5-2013

An Analysis of Online Training: Effectiveness, Efficiency, and Implementation Methods in a Corporate Environment.

Carter Sandlin
East Tennessee State University

AN ANALYSIS OF ONLINE TRAINING: EFFECTIVENESS, EFFICIENCY, AND IMPLEMENTATION METHODS IN A CORPORATE ENVIRONMENT

Thesis submitted in partial fulfillment of Honors

By
Carter Sandlin
The Honors College
University Honors Scholars Program
East Tennessee State University

March 28, 2013

_____

Dr. Kelly Price, Faculty Mentor

ACKNOWLEDGEMENTS

I would like to thank the University Honors Scholars Program at East Tennessee State University for providing the resources and faculty needed to create a successful thesis. In particular, I would like to thank Dr. Rebecca Pyles and Dr. Joy Wachs for their extremely helpful guidance throughout this process.

I would also like to thank my faculty mentor, Dr. Kelly Price, for her incredible guidance, continual feedback, and unparalleled availability.

In addition, I would like to thank my thesis readers, Dr. Renée Couch and Mr. John Whitmore, for their corrections, comments, and advice.

Finally, I would like to thank Eastman Chemical Company for initiating my interest regarding the role of online training in a corporate environment.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The current research will assess online training specifically as it relates to learning effectiveness in a corporate environment. Currently, research concerning the effectiveness of online learning is abundant; however, none of this recent research is compiled in one place, nor does this research specifically interpret the information to determine the applicability of online training in a corporate environment. The thesis will analyze numerous secondary sources to compile relevant statistics related to the effectiveness of online training resources. Using this research, the thesis will culminate in recommendations for the implementation of an online training process, one useful for managers that focuses on effective learning, the need for personal interaction, and cost savings.

CHAPTER 1

Introduction

Background

A variety of online training resources exist for use in K-12 classrooms, colleges and universities, and various types of businesses. Within corporations, online training resources have been created for software programs, safety procedures, mission and values orientation, and numerous other uses. The effective usage of online learning has been highly questioned during the last decade of technological advancements. Recent studies have been able to largely confirm the effectiveness of online learning. "Studies of earlier generations of distance and online learning courses have concluded that they are usually as effective as classroom-based instruction," said Marshall "Mike" Smith, a Senior Counselor to the US Secretary of Education. "The studies of more recent online instruction included in this meta-analysis found that, on average, online learning, at the post-secondary level, is not just as good as but more effective than conventional face-to-face instruction." This research mentions that the results are mostly from studies in settings such as medical training, higher education, corporate and military training, and therefore should not necessarily be applied to the K-12 population (US Department, 2009). Therefore, in terms of corporate online training, this research is appropriate. Numerous situations exist in which online training can be useful, cost-effective and even preferred. Using online learning for online university classes may be different than using it for corporate training, and although some of the same data can be used, it must be interpreted as it relates to both for-profit and not-for-profit corporations while identifying the limitations and the scope of applicability of current research.

From a cost-effectiveness perspective, a large benefit of online training is that "training costs can be traced to individual learners and costs can then be measured against results" (Kirk,

2002). The ability for detailed score and cost reporting can be extremely helpful to corporations with regard to their ability to measure the cost-effectiveness of online training versus in-person training, and enables employees to make educated organizational decisions regarding the future of their corporate training procedures. Measuring cost-effectiveness is further enhanced by the ability for an online training module to remain consistent even when repeated numerous times, particularly compared to the significant variation potential of repeated in-person training. A recognized form of corporate training evaluation is the Kirkpatrick Model. References to this model will be made during this paper, and it will play a critical role in the development of managerial recommendations. The Kirkpatrick Model consists of four steps that can be used to evaluate training programs: "1) reaction, or how well learners were satisfied with the program; (2) learning, or the principles, facts, and techniques that were learned; (3) behavior, or the changes in job behavior that resulted from the program; and (4) concrete results in terms of cost reduction and quality and quantity improvements" (Galloway, 2005, p. 21). This model will assist in the development of training recommendations. Furthermore, more recent adaptations in the Kirkpatrick model created to make it more relevant to e-learning will be considered during the thesis, such as the additional Return on Investment portion added by Jack J. Philips, Ph.D. (Hamtini, 2008). As a result, not only does online training enable the measurement of learning outcomes, it also enables the ability to directly compare these measurements with associated costs, which can show a firm whether or not this new form of training is appropriate for their specific organization.

