

# Departure, Abandonment, and Dropout of E-learning: Dilemma and Solutions

Final Report

## **Student Investigators**

Carey O'Connor, Graduate Assistant

Erin Sceiford, Graduate Assistant

MS. Ed students in Adult Education and Human Resource Development

## **Faculty Investigators**

Greg Wang, PhD, Assistant Professor

Diane Foucar-Szocki, EdD, Professor

Oris Griffin, EdD, Associate Professor

James Madison University

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## Executive Summary

Rapid technological advancement has created a strong impetus and tremendous opportunities for human resource development (HRD) throughout all domains of organizations. E-learning has witnessed an exponential growth in the United States in recent years (Clark, 1999; Rosenberg, 1999). It is anticipated as the “second wave” of e-commerce (Werner, 2001). In addition to benefiting individual learners who can acquire knowledge and skills and access vast job-related informational resources, e-learning also provides a new platform for organizations and the workforce to access online HRD interventions anytime, anywhere.

However, according to a recent report, 70 percent of corporate learners do not complete scheduled online learning programs (Meister, 2002). Frankola (2001) also claimed a 20 to 50 percent online learning dropout rate. Unfortunately, given the anecdotally-claimed wide range of non-completion rates for e-learning in the popular press and trade journals, there have been few credible and systematic studies investigating actual non-completion rates and factors that affect these dropout rates. This research, partially sponsored by the Masie Center, explores the answers to the following key questions.

- Is the observed abandonment of e-learning an inevitable by-product of e-learning?
- What are the major reasons and factors that cause participants’ non-completion of e-learning activities?
- What are appropriate strategies and solutions to promote effective learning?

### *Method*

As in any learning environment, e-learning must actively involve both individual learners and the sponsoring organizations as key learning stakeholders in order to be effective. Unlike previous studies addressing only one of these groups of stakeholders or the other, this study examines both e-learners and e-learning managers as the research subjects. The purpose is to capture a complete picture of e-learning dropout in order to address the research questions raised above, and to gain a better understanding of the e-learning departure and abandonment issue from these multiple data sources.

Two separate but closely related research processes were implemented. The first was to interview a sample group of e-learning managers in various organizations and industries and obtain qualitative data on their e-learning management experiences and challenges that they faced. The second process used a web-based survey instrument and collected quantitative data from e-learners' individual learning experiences. The study obtained 375 valid responses from the U.S. for the quantitative approach, and 13 e-learning manager interviews for the qualitative approach.

### *Findings*

The following findings are based on the combined research results of both of these data collection processes.

- The drop out rate for e-learning is approximately 26 percent, as reported by the 375 surveyed respondents. Although this percentage appears to be much

- greater than the drop out rate for classroom learning (3 percent) as reported by the same group of respondents, it is much lower than previously claimed-learning drop out rates that ranged from 35 percent to 85 percent.
- During the last 3 years, the surveyed respondents reported that, on average, they started 5.3 courses and completed 5.2 courses for traditional classroom learning. At the same time, they started 5.5 courses and completed 4 courses for e-learning programs. These findings indicate that e-learning, at its current state, has not replaced traditional classroom learning to the degree that some industry leaders had wished to see a few years ago.
  - Factors contributing to e-learning completion, as reported by the survey respondents, include:
    - Personal motivation (73 percent)
    - Interesting learning interactions (40 percent)
    - Mandatory company completion policies (28.5 percent)
    - Online instructors/facilitators' follow-up (16 percent)
    - It appears that frequent follow-up from supervisors and e-learning administrators are not important factors contributing to e-learning completion. The reported rate for supervisor followup is only 3.2 percent, and 2.4 percent for e-learning administrators.
  - Factors influencing drop-out rate including the following:
    - Lack of motivation (36 percent)
    - Instructional design-related factors and learning style mismatch (36 percent)

- Time conflicts with work and family commitment (33.1 percent)
- Learning what one needed to know and being able to do the job before the end of the course (25 percent)
- Organizational support
- Technical factors, such as Internet connection problems (4.5 percent) and lack of access to a computer (1.1 percent) appear to have minimal affect on e-learning dropout.
- 66.6 percent of respondents reported that they spent between 30 minutes to 2 hours per week on e-learning coursework. The average number of hours spent per week on e-learning was 3.7 hours.
- 80 percent of respondents described themselves as highly comfortable or comfortable with the Internet and computer technology. 13.6 percent of participants indicated that they uncomfortable or highly uncomfortable with the technologies.
- The majority of the participants (62.4 percent) reported they took e-learning at work, while 30.4 percent take it at home.
- Most people (68 percent) in the survey claimed that their work load stayed the same during their e-learning courses. However, 27.7 percent suggested that their workload increased during the learning process. Only 4.3 percent respondents stated their workload actually decreased while they were engaged in e-learning.
- The majority of respondents (87.7 percent) have access to high-speed Internet resources via company Intranet or cable/DSL modem.

- Correlation analysis suggests that respondents with Intranet access are slightly more likely to complete an e-learning course ( $r = 0.11$ ,  $p = 0.031$ ).
- Females are more likely to complete an e-learning course than their male counterparts ( $r = 0.13$ ,  $p = 0.04$ ).

Results of the qualitative process from e-learning managers confirmed the above findings.

### *Recommended Strategies*

The findings lead to the following recommended strategies:

- The actual dropout rate measure from the study is not as high as previously perceived, which may suggest that concerns about e-learning should move away from the drop out rate and focus instead on the actual learning results, as determined through appropriate evaluation and measurement mechanisms.
- Organizations should explore ways to motivate e-learners. These strategies may include clarifying the purpose and importance of e-learning, establishing policies or procedures to follow up with employee learning, requiring online instructors/facilitators to produce constant follow up and feedback to e-learners, and other support from the top management.
- Organizations should provide sufficient time for employees to learn, since most e-learning sessions are taking place in work settings in which learning can be easily interrupted by daily tasks or workplace interactions. To accommodate “learning-at-work,” organizations may introduce policies to

ensure learners have uninterrupted time to learn. Alternatively, organizations may consider converting longer e-learning modules into an informal learning format, such as electronic performance support systems (or EPSSs). This can ensure learning the right content at the right time with minimum work interruptions.

- Poor instructional design increases the likelihood of learners dropping out. Our recommendation for managers and e-learning stakeholders to improve the quality of their e-learning courses is to conduct an initial front-end needs analysis of employees' learning gaps so that right learning objectives and content can be created. Interaction, curiosity-driven content, user-friendly graphics and interfaces, familiar examples and cases, and application exercises are all design elements that should be considered, where appropriate, in order to create engaging online courses.

The results of this study must be interpreted with caution because some industries, such as financial/insurance/real estate, were over-represented for both data collection processes. Nonetheless, the study does provide important information to better understand participants' e-learning behaviors.

This study is an attempt to better understand e-learning abandonment and its role in employee training and performance improvement. Further studies need to be conducted to continue this endeavor and support the technology-based learning platform.

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## Departure, Abandonment, and Dropout of E-learning: Dilemma and Solutions

### **Part 1. Introduction To The Research**

#### **The Purpose**

Rapid technological advancement has created a strong impetus and tremendous opportunities for human resource development (HRD) throughout all domains of organizations. E-learning, as rooted in computer media and Internet technologies, has witnessed an exponential growth in the U.S. in recent years (Clark, 1999; Rosenberg, 1999). It is anticipated as the “second wave” of e-commerce (Werner, 2001). In addition to benefiting individual learners who can acquire knowledge and skills, and access vast job related information resources, e-learning also provides a new platform for organizations and the workforce to access online deployed HRD interventions anytime, anywhere.

The success of e-learning in the United States has been reflected in a number of recent reports, as reviewed and concluded by Russell (1999), there are no significant differences between distance learning and traditional classroom learning. In fact, many organizations in the U.S. have taken e-learning as a cost effective substitute for traditional classroom learning. However, these studies were drawn from those learners who completed the entire learning modules as designed and required. What were not included are those who might have started a particular learning program but discontinued without finishing it. According to a recent report, 70 percent of corporate learners do not complete scheduled online learning programs (Meister, 2002). Frankola

(2001) also claimed a 20 to 50 percent of e-learning dropout rate, stating that it is an “embarrassing secret” of e-learning. Studies conducted in the higher education settings found the similar dilemma: 42 percent of students do not complete distance learning courses (Allen, 1999; McLaughlin, Brozovsky, McLaughlin, 1998; Murtaugh, P., Burns, L. and Schuster, J. 1999). Unfortunately, given the anecdotally claimed wide range of non-completion rates of e-learning in popular press and trade journals, there have been few credible and systematic studies, particularly in the corporate learning communities, to investigate the actually non-completion rate, not to mention probing possible factors contributing to the high dropout rate. Essentially, few studies in learning and HRD literature are devoted to investigating the factors determining learners’ completion of an online program and explore potential ways to prevent learners from dropping out.

