Valuing the adult learner in e-learning: part two – insights from four companies

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Abstract

Purpose – To investigate how the adult learner is valued in e-learning corporate settings.

Design/methodology/approach – Case study methodology was used for this research. Four Fortune 500 companies that had active e-learning initiatives for a minimum of four years were selected. Data for the development of the four cases were collected via semi-structured telephone interviews. The questions that guided data collection and case development are: what is the e-learning context in your organization?; How is the adult learner valued in the e-learning environment?; What considerations must be addressed when valuing the adult learner in e-learning environments within corporate settings?

Findings – Four case studies emerged from data collection and revealed that adult learners are being valued and supported in corporate e-learning settings. A comparative analysis of the case studies with the Waight and Stewart conceptual model showed that the e-learning teams are complying with all factors for the exception of transfer and return on investment.

Research limitations/implications – A primary limitation inherent in this study is its inclusion of only four large corporations. Future investigation can extend understanding of how the adult learner is valued by researching more companies and their e-learning teams.

Practical implications – These cases provide evidence that adult learners are being valued. They can serve as models for e-learning teams in their efforts to value the adult learner in e-learning within corporate settings.

Originality/value – Although a body of literature related to valuing adults in academic settings exists, little investigation has been done in corporate contexts. This study confirms that adult learners are valued in e-learning in corporate settings.

Keywords Learning, Computer based learning, Adult education

Paper type Case study

Introduction

Part one of this paper presented Waight and Stewart conceptual model (Figure 1) on valuing the adult learner in e-learning with the corporate settings. The purpose of this paper is to present how four e-learning teams in four companies are valuing the adult learner in e-learning. First, the methodology that guided the case studies is presented. Second, the four case studies are shared. Third, a discussion of the four case studies and their relationship with the conceptual model is provided. Lastly, conclusions are drawn based on the case studies and discussion.

The conceptual model reflects companies where support for e-learning via supportive leadership, learning cultures, technology infrastructure, and finance are apparent. In addition, the model indicated analyses such as needs assessment, learner, work, work setting, and content analyses as viable processes that if implemented well can assist in providing the adult learner targeted and meaningful learning opportunities.

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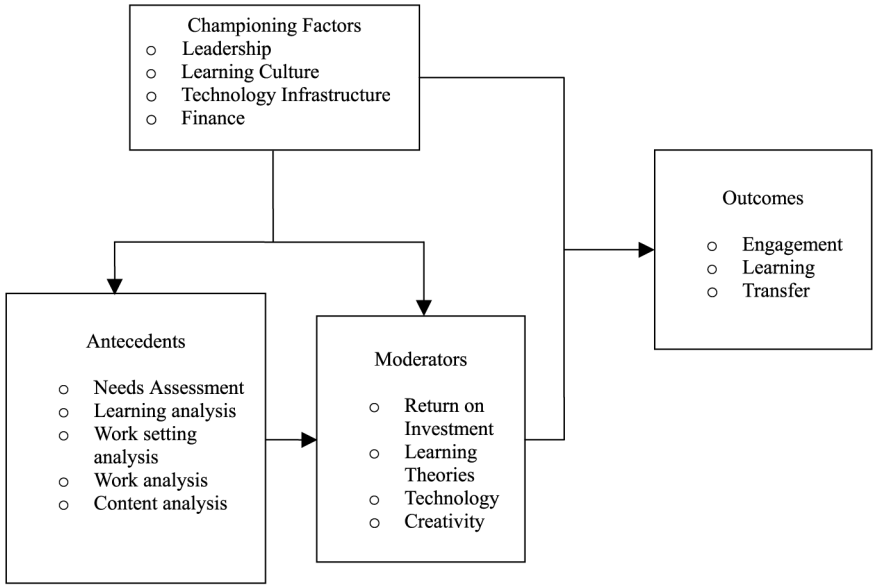

Figure 1.
Valuing the adult learner in e-learning within corporate settings

The model shows, however, that antecedents start the value process but knowledge and skills on return on investment, learning theories, technology, and creativity add to the value for the adult learner. The model further indicates that when championing factors, antecedents, and moderators are adhered, outcomes such as engagement, learning, and transfer are possible.

Methodology

Research design

The method used in this research was a case study. Yin (2003) stated that a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context. The purpose of the study was to investigate how the adult learner is valued within the e-learning environment. The following questions guided data collection:

(1) What is the e-learning context in your organization?

(2) How is the adult learner valued in the e-learning environment?

(3) What considerations must be addressed when valuing the adult learner in e-learning environments within corporate settings?