The efficiency of online training is crucial to its significance. One huge potential benefit of online training is its capacity for significantly reducing training time. Not only does it have the potential to reduce the trainees training time, but also virtually eliminates the time an employee spends giving training (after the initial online training module is set-up). Therefore,

the potential of freeing up valuable time of a corporate trainer and cutting the trainee's learning time in half can seem enticing to many employers, because it is possible to potentially maintain effectiveness and reduce time, therefore significantly reducing costs. For example, Joyce M. Schmeeckle (2003) evaluated the "effectiveness and efficiency of training law enforcement personnel over the internet," using instructional time and cost/benefit calculations as measures of efficiencies. Schmeeckle's results were similar to those of the US Department of Education's in that online training is as effective as classroom training, yet more efficient because it was completed in "almost half the time of classroom training and at a lesser cost" (Schmeeckle, 2003, p. 205). However, Schmeeckle (2003) points out that the classroom group reported "higher motivation and positive feelings" (p. 205) than did the online group. This issue would seem to be solved with the recommendation of the US Department of Education, that blended learning (online and classroom) provides the best results; however, corporations eventually need to make an educated decision about whether or not the resultant cost savings are worth any decrease in learning satisfaction.

The chosen implementation method of online training is crucial to its success. Kirk suggests a five step implementation method for e-learning, including top management support, identifying learning styles, examining the content, determining instructional methodologies, and establishing a proposed time for development and evaluation (Kirk). Top management support is without a doubt a crucial aspect of online training; as a result, research concerning online training applicability to promote e-learning within a corporation is critical, and this thesis focuses on the benefits and limitations of online training to give corporations a legitimate source to use for proposal reasons. In addition to Kirk's five step implementation method for e-learning, Kotter's 8-Step Process for Leading Change is directly applicable to implementing e-learning within a corporate environment. Kotter's steps are as follows:

- “Establishing a Sense of Urgency
- Creating the Guiding Coalition
- Developing a Change Vision
- Communicating the Vision for Buy-in
- Empowering Broad-based Action
- Generating Short-term Wins
- Never Letting Up
- Incorporating Changes into the Culture” (Kotter, n.d.).

Kotter’s implementation system, factoring in the previously mentioned steps, will support the successful implementation of online training within an existing corporate culture.

The managerial recommendations gained from this research will be practical. The recommendations will provide straightforward information on how to maximize the effectiveness and efficiency of online training by including relevant research that shows the educational and cost benefits associated with online training. The recommendations will be backed by current, reputable research, and will be directly applicable to training within a corporate environment; however, the recommendations may also apply to areas outside corporations that have employees within the age range of the included research.

CHAPTER 2

Literature Review

Effectiveness of Online Training

A study conducted in 2009 for the US Department of Education found that, "On average, students in online learning conditions performed modestly better than those receiving face-to-face instruction" (Means, 2010, p. ix). This research, performed by SRI International for the Department of Education, included a search of research literature spanning 1996 – July 2008 and identified "more than a thousand empirical studies of online learning" (Means, 2010, p. ix). Analysts used only the studies that met their specific criteria: "(a) contrasted an online to a face-to-face condition, (b) measured student learning outcomes, (c) used a rigorous research design, and (d) provided adequate information to calculate an effect size" (Means, 2010, p. ix).