This report presents research conducted by the Adult Education and Human Resource Development Program at James Madison University. The research is partially funded through a competitive research grant by the Masie Center, and the purpose is to explore the following questions.

- Is the observed abandonment of e-learning an inevitable by-product of e-learning?
- What are the major factors that cause participants’ non-completion of e-learning activities?
- What are appropriate strategies and solutions to ensure effective learning?

## **Research Design and Methodology**

As in any learning environment, for e-learning program to be successful, it must actively involve both individual learners and the sponsoring organizations as key learning stakeholders. Unlike previous studies addressing only one or the other, this study takes the both as the research subjects. The purpose is to capture a complete picture to address the research questions raised above and have a better understanding of the e-learning departure and abandonment issue.

As such, two separate but closely related research processes were implemented. The first was to interview a sample group of e-learning managers in various organizations and industries and obtain qualitative data on their e-learning management experiences and problems or challenges faced. For the second process, we designed and deployed a web-based survey instrument and collected quantitative data from e-learners' individual learning experiences. The two research processes were implemented simultaneously and the data were analyzed separately. We then compared and analyzed the findings from both quantitative and qualitative approaches, and identified data patterns and consistencies, derived conclusions, and formulated recommendations.

## **The Structure of the Report**

Given the design and the methods of the research, this report is divided into four parts. Part 1 discusses the general background of the research and overall research design. Part 2 presents the findings from the quantitative study with the target

population of individual e-learners. Part 3 describes the findings from the qualitative approach, which represents the results at e-learning management levels in organizations. And Part 4 compares and synthesizes the findings from the two different approaches and presents our analysis and recommendations.

## **Part 2. Understanding E-learners' Behavior: Findings from the Quantitative Approach**

As a relatively independent research process, the quantitative approach applied a web-based survey as the instrument to collect data. This section presents the data collection process and the findings from the quantitative method.

### **Data Collection**

The quantitative approach used a web-based survey instrument for the data collection. A questionnaire was designed based on extensive research of existing literature. It contains the following categories of questions: individuals' learning behaviors, number of e-learning courses started and completed, factors affecting individuals' completion and/or non-completion, and demographics (see Appendix A for the complete questionnaire). The questionnaire was deployed on the Masie Center website from May to August 2003. Soliciting e-mails were sent out to major online learning communities to call for participation.

About 400 responses were received from e-learners in the United States. However, responses that fell into one or more of the following criteria were considered invalid for the purposes of this study and thus excluded from the analysis: 1) responses that indicated that the participant had completed more traditional or e-learning courses than they had started, and 2) responses that indicated the participant had not started an e-learning course within the last three years. This treatment resulted in a total of 375 valid responses. The data were analyzed using descriptive statistics and SPSS software.

## Findings

### Dropout Rate: Classroom vs. E-learning:

Because we were interested in measuring differences in dropout rates between traditional classroom learning and e-learning, we asked respondents to report the courses they started and completed during the last 3 years for both classroom and e-learning programs. Overall, our respondents started 1,965 traditional courses in the last three years and completed 1,910 of those courses for a completion rate of 97.2 percent. For e-learning courses, respondents started 2,061 courses, and completed 1,518 of those courses, resulting a completion rate of 73.7 percent. The average traditional course *started* was 5.3, while the average traditional courses *completed* was 5.2 courses. For e-learning, the mean courses *started* was 5.5, while the mean courses *completed* was 4. The dropout rates for traditional courses and e-learning courses are 2.8 percent and 26.3 percent, respectively. Table 1 summarizes the findings on completion rates for both learning platforms.

Table 1. Completion Rate: Classroom vs. E-learning

	<b>E-learning</b>	<b>Traditional Classroom</b>
Started	1,965	2,061
Completed	1,910	1,518
Completion Rate (Dropout Rate)	97.2 (2.8)	73.7 (26.3)

To confirm the actual reported completion rate for e-learning, we also asked the respondents to estimate the e-learning completion rate in their respective organizations. About thirty percent (29.3 percent) of the respondents reported their organization's completion rate at 50 percent or higher, while another third of the respondents (35.2 percent) indicated that they were unsure about their organizations' e-learning completions rates.

The fact that 19.2 percent of respondents indicated that they started between 10 and 40 traditional courses in the last three years and 18.1 percent of respondents indicated that they have started between 10 and 40 e-learning courses in the last three years suggests that e-learning has not replaced traditional classroom learning: both learning platforms are available and in use.

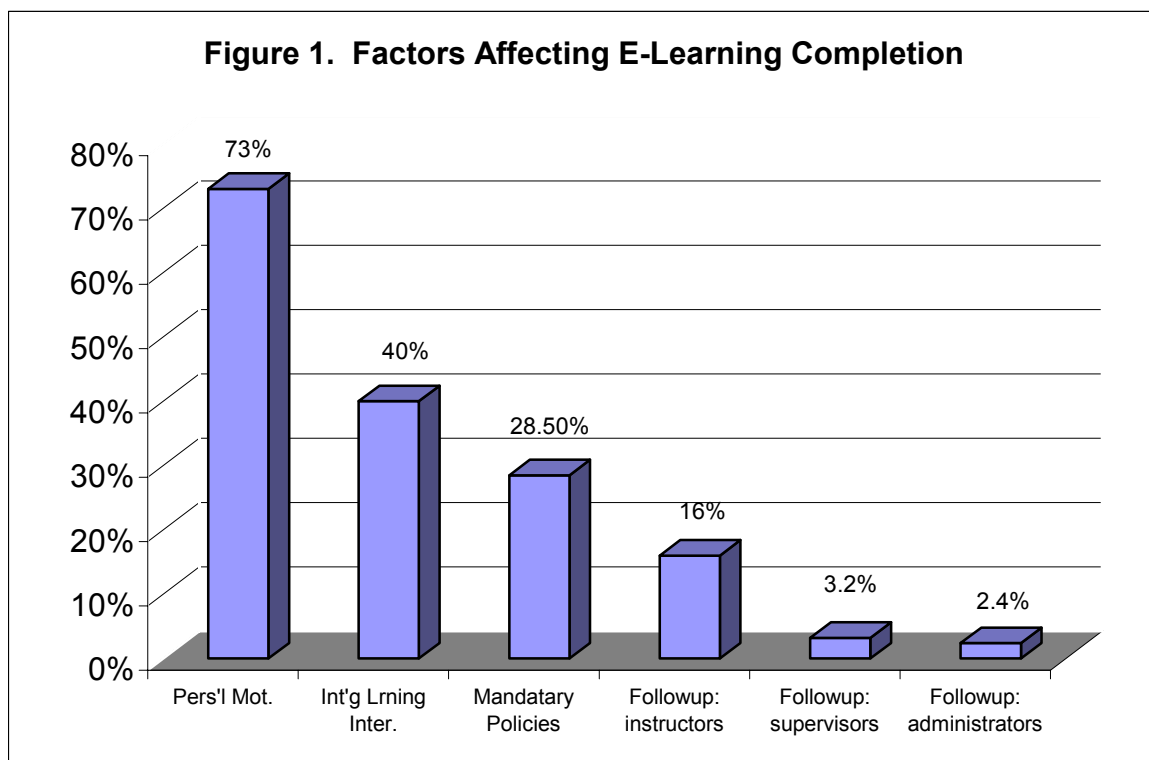
## **Contributing Factors for Completion and Dropout**

To better understand e-learners' perceptions and learning behavior, factors contributing to e-learning completion and e-learning dropout were examined separately. We asked two separate questions regarding major factors that affected their e-learning completion and dropout.

