (2002). Trends in research on the tutor in problem-based learning: Conclusions and implications for educational practice and research. *Medical Teacher, 24* (2), 173-180.

Driscoll, M., M. (1998). *Web-based Training: Using Technology to Design Adult Learning Experiences*. San Francisco: Jossey-Bass/Pfeiffer.

Driscoll, M., M. (1999). Web-based training in the workplace. *Adult Learning, 10* (4), 21-25.

Duffy, T. M., T. M., & Jonassen, D. H., D. H. (Eds.). (1992). *Constructivism and the Technology of Instruction, A Conversation* (1st ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Eisenhardt, K., K. (1989). Building theories from case study research. *Academy of Management Review, 14* (4), 532-550.

Forman, D. C., D. C. (2002). Benefits, costs, and the value of e-learning programs. In A. Rossett, A. (Ed.),*The ASTD E-Learning Handbook: Best Practices, Strategies, and Case Studies for an Emerging Field* (pp. 398-413). New York: McGraw-Hill.

Fornaciari, C. J., C. J., Forte, M., M., & Mathews, C., C. (1999). Distance education as a strategy: How can your school compete? *Journal of Management Education, 23* (6), 703-719.

Galagan, P. A., P. A. (2000). The e-learning revolution. *Training & Development, 54* (12), 24-30.

Gersick, C., C. (1988). Time and transition in work teams: Toward a new model of group development. *Academy of Management Journal, 31* (1), 9-41.

Gijselaers, W. H., W. H. (Ed.). (1995). *Educational Innovation in Economics and Business Administration*. Dordrecht, The Netherlands: Kluwer Academic Publishers.

Hall, B., B. (1997). *Web-Based Training Cookbook*. New York: John Wiley & Sons, Inc.

Hall, B., B., & LeCavalier, J., J. (November 2000). The case for Level 3, http://www.learningcircuits.org/2000/nov2000/hall.htm, retrieved May 20, 2005.

Hughes, J., J., & Attwell, G., G. (February 2003). A framework for the evaluation of e-learning, http://www.theknownet.com/ict_smes_seminars/papers/Hughes_Attwell.html, retrieved May 20, 2005.

Human, S. E., S. E., Kilbourne, L. M., L. M., Clark, T., T., Shriberg, A., A., & Cunningham, B., B. (1999). Using Web-enhanced instruction in an interpersonal skills course. *Journal of Management Education, 23* (5), 584-607.

Jonassen, D. H., D. H., Peck, K., K., & Wilson, B. G., B. G. (1999). *Learning with Technology: A Constructivist Perspective*. Upper Saddle River, NJ: Merrill, Prentice-Hall.

Kanet, J. J., J. J., & Barut, M., M. (2003). Problem-based learning for production and operations management. *Decision Sciences Journal of Innovative Education, 1* (1), 99-118.

Keller, J. M., J. M., & Kopp, T. W., T. W. (1987). Application of the ARCS model of motivational design. In C. M. Reigeluth, C. M. (Ed.), *Instructional Theories in Action: Lessons Illustrating Selected Theories and Models* (pp. 289-320). Hillsdale, NJ: Lawrence Erlbaum Associates.

Khan, B. H., B. H., Waddill, D. D., D. D., & McDonald, J. A., J. A. (2001). Case studies of Web-based training sites. In B. H. Khan, B. H. (Ed.), *Web-Based Training* (pp. 367-374). Englewood Cliffs, NJ: Educational Technology Publications.

Kirkpatrick, D., D. (1994). *Evaluating Training Programs: The Four Levels*. San Francisco: Berrett-Koehler.

Kirkpatrick, D., D. (1996). Great ideas revisited: Revisiting Kirkpatricks's four-level model. *Training and Development Journal, 50* (1), 54-58.

Knowles, M., M. (1973). *The Adult Learner: A Neglected Species*. Houston, TX: Gulf Publishing.

Knowles, M. S., M. S. (1984). *Andragogy in Action*. San Francisco: Jossey-Bass.

Knowles, M. S., M. S., Holton, E. F. I., E. F. I., & Swanson, R. A., R. A. (1998). *The Adult Learner* (5th ed.). Woburn, MA: Butterworth-Heinemann.

Marquardt, M. J., M. J. (1999). *Action Learning in Action: Transforming Problems and People for World-Class Organizational Learning* (1st ed.). Palo Alto, CA: Davies-Black Publishing.

Marquardt, M. J., M. J. (2004). *Optimizing the Power of Action Learning*. Palo Alto, CA: Davies-Black Publishing.

Marsick, V. J., V. J., & O'Neil, J. A., J. A. (1999). The many faces of action learning. *Management Learning, 30* (2), 159-176.

Marsick, V. J., V. J., Cederholm, L., L., Turner, E., E., & Pearson, T., T. (1992). Action-reflection learning. *Training & Development, 46* (8), 63-66.