This research identified fifty independent effects that could be subjected to meta-analysis, which discovered the previously mentioned result and advantage that online learning has when compared to in-person learning. The research noted that, as a result of today's online learning applications, our current "forms of online learning are a far cry from the televised broadcasts and videoconferencing that characterized earlier generations of distance education," and that as a result, a comparison concerning the effectiveness of online versus face-to-face instruction needed to be revisited (Means, 2010, p. xi). Although the goal of this study was to provide policy makers and the like with guidance concerning ways in which to implement online learning for K-12 education, it recommends caution in generalizing to this age group because, in addition to focusing on K-12 education, it "encompassed…research literature….(in) career technology, medical and higher education, as well as corporate and military training (therefore) it yielded enough studies with older learners to justify a quantitative meta-analysis" (Means, 2010, p. xii).

The meta-analysis included fifty total study effects, with forty-three of those effects being ones drawn from research with older learners, and discovered the following important points:

- "Students in online conditions performed modestly better, on average, than those learning the same material through traditional face-to-face instruction.
- Instruction combining online and face-to-face elements had a larger advantage relative to purely face-to-face instruction than did purely online instruction.
- Effect sizes were larger for studies in which the online instruction was collaborative or instructor-directed than in those studies where online learners worked independently.
- Most of the variations in the way in which different studies implemented online learning did not affect student learning outcomes significantly.
- The effectiveness of online learning approaches appears quite broad across different content and learner types" (Means, 2010, p. xiv-xv).

Although combining face-to-face elements with online elements showed a larger advantage in this study, as noted below, both blended and online learning techniques generally lead to similar learning outcomes. The study also notes that they ran the meta-analysis while only including the 43 studies with older learners, and therefore excluding the studies with the K-12 students, with "results (that) were very similar to those for the meta-analysis including all 50 contrasts" (Means, 2010, p. xiv). The study mentions that online learning is an effective option for 1) undergraduate students, 2) graduate students, and 3) professionals, and that there are no significant differences in effectiveness that relate to the subject of instruction. The study also shows that the majority of the researched cases suggest the following:

- "Blended and purely online learning conditions implemented within a single study generally result in similar student learning outcomes.

- Elements such as video or online quizzes do not appear to influence the amount that students learn in online classes.
- Online learning can be enhanced by giving learners control of their interactions with media and prompting learner reflection.
- Providing guidance for learning for groups of students appears less successful than does using such mechanisms with individual learners" (Means, 2010, p. xvi).

Joyce M. Schmeeckle's research on online training somewhat affirms a portion of the research done for the Department of Education. Schmeeckle's second study "experimentally examined learning, instructional time, motivation, and attitude advantages of multimedia included in the Jail Management online training courses" and found that there were not any differences in participants' test or survey scores whether they received training that included "text only, audio with text, or video with the text," with only instructional time differing between these groups (Schmeeckle, 2003, p. 205). This affirms the portion of the study conducted for the Department of Education that concludes "elements such as video or online quizzes do not appear to influence the amount that students learn in online classes" (Means, 2010, p. xvi).

An adaptation of the Kirkpatrick Model can be used as a model with which one can evaluate and therefore potentially measure the effectiveness of an online training module.

Dominique Galloway (2005) authored a paper in which he questioned the relevancy of the Kirkpatrick Model, and illustrated the benefits of it as well as a suggested addition. Kirkpatrick's Model follows these steps:

- Level One: Reaction/Satisfaction
    - Often measured by questionnaire post-training, this gains details concerning the training topic, quality of training materials, presentation manner, course length, and instructor quality.
- Level Two: Learning
    - Often measured by 1) asking participants if learning expectations for training were met or 2) test learners on instructional content.
- Level Three: Behavior/Impact
    - Often measured through computer-based performance testing, this level evaluates behavior and the ways in which training "translates into employees' knowledge and aptitude" and therefore "seeks to measure the continuity between learning and practice".
    - According to Jack Philips, evaluating at this level serves the following:
        - "Determining success in accomplishing organizational goals,
        - Identifying strengths and weaknesses in the training and development process,
        - Identifying which participants were the most successful,
        - Providing an opportunity to reinforce major points to the participants" (Galloway, 2005, p. 23).
- Level Four: Results

  - Often measured by gauging the cost of training versus its effectiveness, level four provides concrete evidence that learning has occurred by validating Level Two, and provides evidence that can be directly related to "increased sales, reduced costs, increased productivity, improved quality, and lower overhead" (Galloway, 2005, p. 24).