### *Factors impacting completion*

The single most frequently reported factor that affects completion of e-learning courses was personal motivation (73 percent). Interesting learning interactions (40 percent) and mandatory company completion policies (28.5 percent) were the 2<sup>nd</sup> and 3<sup>rd</sup> most reported factors that have an impact e-learning completion. Online

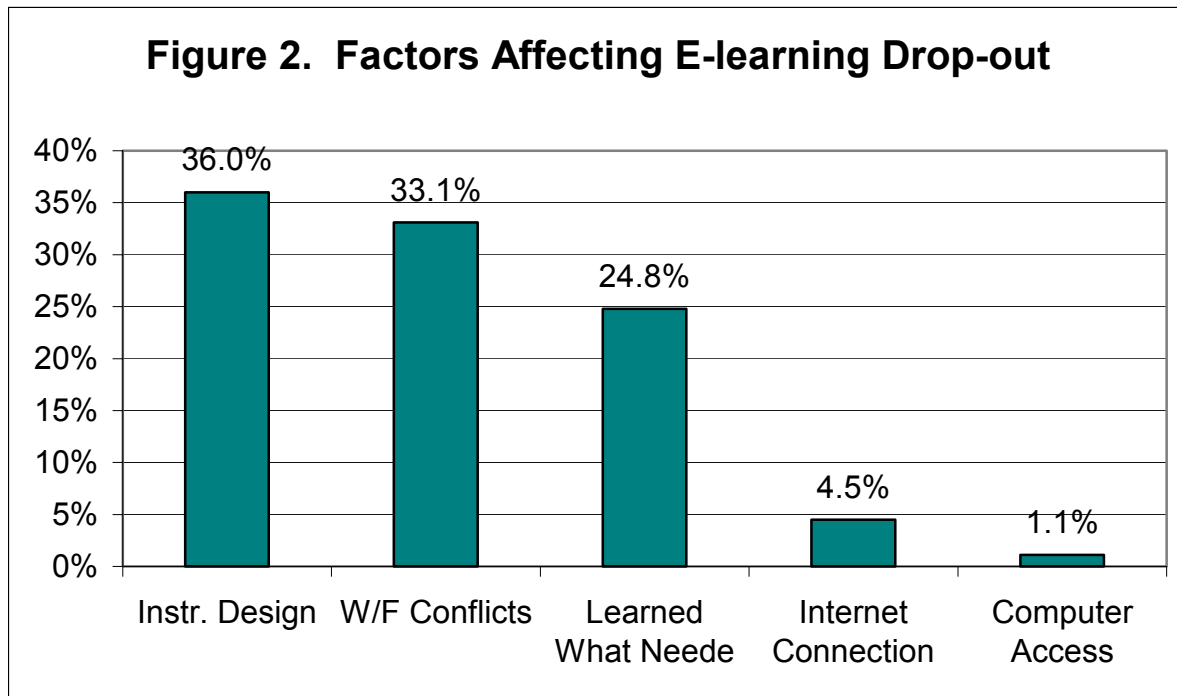
instructors/facilitators' follow-up also appears to be a factor influencing e-learning completion (16 percent). On the other hand, frequent follow-up from supervisors and e-learning administrators did not seem to be important factors contributing to e-learning completion. The reported rate for supervisor follow-up is only 3.2 percent, and the rate of the administrator, 2.4 percent. The importance of the factors contributing to e-learning completion as reported by the respondents is summarized in Figure 1.



### *Factors impacting dropout*

As displayed in Figure 2, important factors affecting drop out identified by the respondents include lack of motivation (36 percent), instructional design-related factors, learning style mismatch (36 percent), and time conflicts with work and family commitments (33.1 percent). Another important factor impacting dropout is that

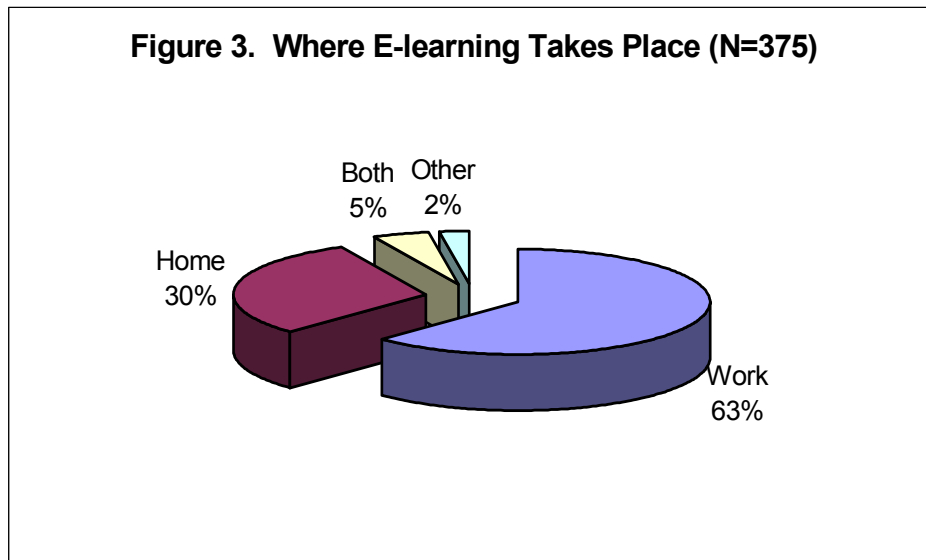
participants learned what they needed to know and were able to do the job before the end of the course (25 percent). Technical factors, such as Internet connection problems (4.5 percent) and lack of access to a computer (1.1 percent) do not appear to have significant impact on dropout rate.



### *E-learning Efforts and Workload*

About 2/3 of the survey respondents (66.6 percent) reported spending between a half an hour and 2 hours per week on an e-learning course. The mean number of hours spent per week on e-learning courses was 3.7 hours. Further, many respondents reported being highly comfortable or comfortable with Internet and computer technology (80 percent), with a minority of participants reporting feelings of discomfort or high discomfort with the technologies (13.6 percent).

The majority of the e-learners participating in this study reported that they took their e-learning courses at work (62.4 percent) rather than at home (30.4 percent) as suggested by Figure 3. Further, most respondents indicated that their work hours



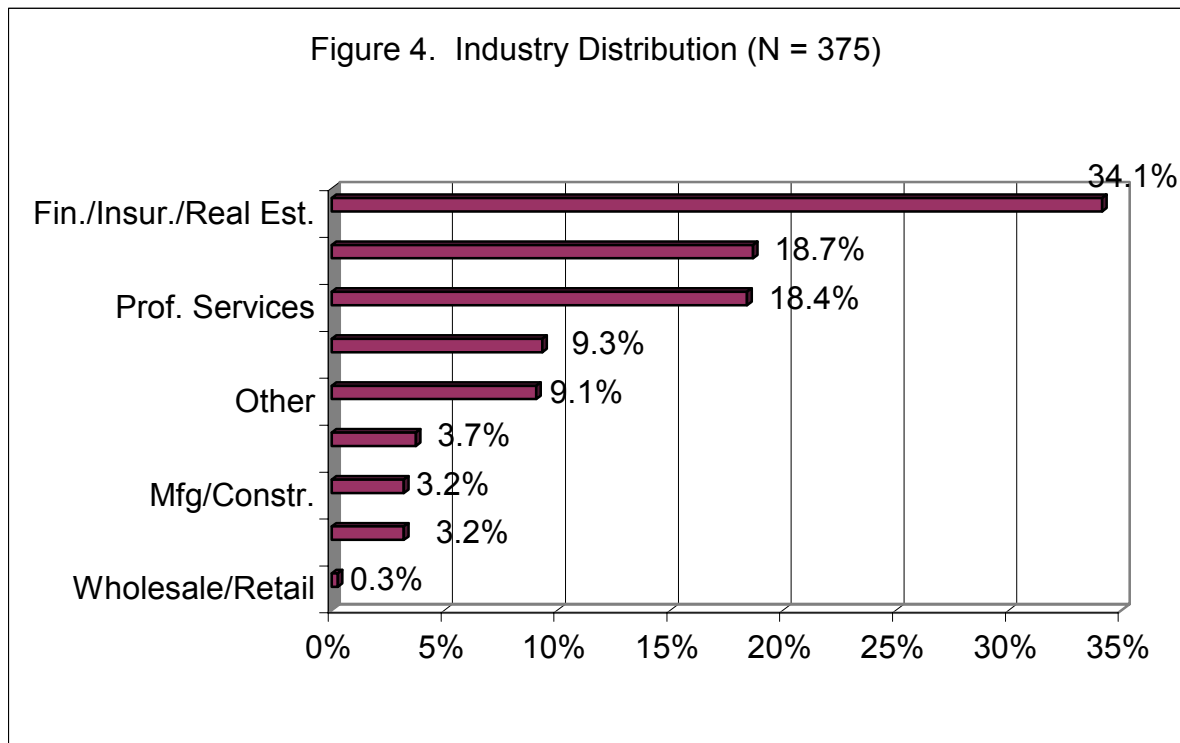
generally stay the same during their e-learning courses (68 percent). However, a good portion of respondents reported that their workload actually increases during their e-learning courses (27.7 percent). Only a small number reported that their work hours decrease during their e-learning courses (4.3 percent). Most reported that they have access to high-speed Internet resources available to them via company Intranet or Cable/DSL modems (87.7 percent).

### *Correlation Analysis*

A weak positive relationship was found between Internet access mode and completion: participants using Intranet to access their courses had significantly higher e-

learning completion rates ( $r = .112$ ,  $p = .031$ ). In addition, a significant relationship was found between gender and completion rates: specifically, females in this study had higher completion rates in their e-learning courses than males ( $r = .133$ ,  $p = .04$ ).