Sample

The sample of this study was nine e-learning designers whose Fortune 500 companies had active e-learning initiatives for a minimum of four years. These companies represented the retail, insurance, oil and technology industries. Selection of companies occurred through an informational telephone interview with e-learning designers. During the interview, the researchers explained the purpose of the study and asked if the companies had an e-learning initiative. All e-learning designers within the four companies that were initially contacted had active e-learning initiatives

and expressed their willingness to partake in the study. Overall, there were three e-learning team leaders, and six instructional designers. Interviewees for the four companies ranged between one and three.

Data collection

Semi-structured telephone interviews were conducted with e-learning representatives of each company. All participants received the study proposal, which included the interview questions via e-mail. Before the telephone interview was conducted the researchers asked for permission to record the interviews. All participants agreed to be recorded. All the interviews were transcribed.

Instrumentation

The interview guide included three major sections that paralleled the study's research questions. The three major sections included context, the adult learner in the e-learning environment and e-learning considerations in the corporate world. The researchers tested the interview guide with two of the e-learning participants. These participants were included in the study. The researchers conducted a preliminary content analysis to ensure that research questions intent was being targeted. The pilot test revealed that all the questions were relevant.

Data analysis

Participants' descriptive content responses to the interview questions were read, and categorized by research question. Each research question contained a main premise, which was used by the researcher to reduce large amounts of data into a smaller number of analytic units or themes. After analyzing each participant's response for each research question, the researcher color-coded the themes. Upon identifying the recurrent themes, the researcher created descriptive tables for each theme. In this way the researcher identified data that supported each theme. Upon completing the analysis, cases were written for each company. Cases were sent to the respective interviewees for their review and feedback. All cases received valuable feedback and were revised.

Results

The following are four case studies on how the adult learner is valued in the e-learning within the corporate setting. These cases represent the efforts of e-learning teams within specific divisions of their companies. Of the four companies, only two approved to have their names mentioned in the case study.

Case study one: insurance company

Context. A large personal lines insurer has been a successful implementer of e-learning. The development of e-learning began in 1995 with computer based technology courses. These early courses were designed for agent training and led to the subsequent development of web-based courses. The learners tracked by the learning management system (LMS) include employees, contract agents, and their staffs. In 2003, more than 60,000 learners completed at least one course online. Typically, learners are positive about their e-learning experiences. The results of an annual enterprise-wide opinion survey indicated that 78 percent were satisfied or completely satisfied with their e-learning courses.

Originally, the drive to introduce e-learning was precipitated by the geographic diversity of learners. In addition to cost, the need and value for learning, quickly became primary drivers of the e-learning growth. Predominately, e-learning is an asynchronous experience. Less than 10 percent of web-based training is blended with instructor led training. Presently, virtual classrooms are under consideration for possible addition to the e-learning experience.

This company currently tracks over 4,000 learning activities including courses, assessments, workshops, and class registrations. There are approximately 700 enterprise wide online courses. These include technology courses such as Microsoft Office; insurance product knowledge courses; strategy courses covering topics such as company history, how the company makes money, and corporate ethics; process courses such as billing and computer applications; soft skills courses; and technology courses. The team charged with the creation of e-learning is within the human resources function. This team delivers enterprise based e-learning courses while business units deliver specific business related e-learning courses.

How are adult learners valued?. The adult learner is an important consideration for the e-learning designers. The adult learner consideration, however, sits within a realization of constraints and opportunities. First, e-learning designers are aware that bandwidth constrains the type and the application of animations and audio clips. Consequently, their application of video clips in their e-learning courses is minimal. Second, e-learning designers are aware of their expertise and realize that they need additional talent on two and three dimension simulations.

Despite these constraints, however, the e-learning designers have also been able to take advantage of design and production opportunities. The use of standardized templates has improved how e-learning designers create courses. This has reduced the design and production time for a typical course from 40 to 15 days. The e-learning designers recognized, however, that interviewing subject matter experts and writing scripts are the processes that take the most time and there has only been limited help from technology for these parts of the course design and development process. Considering their constraints and opportunities, the e-learning designers identified a seven-dimension strategy to value the adult learner. The following describes the seven dimensions.

Realizing that the e-learning group mainly serves enterprise-wide e-learning needs, content selection is driven by a steering committee that has the pulse on learning needs that are strategic for individual, group, and organizational performance. The committee has representation from the finance, marketing, and HR functions. This committee recently provided content advice on the economics of the business and compliance policies. This steering committee assists the e-learning team in valuing the adult learner by advising on content that is relevant and meaningful to the operations of the business.

In reference to content sequence, e-learning courses may reflect an information-assessment, assessment-information, and an individualized sequence option. All three sequences give adult learners an opportunity to process information differently, and engage in a preferred learning style. The information-assessment sequence forces learners to process information before completing the assessment. In addition, the assessment-information sequence gives learners the opportunity to identify their knowledge gap and then target the specific knowledge that they may

need. Instructional designers stated that the latter sequence works well with product related courses.