- Return on Investment – Philips Fifth Level Addition
  - Measured by calculating the cost of training versus the benefits produced, the ROI can be used to "assess the monetary value results yield compared to the cost of training…creat(ing) a cost-benefits model in which monetary benefits are compared to cost to determine whether training costs were excessive" (Galloway, 2005, p. 24).

Galloway (2005) mentions that Aldrich maintains that performing each step is important to get a holistic perspective of the training due to the limitations of each individual level. For example, it is mentioned that only doing the Level One evaluation may lead organizations to needlessly revise programs because, although level one may have shown issues with the training, other factors influencing negative feedback may include disinterest in the topic, personal distractions, resentment of training time and the dislike of being required to participate in training. In addition, he points out that, regarding Level Two, just because an employee could apply their training in a role-playing situation fails to mean that the employee could apply the training in a real life situation (Galloway, 2005). Although Kirkpatrick's model ultimately requires the performance of each step, Bonk's research shows that "of those that evaluated online learning, 79% employed simple assessments of student reactions (Level 1), 61% measured participant change in knowledge, skill, or attitude (Level 2), 47% assessed participant job

performance improvement (Level 3), and 30% analyzed results such as the return on investment (Levels 4 and 5)" (Bonk, 2002, p. 8).

Efficiency of Online Training

Joyce M. Schmeeckle's article on "Online Training: An Evaluation of the Effectiveness and Efficiency of Training Law Enforcement Personnel over the Internet" mentions that online training "is the future of workforce training in both educational and corporate institutions." Schmeeckle (2003) performed two studies, with Study 1 focusing on research that evaluated the effectiveness of online training as it compares to classroom training (including factors such as learning and motivation/attitude), as well as efficiency of online training as it compares to classroom training (including factors such as time and cost). Although this research concerns the training of law enforcement personnel, the 2009 study published for the Department of Education found that no significant differences in online training effectiveness were found which related to the subject of instruction. Schmeeckle's experiment randomly assigned trainees to receive online or classroom training for her Study 1. The results (referencing the factors mentioned above) proved that online training is equally effective as is classroom training, but is significantly more efficient, noting that, on average, online training was completed in almost half the time as was classroom instruction. However, this research notes an important limitation of online training in that the classroom group "reported higher motivation and positive feelings concerning their instruction than did the online group".

As mentioned by Xiaoxing Han, Ph.D. in his research paper "Exploring an Effective and Efficient Online Course Management Model" (1999), the time an instructor spends to develop and present the online training should be compared to the time the instructor would spend preparing and presenting typical classroom instruction. Han notes that, without strategically planning the development and implementation of an online training module, efficiency cannot be

attained. More advanced studies, such as Schmeeckle's, point out that one must also consider the effectiveness of online training in a cost-benefit analysis to ultimately determine the efficiency of an online training program. Han points out that instructor time needs to be accounted for when comparing online training versus classroom training, whereas Jack Philips' Return on Investment addition to the Kirkpatrick Model adds cost to the equation, which would inherently include time saved when calculating the total return on investment (total training time is included in Return on Investment calculations, ultimately given as a measure of costs incurred or cost savings).