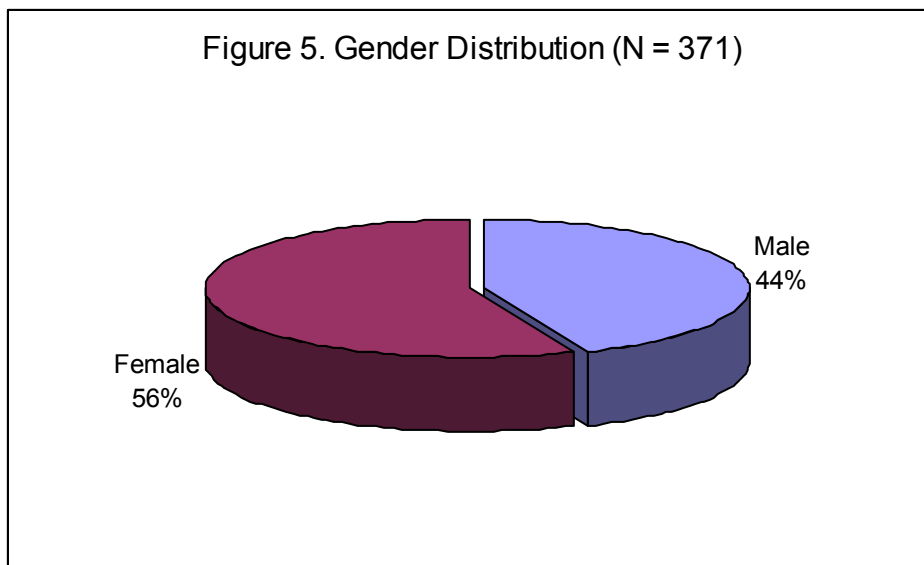
## Demographics of the Respondents



The survey respondents were recent e-learning participants who had started at least one e-learning course in the last three years. Figure 4 displays the industry composition of the respondents. 19 percent of those surveyed reported from the technology industry, 9 percent from education, 3 percent from manufacturing, and 7 percent from government and non-profit organizations. It appears that

Financial/Insurance/Real Estate was over-represented with 35 percent of the respondents.

Figure 5 shows that females comprised slightly over half of the respondents (55.7 percent). The majority of participants (68 percent) were in the 35-54 age bracket as indicated by Figure 6. 85 percent of the population held at least a Bachelor's degree as indicated by Figure 7. Half of the population (50.9 percent) were from large



organizations of 3,000 or more employees, while, at the other extreme, one quarter of the population (26.9 percent) were from small companies of 500 people or less (See Figure 8). Participants indicated experience in a wide variety of types of e-learning: self-paced without facilitation, CD-ROM, facilitated online instruction, and live instructors with online materials.

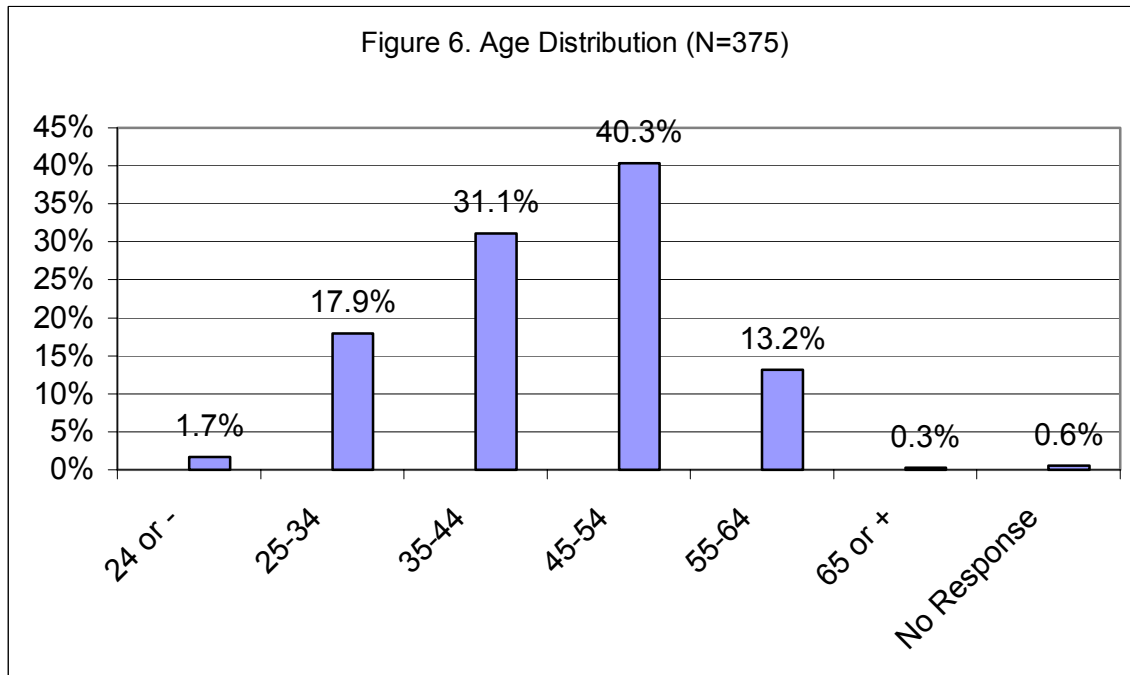
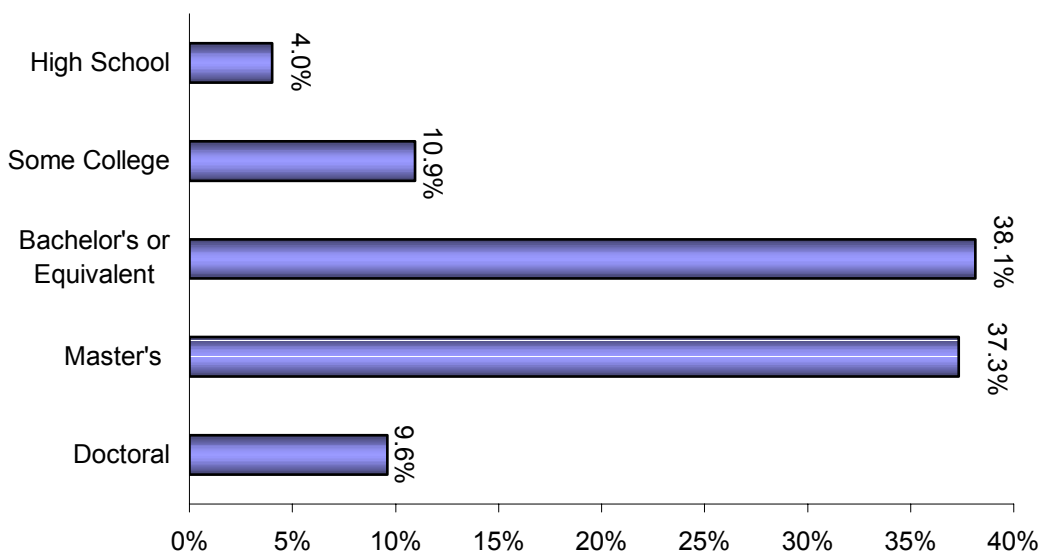
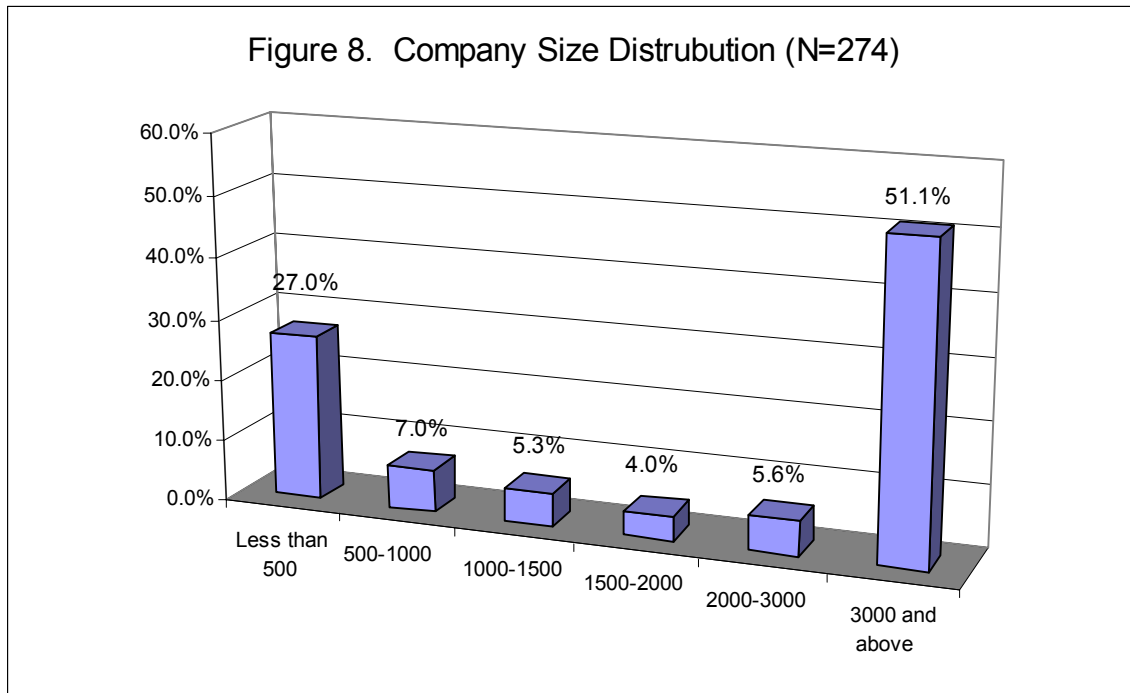