Adult earners also get the opportunity to structure their courses. Learners are able to decide how they want to see things – for example, learners may choose to be asked questions throughout the course or only to be asked questions at the beginning and/or at the end. Learners may also choose the sequence of their learning activities. To avoid information overload, most modules are usually 15 minutes or less.

Adult learners also get an opportunity to make choices on content presentation. Typically, courses will include a text and audio portion and have graphics, which are used to enhance the content delivery. Transcripts of the audio portion are also made available for anyone with hearing disabilities and for those who chose not to listen to the audio. Video is rarely used because of bandwidth constraints; a short video clip with the chairman introducing a new set of courses is not uncommon.

Interaction focuses mainly on learner-content interaction. Adult learners get the chance to interact with content after every three or four screens, a design standard that applies to all courses. Interaction after three or four screens may include answering a question or completing a matching activity – an example, matching definitions with terms. Learner-content interaction also occurs through problem-solving scenarios. Learners get the opportunity to diagnose a scenario and choose among several solutions. Lastly, learner-content interaction also occurs through games.

Value for the adult learner is supported by design standards. In addition to enforcing interaction after three or four screens, the e-learning designers developed five sets of templates for their courses to standardize features and allow adult learners easy navigation. Choice of templates depends on the content under design. Policy compliance courses, for example, use the templates with the office theme. The template background is typically a hallway, desks, or the cafeteria. Graphically, people will appear and ask questions in the context of an office. Overall, all templates also have navigation, glossary, and an area where links to other web sites are uploaded. All these components appear at the same locations on the screens in all five sets of templates.

Assessment is another component via which the adult learner is valued. Pre and post assessment occurs in about 20 percent of the courses with about 80 percent only having post assessment. Assessment techniques may include true and false questions, matching and multiple choices, fill in the blanks and problem-solving scenarios. Assessment plays a crucial role in learners' performance on the job, especially since the e-learning courses are tied to the strategic organizational performance. If learners do not pass the test the first time, they retake the test and parts of the course if necessary to meet the passing criteria. Last year, for example, all learners selling insurance had to take the "do not call list" course. Every learner was tracked and anyone who did not take or did not pass the test could make unsolicited calls.

Instant feedback, a component of the assessments, helps adult learners to immediately focus on their knowledge gap, and respond appropriately such as reviewing the module before retaking the assessment.

Transfer of e-learning to the job has only been tracked with a few courses. The e-learning team, however, is making transfer of learning on the job one of their core competencies and they are presently exploring various transfer assessment tools. Presently, assessing transfer occurs through a 30- and 90-day follow-up with the learner and the manager, which seeks to find what learners have learned and applied

on the job. Last year, transfer was tracked for 12 courses. Transfer is presently influenced by managers' involvement with the e-learning process. Transfer for the billing course was tracked by recording how learners answered billing questions and if they had to transfer questions to a more experienced person. Results showed that the transferring questions to an expert had decreased and managers were quite happy.

In conclusion, the e-learning group is focused on providing enterprise-wide e-learning courses. Though bandwidth and lack of skills to develop high-end simulation techniques are present, the team keeps the adult learner at the forefront of their design by ensuring that content is relevant and meaningful. Meaningfulness occurs by working with the steering committee and subject matter experts to identify content and capture the best scenarios that are relevant to the organization. Meaningfulness is also inserted into the e-learning design by creating templates that have themes relating to company infrastructure and culture. Content sequence and presentation give the learners locus of control whereas learner-content interaction, standards, and assessments encourage learners to interact and process information in various ways. Enforcing interaction after three or four screens and limiting modules to 15 minutes or less help prevent information overload. Overall, this e-learning team has been proactive in valuing the adult learner in their e-learning design.

Case study two: energy services group, Halliburton

Context. Halliburton is one of the world's largest providers of products and services to the oil and gas industries. Halliburton employs more than 100,000 people in over 120 countries. Halliburton's Energy Services Group consists of four business segments: drilling and formation evaluation, fluids, production optimization, and landmark and other energy services. The second group is the engineering and construction group, known as Kellogg Brown & Root. This mini-case focuses only on the Energy Services Group.

For Halliburton's Energy Services Group e-learning is a company-wide initiative introduced in 2000. The driving forces influencing its initiation included a desire to reduce costs and increase access. The travel cost for both learners and instructors inherent in instructor-led training was one cost reduction factor. Additionally, e-learning was viewed as a means to successfully reach learners worldwide.

Most of the e-learning opportunities are offered asynchronously. Learning modules are available through the LMS and can be accessed by learners at any time. Additionally, some instructor led courses have a blended format where learners may access materials to prepare for the course and/or may use e-learning assessment tools. In some cases synchronous approaches are used for collaborative and communication purposes. Both learners and instructors can talk to each other and share documents and applications.