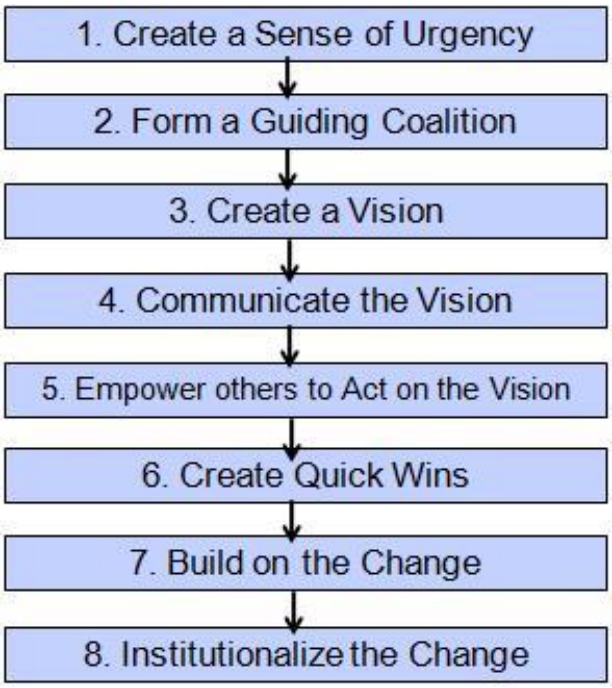
Implementation of Online Training

Although online training has the potential to be extremely beneficial to a company, certain implementation steps are helpful for the implementation to be successful. According to Kirk's Executive Summary on E-learning, the implementation of online training should follow these guidelines:

- (1) "Make sure that top management supports the initiative."
    - Kirk maintains that top management support is necessary to achieve a successful online training program. In "Online Training in an Online World", Curtis J. Bonk, Ph.D. notes that the interest level in online training varies depending on the type of business. Bonk notes that, regarding commitment in web learning by industry type, the percentage of those showing high commitment varied. Financial services and insurance showed 64 percent, education 64 percent, information technology 59 percent, consulting 59 percent, industrial/manufacturing 40 percent, government 39 percent, health services 30 percent. This research also points out that some organizations are forced to utilize online training methods due to globalization: "the financial services industry has

become increasingly characterized by high-stakes decision-making, rapid change, and a globally distributed workforce" (Ader, 2001).

- (2) "Determine the program's target audience and identify audience members' learning styles."
    - This means to tailor the online training to the specific audience, keeping in mind the difference between visual, auditory, tactile and kinesthetic learning styles (Oxford, 2003). However, M. Ehrman (1996) notes that styles of learning are not just present or absent; rather, they "generally operate on a continuum or on multiple, intersecting continua" and that, as a result, "a person might be more extraverted than introverted, or more closure-oriented than open, or equally visual and auditory but with lesser kinesthetic and tactile involvement" (Oxford, 2003, p. 3).
- (3) "Examine the training program's content and ascertain whether the program must be built from scratch."
- (4) "Determine which instructional methodologies will be used."



- (5) "Establish a proposed time frame for development, allowing adequate time for approval of instructional methods and for evaluation periods" (Kirk, 2002, p. 2).

It is important to note that implementing online training is not just a small change in a business – rather, it is a large transformational change. This change includes "(1) establishing a sense of urgency, (2) forming a powerful guiding coalition, (3) creating a vision, (4)

communicating the vision, (5) empowering others to act on the vision, (6) planning for and creating short-term wins, (7) consolidating improvements and producing still more change, (8) institutionalizing new approaches" (Kotter, 1995, p. 61). Kotter notes that the failure to perform one of these steps to the proper extent is the reason why transformation efforts fail. In Dr. Jennifer McLean's paper concerning an approach for technology integration, she mentions Kotter's findings that resistance was based on barriers at the organizational level, identified as "(1) lack of skills or knowledge, (2) organizational structures within the institution make change difficult, (3) personnel and information systems make it difficult to act, and (4) actions related to innovation are discouraged or blocked" (McLean, 2005). As a result, McLean points out that the lack of "collective vision" and "consistent support" in an institution will "likely limit the integration of educational technology" (McLean, 2005). It is important to note in this section, however, that the study for the Department of Education concluded that "most of the variations in the way in which different studies implemented online learning did not affect student (trainee) learning outcomes significantly." Out of 13 online learning practices examined, "(1) the use of a blended rather than a purely online approach and (2) instructor-directed or collaborative rather than independent, self-directed instruction were the only statistically significant influences on effectiveness" (Means, 2010, p. xv).

CHAPTER 3

Methodology

Research Design

This thesis includes the compilation of numerous online training and learning research studies. This compilation will then be analyzed specifically as it relates to online training within a corporate environment, and will be used to gather recommendations for online training in a corporation. The research will be geared to answer the following questions:

Research Questions:

- Is online training an effective learning substitute for in-person training, and if so, to what extent?
- Does online training have the potential to save a corporation money and be preferred by employees?
- How should an online training process be implemented?