Figure 7. Education Background (N=375)





### **Part 3. E-learning Managers' Perspective: Findings from the Qualitative Approach**

#### **Data Collection Process**

The qualitative data collection process was focused on e-learning managers. The primary method of data collection was telephone interviews conducted during a five-week period in May and June, 2003. Fifteen interviews were conducted. The sample was gathered through maximum variation sampling. This means, while every eligible participant's organization must have or had an e-learning program, the programs will be different in all other ways. Cases were attained using a convenience sample of participants who were self-nominated, recommended or requested to participate, (Trochim, 2001).

Interviewees are primarily in e-learning management positions. The selected sample represents a variety of industries including banking, insurance, computer software, finance, the government, and higher education.

Interviews were conducted based on a structured questionnaire (see Appendix A) and lasted about 45 minutes each. With the agreement of the interviewees, twelve of the thirteen interviews were tape recorded and transcribed. The resulting transcriptions and interviewers' field notes form the basis for this study.

#### **Sample Demographics**

Table 2 summarizes each case's industry and interviewee's job title. All other identifiable nature will remain confidential.

Table 2. Summary of Interview Cases

<b>Case 1:</b> "Alan"	Armed forces, Commander of Learning Center	<b>Case 8:</b> "Hannah"	Banking, Instructional Designer in Corporate Learning and Development
<b>Case 2:</b> "Beth"	Banking, Manager of Corporate Learning and Development	<b>Case 9:</b> "Ian"	Financial, Customer Education
<b>Case 3:</b> "Carl"	Computer software, Customer Education	<b>Case 10:</b> "Jen"	Healthcare, Director of Learning Technology
<b>Case 4:</b> "Denise"	Banking, Instructional Designer in Corporate Learning and Development	<b>Case 11:</b> "Kevin"	Insurance, Internal Education
<b>Case 5:</b> "Ed"	High Education, Professor	<b>Case 12:</b> "Len"	Technology, Co-leader of Worldwide e-Learning Initiative
<b>Case 6:</b> "Fran"	Computer software, Manager of Courseware Development	<b>Case 13:</b> "Mary"	Insurance, Manager of Learning Best Practices
<b>Case 7:</b> "Gail"	High Education, Director of the Distance Degree Program		

Since each participant was not asked for specific demographic information, exact parallels cannot be drawn between cases. However, a brief background of each case is provided below.

Alan was the only representative from a government entity. His institution has been committed to e-learning for the last two years and approximately 40-50 percent of their total learning programs are computer-based e-learning. Alan's program is highly sophisticated and has begun using simulators and 3-D imaging capabilities.

Beth, Denise and Hannah all work for the same company. Beth supervises Denise and Hannah, who customize off-the-shelf content for their learning and development program. They represent offices in two different cities. Their segment of

the company, which they spoke specifically about, has had e-learning for six months. Of the total courses their segment of the company offers, 100 percent are delivered through e-learning. Their company is also sophisticated offering virtual, real-time learning solutions.

Carl was the interviewee who was not taped and transcribed. However, it was noted that his company has been offering e-learning solutions for approximately six months, and 1/3 of the company's total customer training, which he works with and spoke about, is delivered through e-learning. Virtual, real-time solutions that are the same as those offered by Beth, Denise and Hannah's company are offered by his company, making their e-learning also sophisticated.

Both the corporate and higher education perspectives were provided by Ed. His corporate experience with e-learning extends back fifteen years, while the e-learning programs at the university started about four years ago. In his experience, 12-15 percent of the total training components are delivered through e-learning. He spoke about experiences including a variety of e-learning methods such as synchronous, asynchronous and web-based.

Fran provided interesting insight, because the segment of the company she works for and spoke about, no longer uses e-learning for delivery. She is involved in customer education, and implemented a blended approach in which the pre-requisite courses were done through e-learning and the rest of the content was delivered face-to-face. Her segment of the company has returned strictly to traditional modes of learning, but is reconsidering their approach to e-learning.

The program in high education that Gail is involved in is fully online and has been so for the last year. However, she notes that merely 10 percent of the university's total learning is offered online. She spoke from experiences as both the director of the program and a professor of e-learning and indicated that a variety of e-learning approaches are used depending on the instructor and course content.

Ian was another interviewee who gave the perspective of customer education. The segment of the company that he works, has been offering e-learning for its customers for about 2.5 years. Further, 65 percent of total customer training is offered through e-learning. The program he spoke about is sophisticated, starting off with a web-cast featuring a facilitator and subject-matter-expert.

The organization that Jen represents has had e-learning programs for the last five years. However, it should be noted, that they use a blended learning approach consisting of a computer application used in the traditional classroom. This is a highly unsophisticated type of e-learning, as compared to other interviewees. Almost all of their courses contain some computer learning related component.

Kevin recognizes that his organization began with computer based learning about ten years ago, and while he wouldn't consider that the e-learning of today, it was a precursor. Of the company's total training, less than 10 percent is delivered through e-learning, and all the courses are relatively unsophisticated, as it is all asynchronous.

Len also notes that his company has been involved with computer based e-learning since the early 1990's, although the formalized e-learning initiative did not come about until 3 years ago. His segment of the company services 5 lines of business with e-learning solutions that are varied depending on content and line of business.

Mary's organization has a long standing history with computer based learning extending back to the 1980's. However, their experience with e-learning and products on the web began about four years ago. Currently, 10 percent of the organization's total learning is delivered through e-learning. Currently her organization offers relatively unsophisticated courses that are off-the-shelf and asynchronous; however, they are looking to move towards a more interactive blended approach.

### **Data Processing Method**

Qualitative analysis software, NVivo (QSR, 2003), was used for data processing. The data was entered with no identifiable marks such as a product, company or interviewee's name. Only the participants' answers were entered into the program as "constructions offered by or in the sources" with the intent of analyzing the data from an open frame of reference (Lincoln & Guba, 1989). Data were coded both visually and using the coding feature of NVivo. Five major frames were established and defined as "nodes", a container for an idea or concept. The nodes were conceived based on the type of responses given by interviewees. Participants were asked about their own e-learning program, its characteristics and their opinions concerning e-learning, therefore their responses were classified as behaviors, beliefs, attitudes, structures or processes toward the various subjects. This is to ensure the coding process would not be subject to the coder's interpretations of the nodes. According to *Merriam-Webster's Collegiate Dictionary*, the nodes were defined as the following:

- Behaviors: The way in which something functions or operates
- Beliefs: A tenet or body of tenets held by a group or individual

- Attitudes: A feeling or emotion toward a fact or state
- Structures: Organization of parts as dominated by the general character of the whole
- Processes: A series of actions or operations conducting to an end.

Two other broad nodes were also established: questions, those raised by participants, and definitions, working explanations of e-learning related terms provided by participants in conversation.

During the coding process, the definitions assigned to some of the nodes were further developed. For example, to clearly identify the difference between a belief and attitude, attitudes were thought of as feelings with a degree association, such as positive or negative, like or dislike. Also, as working definitions structures were abbreviated into “set-up” and processes into “means” or “method”.

Next the nodes were recoded into more refined categories. These new nodes developed out of the already coded data and are:

- Behaviors: Of the organization, Of the organization towards commitment to e-learning, Of the e-learning user
- Beliefs: Concerning dropout, Concerning challenges faced by the organization, Concerning the benefits of e-learning, curriculum
- Attitudes: Favorable towards e-learning, Unfavorable towards e-learning,
- Structures: How much e-learning makes up total learning programs, Different types of e-learning programs
- Processes: Success strategies, User selection, tracking
- Definitions: E-learning, Blended learning.