Martins, L. L., L. L., & Kellermanns, F. W., F. W. (2004). A Model of business school students' acceptance of a Web-based course management system. *Academy of Management Learning and Education, 3* (1), 7-26.

Mayberry, E., E. (2005). Kirkpatrick's level 3: Improving the evaluation of e-learning, http://www.learningcircuits.org/2005/may2005/mayberry.htm, retrieved May 19, 2005.

Nadkarni, S., S. (2003). Instructional methods and mental models of students: An empirical investigation. *Academy of Management Learning and Education, 2* (4), 335-351.

National Educational Association (NEA). (2000). Quality on the line: Benchmarks for success in Internet-based distance education, http://www.nea.org/ technology/onlinecourseguide. html, retrieved May 17, 2005.

Nucleus Research. (2002). E-learning delivers consistent returns, http://www.NucleusResearch.com, retrieved October 16, 2002.

Parker, A., A. (December 1999). A study of variables that predict dropout from distance education, http://www.outreach.uiuc.edu/ijet/v1n2/parker, retrieved January 30, 2002.

Phillips, J. J., J. J., Phillips, P. P., P. P., Duresky, L. Z., L. Z., & Gaudet, C., C. (2002). Evaluating the ROI of e-learning. In A. Rossett, A. (Ed.), *The ASTD E-Learning*

Handbook: Best Practices, Strategies, and Case Studies for an Emerging Field (pp. 387-397). New York: McGraw-Hill.

Reeve, S. D., S. D. (1998). Action learning and management development: Lesson for Web-based education. Paper presented at the 9th International Conference on College Teaching and Learning.

Revans, R. W., R. W. (1980). *Action Learning: New Techniques for Management* (1st ed.). London: Anchor Press Ltd.

Revans, R. W., R. W. (1982). *The Origin and Growth of Action Learning*. London: Chartwell Bratt.

Rhodes, C., C., & Garrick, J., J. (2003). Project-based learning and the limits of corporate knowledge. *Journal of Management Education, 27* (4), 447-471.

Roberts, B., B. (1998). Training via the desktop. *HRMagazine, 43* (9), 98-104.

Rossett, A., A. (2000). Confessions of a Web dropout. *Training, 37* (8), 100.

Rotter, J. B., J. B. (1954). *Social Learning and Clinical Psychology*. Englewood Cliffs, NJ: Prentice-Hall.

Rotter, J. B., J. B., Seeman, M., M., & Liverant, S., S. (1962). Internal versus external control of reinforcements: A major variable in behavior theory. Paper presented at the Decisions Values and Groups. Proceedings of a conference held at the University of New Mexico, New Mexico.

Saba, F., F. (2000). Research in distance education: A status report. *International Review of Research in Open and Distance Learning, 1* (1), 1-9.

Sandelands, E., E. (1999). Cyber tutoring and learning: How to facilitate action learning online, http://www.mcb.co.uk/imc/news/academic/cyber-tutoring.html, retrieved January 28, 2004.

Savery, J. R., J. R., & Duffy, T. M., T. M. (1996). Problem-based learning: An instructional model and its constructivist framework. In B. G. Wilson, B. G. (Ed.), *Constructivist Learning Environments: Case Studies in Instructional Design* (pp. 135-148). Englewood Cliffs, NJ: Educational Technology Publications.

Schon, D. A., D. A. (1987). *Educating the Reflective Practitioner*. San Francisco: Jossey-Bass Publishers.

Shandler, D., D. (1996). *Reengineering the Training Function: How to Align Training with the Corporate Agenda*. Delray Beach, FL: St. Lucie Press.

Singh, H., H. (2001). Online implementation of Kirpatrick's four levels of evaluation using Web databases. In B. H. Khan, B. H. (Ed.), *Web-Based Training* (pp. 523-529). Englewood Cliffs, NJ: Educational Technology Publications.

Stake, R. E., R. E. (1995). *The Art of Case Study Research*. Thousand Oaks, CA: Sage Publications.

Weasenforth, D., D., Biesenbach-Lucas, S., S., & Meloni, C., C. (2002). Realizing constructivist objectives through collaborative technologies: Threaded discussions. *Language Learning & Technology, 6* (3), 58-86.

Yin, R. K., R. K. (Ed.). (2003). *Case Study Research Design and Methods* (3rd ed.). Vol. 5. Thousand Oaks, CA: Sage Publications.

Yoo, Y., Y., Kanawattanachai, P., P., & Citurs, A., A. (2002). Forging into the wired wilderness: A case study of a technology-mediated distributed discussion-based class. *Journal of Management Education, 26* (2), 139-163.

Zielinski, D., D. (2000). Can you keep learners online? *Training, 37* (3), 64-75.