Data Collection

Secondary data will be used for this thesis. These data will answer the above-mentioned research questions, ultimately influencing the recommendations for corporate training.

CHAPTER 4

Results

Effectiveness of Online Training

The study conducted by SRI International for the US Department of Education is the most recent proof of the effectiveness of online training. It is one of the first studies to realize the transformational leap in technology that has occurred even within the past decade, noting that "forms of online learning are a far cry from the televised broadcasts and videoconferencing that characterized earlier generations of distance education" (Means, 2010, p. xi), therefore ultimately implying the positive effect that the technological advances have had on the effectiveness of online training. Even when only including the 43 studies with older learners (omitting the K-12 section), "results were very similar to those for the meta-analysis including all 50 contrasts" (Means, 2010, p. xiv). "Very similar," in this case, would then mean that results are similar to the overall finding that "students in online conditions performed modestly better, on average, than those learning the same material through traditional face-to-face instruction" (Means, 2010, p. xiv). However, the research did make an important finding in that blended instruction (combination of online and in-person instruction) had a greater advantage than solely in-person instruction or solely online instruction, but also showed that both blended instruction and solely online instruction "generally result in similar student learning outcomes" (Means, 2010, p. xvi). Although the learning outcomes are similar, these conclusions further Schmeeckle's finding and suggest that trainees exposed to blended learning have a higher satisfaction with training (greater advantage), but that trainees learn the same amount whether or not the in-person aspect is present (Schmeeckle, 2003).

Furthermore, the study concludes that videos and online quizzes fail to influence the amount students learn; however, to gauge efficiency, some form of measurement must be made

to evaluate the system using the Kirkpatrick model – the trainer just has to realize that online quizzes are not proven to influence student learning. To enhance the effectiveness, the study suggests "giving learners control of their interactions with media and prompting learner reflection," a task which can be done when utilizing the newest, most innovative technologies (Means, 2010, p. xvi). As a result of this research, Level 2 of the Kirkpatrick Model – Learning – can be generally evaluated. The Department of Education study indicates that, in general, learners learn modestly better via online training than they do via traditional in-person training; as a result, there exists a basis off of which to conclude that those using online training do, in fact, learn the content, thus satisfying Level 2 of the Kirkpatrick Model. Regarding Level 3 – the Impact level of the Kirkpatrick Model, it cannot be inferred that the learners deploy the newly learned knowledge and skills on the job. However, since the study proved online training more effective than in-person training, it can be inferred that learners deploy the knowledge and skills gained from online training on the job at least as much as they deploy the knowledge and skills gained from in-person training on the job. Furthermore, since Level 3 is often measured through computer-based performance testing, this can be measured through an online quiz of some sort – utilizing the same technology a trainer would use to create the online training module. This could also be measured through personal interaction modules provided by certain training software, interactions that actually gauge the trainees' learning.

One other important note concerning Online Training Effectiveness is Schmeeckle's (2003) finding that, although contributing to varied instructional time, the following three forms of online instruction had no effect on participants' test or survey scores: (1) text, (2) audio with text, or (3) video with text. This research is also confirmed by the Department of Education study that only (1) "the use of a blended rather than a purely online approach and (2) instructor-direct or collaborative rather than independent, self-directed instruction were the only

statistically significant influences on effectiveness". This shows that, although some sources say online training must cater to different learning types, including videos or audio is not absolutely necessary as it does not have a proven effect on learning outcomes. However, the fact still remains that the newer Department of Education study proves that the most effective online training gives learners "control of their interactions with media" and "prompt(s) learner reflection" (Means, 2010, p. xvi). Since the Department of Education study is newer than the study conducted by Schmeeckle, it can be inferred that the slight differences in results could possibly be due to the advances in technology and our current ability to have real-time personal interactions within a web-based training module. Regarding the measurement of the effectiveness of online training, Aldrich maintains that performing each step of the Kirkpatrick model is important to get a holistic perspective of training; therefore, this implies that corporations should refrain from only sending out a simple satisfaction survey after the implementation of online training. Rather, corporations should begin with this survey, and follow the remaining steps of the Kirkpatrick model, with Philips' Return on Investment addition to get accurate and holistic results.