This concluded the data coding process. Next each node was examined for patterns and themes. Additionally, the software was used to query the data to further explore or develop patterns and themes.

In an effort to achieve the highest degree of trustworthiness, specifically credibility, transferability, dependability and confirmability, a number of steps were taken (Lincoln & Guba, 1989). Creditability was established through triangulation. Specifically, different reports were only credited when they were verified by another source, perhaps another interview or documentation in the form of current literature. Peer debriefing and in-process member checks were also conducted to ensure credibility. In-process member checks ensured the researchers correctly understood what interviews were sharing.

Transferability requires the production of “thick description” which can serve as a database for others to make a case transferable to another case. While this study has produced rich findings, this is its weakest point in regards to trustworthiness. Specifically, the study was designed and completed without follow-up interviews. While they were not needed, follow-up interviews would have produced more thick description and better transferability. Finally, an audit can serve to determine both dependability and confirmability of findings and requires the researcher to authenticate the research account at two points: the process of the inquiry and the product in the form of data. An audit trail has been produced which provides the sources for an inquiry audit, and consists of raw data, data reduction and analysis products, data reconstruction and synthesis products, process notes, materials relating to intentions and dispositions, and instrument development information.

## **Findings**

Reported findings are the result of examining the nodes of behaviors, beliefs, attitudes, structures, processes and definitions for similarities and differences. The language and meaning of responses were further queried and compared and contrasted. Findings are those that could be articulated and supported by the data in the cases analyzed.

### **Dropout Rate**

While e-learning dropout is common to most programs, it does not exist in *all* programs. As one participant said,

“...we have been good about [not having] drop offs, but only because we have sort of planned it out well for most of these clients. In other words, we didn't just throw it out there, we gave it a point... So we don't really get much dropout at this point” (Case 9, Ian, Paragraph 26).

Programs that have been well developed with intention, with learners that are “very hungry for” or “really excited” about the program, and are selective about learners experienced little or no dropout (Case 2, Beth, Paragraph 27). In fact, the respondents from higher education are not aware of any difference in dropout between the distance learning program and traditional program. Cases 1, 5 and 9 cited their dropout rates below 5 to 10 percent.

Further, while the majority of the learning population that enjoys e-learning, emphatically enjoys it, there is still a small portion, 5 to 10 percent, who strongly dislike it and prefer face-to-face learning (Case 8, Hannah, Paragraph 13). The learning

population falls on the extreme ends of fondness towards e-learning. One participant commented, “I would say probably 3 to 1 the comments are positive about the methods of e-learning rather than negative, but those that don’t like it, really don’t like it” (Case 2, Beth, Paragraph 16). This is important because as a participant noted, “The more interested the students reflected that they were when they were doing it, [and] the higher the retention rate for the program.” This supports the claim that e-learning dropout can be controlled for when e-learning options are developed with intention, and when users are carefully selected and eager to learn the content (Case 5, Ed, Paragraph 52).

The concept of dropout being more applicable to e-learning than traditional learning was doubted by some managers interviewed. They indicated that they are aware that learners are leaving before completing the course, however this may not indicate dropout if the learner achieved what they intended to achieve and they “weren’t really looking to finish the class” (Case 13, Mary, Paragraph 54). One participant noted, “the hard thing is that if someone abandons the class we don’t know if it is because they got what they needed, like I needed to know how to do one thing so I went in to learn how to do it and the rest was irrelevant...” (Case 11, Kevin, Paragraph 20) Before a conclusion of dropout can be determined, it is necessary to find out why the learner left, and if they got what they needed. As compared to traditional learning, the ability to count the number of participants on the screen seems to make determining the level of involvement easier, yet in reality, just because a body is in a classroom does not make the learner involved. “... I would argue that the difference in the dropout between rates in the classroom world and online world, I don’t know if there is a big delta. In the online

world it is more apparent to us because we can read numbers...” said one participant (Case 12, Len, Paragraph 21). He further indicated that a learner in a traditional classroom may be in the room, but knowing their degree of engagement is difficult, they may be reliving last night’s basketball game. Thus, the focus on counting participants and dropout in e-learning is bolstered by the electronic medium.

### **Factors Influencing Dropout Rate**

Data from the interviews revealed that the factors influencing e-learning completion and dropout can be described as instructional design, organizational support, learner motivation, the learning environment, and social engagement.

#### *Instructional Design*

E-learning designs that actively incorporate the principles of adult learning, consider individual learning styles and are relevant to the learner’s work enhance completion. Further, respondents offering synchronous virtual solutions had the highest completion rates. The respondent working in customer education in the financial sector uses web-casts to initiate their e-learning courses and maintained completion rates around 90 percent (Case 9, Ian). The matching of the right content to the right learner, delivered through the right medium, and at the right time influences completion rates. As one participant said, “[A challenge] is the delivery system and making sure that the right e-learning product is delivered to the right individual at the time that makes the most sense” (Case 1, Alan, Paragraph 29). A “one-size-fits-all” approach is insufficient. “I think one [challenge to maintaining involvement] is the human behavior, preference aspect. The innate spot...e-learning should not be changing your innate behavior it is

just trying to parallel, supplement, or in some cases replace something because of convenience”, said one participant who co-leads a worldwide e-learning initiative for his organization (Case 12, Len, Paragraph 27). While it can be costly, the learner’s personal preference for the medium of learning needs to be considered when developing a course as “...individuals being very different, there may be some individuals who dropout because the learning medium doesn’t work well for them” (Case11, Paragraph 26). Many people find a “social component to learning” and prefer an interactive medium that allows for student to student and student to instructor interaction through collaboration and communication (Case 5, Ed, Paragraph 45).

Accounting for learner’s needs and individual learning styles during instructional development reduces dropout. One manager said, “If we are trying to learn, we need to apply the principles of adult learning”, which means getting the right content to the individual, at the appropriate time that they need it (Case 10, Jen, Paragraph 44). Adults choose to learn when “... they’re putting the knowledge to use right away...Adult learning...tells us that you’re an adult learner only when you understand the experience and the knowledge you need” (Case 1, Alan, Paragraph 38). Instructional designers should also remember to “chunk” the content into 15-20 minute modules as adult learners are learning on the job. The work environment is full of distractions and interruptions so “...the curriculum has to support people that can start and stop the e-learning at either convenient times, or when they have to” (Case 1, Alan, Paragraph 31).

### *Organizational Support*

Programs with top-level visibility, including support and follow-up, had fewer non-completers. One organization in particular asked their CEO to enroll in a course and spoke about its successes through a letter advocating learning on the job as a priority (Case 2, Beth). Further, without the organizational support, even learners with the right intentions “don’t have the means” and “won’t be able to get there” (Case 12, Len, Paragraph 27).

### *Learner Motivation*

Another element that enhances course completion is learner motivation. One participant whose organization has been involved with distance learning for the last twenty years pointed out,

“I think employee motivation has a lot to do with it too, and I think some people just have better skill[s] in terms of blocking out time to do tasks like that and motivating themselves to get through it. But, I do know in a couple of cases where people were highly motivated self-directed learners, they did a lot of training using these online modules” (Case 13, Mary, Paragraph 62).

The more highly motivated the learner, the greater completion rate. A participant said, “The biggest challenge is the motivation. Somehow convincing people that there is enough value there for them to take time out of their day to do this” (Case 6, Fran, Paragraph 46). This closely relates to element of perceived value that was addressed under the category of instructional design.

### *Learning Environment*

Learning environment reported as a contributing factor to dropout includes lack of learning time due to pressing work-related tasks and interruptions while learning at the desk due to an “open door policy” culture compounded with no clear way to indicate that learning is going on. One participant who articulated this comprising situation said,

“I think that if you have a company that has sort of an open door policy with managers, you want to kind of foster that kind of thing, so you want a way that discourages people from non-essential learning interruptions because learning is going on, but at the same time you don’t want to close your door” (Case 11, Kevin, Paragraph 26).

This dichotomy of learning and working at the desk can influence dropout.

### *Technology*

Interviewees indicated that technical problems, in the forms of hardware and software issues, do not play a significant role in e-learning dropout. When asked whether hardware/software a problem, Ed (Case 5) responded: “Not now. Especially with web-based, that’s one of the advantages. It removes hardware from the equation, and actually, for the most part, now it removes software from the equation” (Paragraph 47). E-learning managers were overall satisfied with the quality of their software and employees skills in technology applications.

### *Social Engagement*

A blended approach to e-learning has been successful in reducing dropout because it provides a human touch to the learning and is “more effective in getting people to come to grips with the material” (Case 13, Mary, Paragraph 66). It has proven

for many to be “an overall strong model” and “an important area to be moving towards” (Case 13, Mary, Paragraph 68). In this approach the lack of interactivity is overcome, and learning becomes social again. Highly interactive synchronous virtual solutions are paired with asynchronous, self-paced lessons. One participant noted this trend towards interactivity when she said, “Learning started through communication and we got away from that and it became graphics on a page, and now I think the industry is taking a step back and say[ing], ‘Where did we stop caring about the learning and started caring just about the delivery of the learning?’ (Case 10, Jen, Paragraph 44).” When speaking about the efforts her organization was taking to achieve more interactivity, one respondent said that e-learning participants “really like” the live conference call and PowerPoint presentation delivered through a product called Web-Ex (Case 8, Hannah, Paragraph 13). The previous participant summarized it all when she remarked, “We don’t need to sell e-learning anymore. We need to sell that it is an engaging and meaningful experience” (Case 10, Jen, Paragraph 46).

### *Learner Relevance and Value*

Implementing a learning management system (LMS) helps practitioners address multiple needs. An LMS helps practitioners make content relevant to the learner, and establishes a perceived value in the content, by tying competencies needed to courses being offered. Participants indicate that motivation may depend on “how directly they will use the content on the job” (Case 3, Carl, Paragraph 9). An LMS allows learners to view their performance plan, which highlights the competencies they need to develop for their work, the available e-courses, and “map the learning to their role or their

competencies” (Case 9, Ian, Paragraph 22). As one participant whose organization is preparing to implement an LMS explained, “...you may call that [learning management system] a motivator, it will eventually be how that individual’s performance is assessed and will have some bearing on their merit and salary, pay process” (Case 13, Mary, Paragraph 32).

### *Terminology Issue*

It appears that clear definitions and a universal understanding of e-learning terminology don’t exist. For example, when asked how long participants have had e-learning programs, people responded 10 and 15 years (Case 11, Kevin; Case 5, Ed). While companies may have offered computer based training or distance learning then, most respondents would not “count that as e-learning the way we talk about it today” (Case 11, Kevin, Paragraph 8). As one participant said, “Around 2000 was when we formalized things and we came up with our e-services and we came up with the e-learning overall strategy for our company and so the whole formal initiative that we got rolling was from 2000”(Case 12, Len, Paragraph 9), suggesting a lack of clarity of what constitutes e-learning today.

Further, a consensus on what constitutes blended learning does not exist. One respondent considers traditional learning combined with practice of a software application to be blended learning. Another participant considered blended learning to be asynchronous, self-paced modules combined with a synchronous virtual meeting.

## **Part 4. Analysis and Recommendations**

It is believed that this study is the first attempt in systematically measuring overall e-learning completion/dropout rates for the U.S. organizations. This part of the report presents our analysis based on the findings from both quantitative and qualitative aspects of the research.

### **Does Dropout Rate Really Matter?**

Our finding of a 73.7 percent completion rate (or 26.3 percent dropout rate) for e-learning courses is quite different from the previously claimed dropout rate range of 35-80 percent often cited in the popular press (Francola, 2000; Wilkinson, 2003). The result indicates that e-learning abandonment and dropout may not be as alarming an epidemic as was feared. It also suggests that dropout in e-learning may be unavoidable—as it is in all other learning platforms, including traditional classroom instruction—but not inevitable. In fact, many respondents reported 100 percent completion rates in the e-learning courses that they started. By controlling for the completion and dropout factors, which will be discussed later, organizations can help decrease the dropout rates.

While it is a fact that the 26.3 percent dropout rate in this study is higher than the 2.8 percent dropout rate for traditional courses, this may be attributable to the fact that “dropout” is not being systematically measured in either the traditional classroom or online learning platforms. Dropout is easier to track in e-learning given today’s technology. However, it is also possible that participants in traditional classrooms may have “dropped out” in terms of effort and learning, although they may never formally withdraw from the course. Consequently, the focus in e-learning should not necessarily

be on comparing traditional classroom dropout rate with e-learning dropout rates. Instead, e-learning stakeholders would benefit from focusing on achieving effective learning results through the e-learning delivery medium.

The qualitative study also revealed a similar or even lower dropout rate among the interviewed organizations, namely, 25 percent. Additionally, the data suggested that e-learning has not replaced the traditional classroom learning format as many industry leader and practitioners had expected. To effectively achieve the learning and business objectives, it is very important to systematically evaluate and measure e-learning initiatives, not just focus on measuring dropout rates.

### **Factors Important to Completion and Dropout**

The factors that contribute to e-learning dropout fall into four categories: motivation, instructional design, work environment, and organizational support.

As the findings indicated, personal motivation is a key factor that impacts on completion (73 percent) and dropout (36 percent). However, personal motivation in learning, in addition to individuals' aspirations to learn new skills and knowledge, is also a function of many variables such as interesting learning content and interactions, organization support, etc. Therefore, to support e-learning initiatives, organizations may apply integrated strategies that not only focus on skills and knowledge improvement, but also promote learning engagement and organizational support. This analysis is consistent with the respondents' reported completion factors of "interesting learning

interactions (40 percent)", "mandatory company completion policies" (28.5 percent), and "online instructors' follow-up" (16 percent).

It is interesting to see that a quarter of the respondents (25 percent) believed that they learned what they needed in order to do the job before the completion of an e-learning course. Obviously, this is another major factor contributed to e-learning dropout. However, the question is, who should be responsible for determining the learning objectives for e-learning, and who has the authority to decide what learning is appropriate for doing the job: the organizations (including instructional design function), the e-learners, or some combination of both? Without clarifying the responsibility for determining "when is enough," we may see the dropout phenomenon continue to be an issue.

The above issue is closely related to instructional design. Together with learning style consistency, it seems to be another major factor impacting on the e-learning dropout rate as reported by 36percent of the respondents in the quantitative study. In reality, typical e-learners in corporate America may not be able to perceive poorly designed e-learning materials or mismatched learning styles when frustrated in learning: all they know is that they have problems mastering the learning content. However, our qualitative study with data from e-learning managers reveals that it is indeed a critical factor.

E-learning managers in the qualitative study articulated the need to account for many facets during the instructional design process of e-learning. During this process, many problems associated with e-learning dropout can be preempted. For instance, through a sound needs assessment, instructional designers may identify learning gaps

and define the minimum requirements for completion based on the actual learning needs instead of a “one-size-fits-all” approach. As with any other delivery method, instructional designers for e-learning must still consider coordinating the right content, through the right medium, for the right learner at the right time.

Time conflict with work commitments appeared to be one of the major factors influencing the e-learning dropout rate. Overall, more than 95 percent of respondents stated that their workload either stayed the same or increased during their e-learning sessions. This may be a warning sign to organizations that intend to pursue a high completion rate. We believe that the time conflict factor is also closely related to personal motivation in e-learning--given the constant or even increased workload, it is not a surprise to see a high dropout rate.

Given the widely adopted Internet and computer technologies in organizations, technical issues such as Internet connections and lack of access to a computer appear to be insignificant factors on dropout rate, according to the respondents. Technological competencies are not a significant factor determining the dropout rate, because only 13.6 percent of the respondents reported that they were uncomfortable or highly uncomfortable with the technologies. This is also consistent with the reported popularity of the high-speed Internet resources available to the e-learners, as 87 percent of them reported having such access. Our qualitative data also confirmed this from the e-learning managers' point of view.

Given the technology status among the respondents, it is not surprising that Intranet access is somewhat correlated with the e-learning completion rate--

respondents with Intranet or high-speed connections are more likely complete an e-learning course than those who do not.

As with any other organizational initiatives, the success of e-learning largely depends on the degree of support it received from an organization, especially top level support. This can be achieved through management support, encouragement and follow-up of e-learners learning. “C” level executives need to be aware of e-learning and its benefits. Their support through corporate communications channels is an important factor for the success of e-learning initiatives.

While many e-learning managers in the qualitative approach indicated that there is no common understanding for what constitutes blended learning, a move towards a “new” blended learning is occurring. While some managers recognized the use of computer applications and software during traditional learning as blended learning, managers who are combining virtual, real-time solutions with asynchronous, self-paced lessons are bridging a gap to the new blended learning. No longer does the live, interactive and social component of blended learning have to occur in one location. Our qualitative approach showed the integrated use of live chat, phone conferencing, streaming video and sharing computer applications during e-learning programs. This new blended learning attains many of the benefits associated with traditional learning and puts a social, interactive spin on e-learning.

### **Recommendations: Strategies for making e-learning more effective**

The findings and analysis lead us to the following recommendations that may help organizations to formulate more effective e-learning strategies.