Efficiency of Online Training

Online training, when designed and implemented correctly, has the potential to be just as efficient, if not more efficient, than in-person training. Xiaoxing Han, Ph.D. concluded that, without strategically planning and calculating the development and implementation of online training, efficiency cannot be attained. Han describes the calculations that should take place even prior to implementing the online training, primarily the calculations involving the number of hours the instructor will have to spend for online training (including preparation and presentation) compared to the number of hours the instructor would typically spend for an in-person training (including preparation and presentation) (Han, 1999). Schmeeckle's finding that,

on average, online training was completed in almost half the time as was classroom instruction is a significant finding in this paper. As a result, not only has this study proven that online training is more effective than in-person training; it has also proven that, in the study performed by Joyce Schmeeckle, Ph.D., online training has the legitimate potential to reduce in-person training by fifty percent if designed and implemented properly. However, Schmeeckle points out that the effectiveness of online training in a cost-benefit analysis must be considered to determine the efficiency of an online training program. For example, the investment in online training for a company with five users may not be as beneficial and may not have as significant of a return on investment as the investment in online training would be for a company with 5,000 users.

In contrast, Schmeeckle's (2003) discovery that the classroom group "reported higher motivation and positive feelings concerning their instruction than did the online group" (p. 205) shows that the level of satisfaction (Level 1 of the Kirkpatrick model) decreased with the implementation of online learning. While this is an important note, the Department of Education's newer study fails to mention any decrease in satisfaction by online learners, and even offers ways to enhance the online training by giving learners control of their interactions – something technology would not commonly allow at the time Schmeeckle authored her article. Furthermore, since the Department of Education's results show blended learning (combination of online and in-person) is best, the continued use of face-to-face instructional elements may help to maintain the employee satisfaction lost in Schmeeckle's study.

Implementation of Online Training

Kirk's suggestion to make sure that top management supports the online training initiative directly impacts virtually all of Kotter's 8 steps. Support of top management can drastically help further Kotter's 8 Steps: "(1) establish a sense of urgency, (2) form a powerful guiding coalition, (3) create a vision (4) communicate the vision, (5) empower others to act on

the vision, (6) planning for and creating short-term wins, (7) producing more change and (8) institutionalizing new approaches" (Kotter, n.d.). Ultimately, without top management support, the online training initiative could prove significantly more difficult to implement because it would be more difficult to navigate Kotter's 8 Steps.

Although Kotter's 8 Steps for Leading Change are relatively generic, they all directly apply to the implementation of online training, ultimately culminating in the institutionalizing of the new approach of online training and integrating it into the corporate culture. Top management support will also reduce the resistance based on barriers identified by Kotter as a result of the ability to better navigate 1) organizational structures within an institution that make change difficult, and 2) organizational cultures in which actions related to innovation are discouraged or blocked (McLean, 2005). It is important to again point out that, when it comes to the actual implementation of the individual training modules and to the decision regarding the type of training model to implement, "(1) the use of a blended rather than a purely online approach and (2) instructor-directed or collaborative rather than independent, self-directed instruction were the only statistically significant influences on effectiveness" (Means, 2010, p. xv). Ultimately, a successful implementation is needed to evaluate Kotter's four levels, and Philips' ROI addendum can only be fully answered once an experiment is done within a corporation and total costs and benefits are made public and published.

CHAPTER 5

Limitations

All of the studies utilized in this paper were directly interpreted for the use of corporations deciding on the possibility of implementing online training. As a result, all of the research utilized in this paper specifically concerned adults, whether that is in the education field, financial sector, medical field or the industrial sector. The research is valid as it relates to an adult population within a professional setting, and corporations fall under that setting. One major limitation is the lack of studies that contrast learning outcomes for online and in-person instruction while including information about implementation, which hindered attempts to identify specific online training practices that affect learning outcomes (Means, 2010). This topic needs to be researched further; namely, to reduce these limitations and to more specifically tie this research to a corporation, an online training implementation experiment should be done within a specific corporation (and made public) to quantitatively determine the usefulness of online training within a corporate environment.

Furthermore, Kotter's model can be limiting in the sense that, to be valid, every step must be performed. For example, it is mentioned that only performing the level one evaluation may lead organizations to needlessly revise programs because, although level one may have shown issues with the training, other factors could be influencing the negative feedback such as disinterest in the topic, personal distractions, resentment of training time and the dislike of being required to participate in training. In addition, Aldrich points out that, regarding Level Two, just because an employee could apply their training in a role-playing situation fails to indicate that the employee could apply the training in a real life situation (Galloway, 2005).

CHAPTER 6

Conclusions

- Is online training an effective learning substitute for in-person training, and if so, to what extent?
    - Online training has the proven potential to be more effective than in-person training if implemented and administered correctly. Newer technology has enhanced the benefits of online training, which therefore implies that the utilization of the most modern software has the potential to maximize the effectiveness of online training.
- Does online training have the potential to save a corporation money and be preferred by employees?
    - Online training has the proven potential to significantly reduce total training time while maintaining learning effectiveness, and is best when blended with in-person training elements to achieve maximum effectiveness and employee satisfaction.
- How should an online training process be implemented?
    - The decision to implement online training should be evaluated based on (1) the size of the company and the number of people that will be impacted, (2) a cost-benefit analysis that takes into account potential costs compared to learning outcomes and predicted employee satisfaction, and (3) the ability to successfully complete Kotter's 8 Steps for Leading Change. The implementation process should adhere to Kotter's 8 Steps for Leading Change, ultimately allowing for the integration of online training into the existing corporate culture.

Bibliography

Ader, J. (2001, July). Between luxury and necessity: Financial services firms live on the cutting-edge of video technology. E-learning, 2(7), 37-38, & 40-41.

Bonk, C. J. (2002). Online training in an online world. Bloomington, IN: CourseShare.com.

Ehrman, M., 1996: Second Language Learning Difficulties: Looking Beneath the Surface. Thousand Oaks, CA: Sage.

Galloway, D. L. (2005). Evaluating distance delivery and e-learning. *Performance Improvement*, *44*(4), 21-27.

Han, X. (1999). Exploring an effective and efficient online course management model. Retrieved from http://www.uwsa.edu/ttt/han.htm

Kirk, James J. (2002). E-Learning: An Executive Summary. U. S. South Carolina. ERIC Document Reproduction Service No ED461762.

Kotter, J. (n.d.). *Kotter international*. Retrieved from http://www.kotterinternational.com/our-principles/changesteps/changesteps

Kotter, J. P. (1995). Leading change: Why transformation efforts fail. *Harvard Business Review*, *73*(2), 59-67.

McLean, J. (2005). Addressing Faculty Concerns About Distance Learning. *Online Journal of Distance Learning Administration*, *8*(4). Retrieved from http://www.westga.edu/~distance/ojdla/winter84/mclean84.htm

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. U.S. Department of Education, Office of Planning, Evaluation, and Policy Development. (2010). *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies*

Oxford, R. L. (2003). Language Learning Styles and Strategies: An Overview. *Language learning strategies around the world: cross-cultural perspectives*, 1-25. Honolulu: Second Language Teaching & Curriculum Center, University of Hawai'i at Mānoa.

Schmeeckle, J. (2003). Online Training: An Evaluation of the Effectiveness and Efficiency of Training Law Enforcement Personnel over the Internet. *Journal of Science Education and Technology*, *12*(3), 205-260. Retrieved from http://link.springer.com/article/10.1023%2FA%3A1025028806189?LI=true

Swan, K. (2003). *Learning effectiveness online: What the research tells us*. (Master's thesis, Kent State University). Retrieved from http://*cguevara.commons.gc.cuny.edu*

U.S. Department of Education study finds that good teaching can be enhanced with new technology. (2009, June 26). Retrieved from http://www2.ed.gov/news/pressreleases/2009/06/06262009.html