First, e-learning dropout rate may not be an appropriate primary metric for measuring the success of e-learning. Unlike education systems with certain requirements, dropout in an e-learning course in corporate America does not necessarily imply that the learners failed in learning. The key issue is whether the learner can perform required jobs and tasks competently. The relatively high completion rate (or low dropout rate) revealed by this study also tells us that, overall, e-learning dropout should not be a major concern at the current time. We do believe, however, that the dropout rate may serve as a secondary measure for e-learning. For instance, a dropout rate of 50 percent or higher should prompt an organization to review its e-learning design, implementation, supporting system, and overall strategy for improvement. The ultimate measure for e-learning success should be how competently employees can perform on the job. For this purpose, we recommend organizations systematically evaluate and measure their e-learning initiatives so as to provide information for the management making decisions regarding e-learning initiatives.

Second, given the critical importance of personal motivation in e-learning, organizations should explore strategies to motivate learners. These may include clarifying the purpose and importance of e-learning, establishing policies or procedures to follow up with employee learning, requiring online instructors/facilitators to produce constant follow-up and feedback to e-learners, and other supports from the top management.

A third important aspect for organizations is to provide sufficient time for employees to learn. Since most e-learning sessions are taking place at work settings and learning can be easily interrupted by daily tasks or workplace interactions. To

accommodate “learning-at-work,” organizations may introduce policies to ensure learners have uninterrupted time to learn. Alternatively, organizations may consider converting longer e-learning modules into an informal learning format, such as electronic performance support systems (or EPSSs). This can ensure learning the right content at the right time with minimum work interruptions.

Poor instructional design increases the likelihood of learners dropping out. Our recommendation for managers and e-learning stakeholders to improve the quality of their e-learning courses is to conduct an initial front-end needs analysis of employees’ learning gap so that right learning objectives and content can be created. Interaction, curiosity-driven content, user-friendly graphics and interfaces, familiar examples and cases, and application exercises are all design elements that should be considered, where appropriate, in order to create engaging online courses.

This study is an attempt to better understand e-learning and its role in employee training and performance improvement. Further studies need to be conducted to continue this endeavor and support the technology-based learning platform.

### **Limitations of the Study**

The results of this study must be interpreted with caution. From the results discussed above, some industries, such as financial/insurance/real estate, were over-represented in this study. Also, because the survey was distributed via the Internet via professional discussion forums, populations with higher educational levels were over-represented. Nonetheless, the study does provide important information to better understand participants’ e-learning behaviors.

## **Conclusions**

This study reveals that the e-learning dropout rate (about 26 percent) is lower than previously claimed in popular press and trade journals. In addition, drop out rates may not be an effective metric for measuring the success of e-learning. Instead, systematic evaluation and measurement methods should be used. Personal motivation, instructional design, learning environment, and organizational support are some of the most important factors affecting e-learning completion and dropout. The key measure for ultimate e-learning success should be how competently an e-learner can perform on the job. Based on learning objectives, EPSSs may be considered to replace some longer e-learning modules. The generalization of this study is limited as some demographic variables of the respondents may have been over-represented. Further studies are needed to better understand e-learning and its role in employee training and performance improvement.

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## **Appendix A: Online Survey**

1. How many traditional classroom courses have you started in the past 3 years?
2. How many of those courses have you completed?
3. Which of the following qualities do you like most about traditional classrooms? (Please select up to 4 items).
  - Student-to-student interactions
  - Student-to-instructor interactions
  - Non-electronic resources
  - Interactive lessons
  - Accessibility to the instructor
  - Getting out of a routine work environment?
  - Other (please specify)?
4. How many e-learning courses have you started in the past 3 years?
5. How many of the e-courses have you completed?
6. For the e-learning courses I completed, the following factor(s) affected my completion (Please check all apply).
  - I was attracted by the interesting learning interactions
  - Frequent follow-up from my supervisor
  - Personal motivation
  - Frequent follow-up from online instructor
  - Frequent follow-up from the administrative staff
  - Frequent interactions with the online learners
  - Company policies require completion
  - Company provided incentive for completion
  - Other (please specify)?
7. For the e-courses I did not complete, the following factors are part of the reason(s). (Please check all that apply)
  - I learned what I needed to learn before completing of the course
  - I was able to do what I am supposed to do on the job before completing of the course
  - I found the course material irrelevant to my learning needs
  - I had difficulties in connecting to the Internet/Intranet
  - I found the course(s) did not match my learning style
  - I didn't like the lack of face-to-face interactions
  - Time conflict with work commitments
  - Time conflict with family commitments
  - I had difficulty accessing a computer
  - I found the course to be poorly administrated
  - I had no motivation to complete the course
  - I experienced a lack of management/organizational support from my job
  - Nobody followed up with my learning progress
  - The completion was not required
  - Other (please specify)
8. How many hours do you spend on e-Learning courses?
  - On average, I work \_\_\_\_\_ hours per week on e-learning courses.

9. During my e-learning process, my work hours generally:
  - Increase
  - Decrease
  - Stay the same
10. I usually take my e-learning course(s):
  - At work
  - At home
  - Other (please specify)
11. My primary Internet access for e-learning is:
  - Intranet
  - DSL/Cable Modem
  - Dial-up
12. Overall, when using the Internet and computer technology, I consider myself:
  - Highly uncomfortable
  - Uncomfortable
  - Neutral
  - Comfortable
  - Highly comfortable
13. I have experienced the following type(s) of e-learning so far. (Please select all that apply)
  - CD-ROM
  - Live instruction with online materials
  - Facilitated online instruction
  - Self-paced online with facilitation
  - Real time virtual classroom
  - Video
  - Other (please specify)
14. My estimate of the average rate of completion for e-learning in my organization is:
  - Less than 10percent
  - 10percent to 20percent
  - 20percent to 30percent
  - 30percent to 40percent
  - 40percent to 50percent
  - 50percent or higher
  - I don't know
15. My age is:
  - 24 or under
  - 25 to 34
  - 35 to 44
  - 45 to 54
  - 55 to 64
  - 65 or older
16. My gender is:
  - Male
  - Female
17. My education level is:
  - High school

- Some college
  - Bachelors degree of equivalent
  - Graduate degree
  - Doctoral degree
18. My industry is:
- Manufacturing/construction
  - Wholesale/Retail Trade
  - Professional services
  - Finance/Insurance/Real Estate
  - Government agencies
  - Non-profit organizations
  - Technology
  - Other (please specify)
19. The number of employees in my organization is:
- Less than 500
  - 500-1000
  - 1000-1500
  - 1500-2000
  - 2000-3000
  - 3000 and above
20. My position in my organization is:
- Exempt employee
  - Non-exempt employee
  - E-learning manager
  - Training manager
  - HR Director
  - Chief Learning Officer
  - Other (please specify)
21. My work location is: \_\_\_\_\_
22. Please enter yoyo email below if you're interested in receiving a summary of the survey statistics.
23. Please provide any comments you may have concerning e-learning.

## **Appendix B: E-learning Manager Interview Questionnaire**

- 1). How long has your organization had an e-learning program in place?
- 2). What percent of your learning programs are delivered via e-learning? Are these e-courses synchronous, asynchronous, or a combination of both? Probe for percentage
- 3). Are the e-learning programs available to everyone in the organization? If not, who is eligible to participate? What are the criteria for participation?
- 4). Please describe the overall success of your e-learning program:  
Probe for:
  - Learning cost reduction
  - Learning effectiveness
  - On-the-job applicability
  - Participation rates
- 5). Have you experienced any problem retaining e-learning participants? If so, can you please give us an approximate percentage of learners that drop out? Is there a particular stage of the course in which learners are most likely to drop out? If so, when?
- 6). What do you see as the biggest challenges to maintaining learner participation in e-learning courses?
- 7). In your opinion, what factors affect the dropout rate?  
Probe for
  - Participants mastered learning objectives/skills prior to course completion
  - Instructional design
  - Content
  - Management support
  - Hardware/software problems
  - Technological skill
  - Personal motivation/commitment
  - Physical and/or psychological distance/ lack of social interaction
  - Other work commitments
  - Other family commitments
  - Time constraints
- 8). What strategies are you currently using to help engage and retain learners (and reduce the dropout rate?) How effective are these efforts?  
Probe for
  - Design strategies (such as interactivity, synchronous vs. asynchronous learning)
  - Management strategies (instructor follow-up, company policies require participation)
  - Measurement strategies

- Motivational strategies (participation tied to recognition, reward, or promotion)
- Other

9). Does your organization utilize blended learning, in which e-learning is combined with live-instructor/traditional classroom learning? If so, how effective are these blended learning courses in comparison with the e-learning courses? Probe for specifics of blended learning, the combinations of components involved.