In many cases e-learning can be accessed at any time. This, however, can be affected by technology-related constraints. Bandwidth related issues are constraints, especially in specific geographic areas such as West Africa. Additional access issues may be as simple as the presence of a computer and appropriate network connections. In some cases, employees in remote areas utilize a satellite office equipped with workstations. Access for employees from home is possible for some, but it is riddled with home equipment, firewall, and security issues. Currently selected employees use virtual private networks (VPN) to connect from their homes. The e-learning team hopes to

increase access locations by distributing laptop computers and providing kiosks at specific locations.

Halliburton's LMS includes courses developed internally as well as those purchased from outside vendors. About 1,000 courses developed by external entities and more than 140 (mostly technical) internally developed courses are available. Typically, the duration of a course is about one hour. Internally developed courses include technical content for subject matter such as drilling, mud, hardware, and exploration technology. Additional non-technical content includes areas such as legal issues, business conduct, finance, procurement, human resources, and leadership. Purchasing of externally created course in the areas of leadership and management, for example, are driven by business units needs. A recent contract secured the availability of a catalogue of "soft skill" training offered in a number of formats including simulations, online books, quick reference materials, and job aides. While Halliburton purchases online training from vendors it does not sell internally developed e-learning courses.

The team of five instructional designers, four multimedia specialists, and one technical publishing specialist manage the e-learning initiative. Together, they serve more than 35,000 employees of the Energy Services Group. For 2002, approximately 279,500 courses were completed, reflecting an average of about eight courses per employee. The e-learning initiative is a part of the human resource development function and it is termed Halliburton University.

How are adult learners valued?. E-learning team at Halliburton has gone great strides to design e-learning courses that value the adult learner. These strides, however, reside within constraints and opportunities. The first challenge is response time to clients due to a small staff of about ten designers for approximately 35,000 employees. Designers said that their roles entail consulting with product service lines on their learning needs, meeting clients' requests, and reviewing possible third party courses for compatibility with the LMS standards. While having a small staff affects response time, designers shared that the LMS has helped them to deliver course content and track learners' access and performance. Designers shared that business units' value and support for e-learning has helped them value the adult learner. In addition, Halliburton's initiative of identifying competencies for each job role has assisted the designers in identifying relevant content for targeted audiences.

The e-learning team shared that they apply adult learning principles to the e-learning courses by adhering to the ADDIE module. The instructional design model, ADDIE, includes analysis, design, development, implementation, and evaluation. In specific, analysis can include performance problem analysis, needs assessment, goal, work, learner, work setting and content analyses. At present, the e-learning team is refining the instructional design process to foster consistency in the application of ISD among all team members. The e-learning team said that even though they are an in-house development team, internal client groups fund their design and development time and this in itself underlines the need to give the client the best service for their monies. Front-end analysis and even more inclusive, the complete instructional design process helps to value the adult learner by providing the most appropriate and relevant learning solution.

The e-learning team employs front-end analysis procedures understand the adult learners and their needs. Understanding the adult learners' needs helps the e-learning team in identifying parameters for design, development and deployment.

The front-end analysis may include technology infrastructure, type of content, level, and type of interaction necessary, learner analysis, as well as cost and delivery options. Learner analysis, in specific, does not occur for every course or module because the designers are often tasked with delivering e-learning courses to the same target audiences. Technology analysis has proved to be very important, especially when dealing with adult learners worldwide. Bandwidth issues, for example, vary and have major implications on accessing e-learning courses. The e-learning team said that they sometimes visit sites to get a good picture of technology limitations. The e-learning team also noted that the work setting analysis has shown that the multicultural context of their organization communicates the need to have e-learning courses translated into various languages and to be sensitive of cultural differences. The e-learning team said that they are presently translating some courses to Spanish and hope to have other languages in the near future. The e-learning team said that they use cultural informants from respective countries for advice on cultural issues.

As a result of front-end analysis the e-learning team may chose one of the three levels of course design. The first level, the most basic, may include power point with audio and an assessment activity. In essence, level one has a linear structure where the user would be going through a page turn type of lesson. Level one is usually chosen when the client has an urgent need to get content to employees as quickly as possible. Level two, on the other hand, gives the learner control of the content sequence and presentation. Adult learners are given the chance to navigate through the module and select how they want the content presented and can choose the sequence of their activities. Text is presented in a static and dynamic form giving adult learners opportunities to access certain links or use graphics, tables or charts to reinforce concepts. Level two would generally contain more in depth assessments activities, which are tied to performance objectives. In contrast, level one does not necessarily state the performance objectives. Level three represents the most complex types of course design. In addition to having clearly stated performance objectives, which are tied to assessments, this level might include video and audio clips, and some more complex animations that require the learner to interact and make decisions at certain sections of the animations. Level three may also include some low level simulations, for example, where the learner is given procedures to simulate the correct use of a piece of machinery. The simulation would have to meet specifications required in the real world.

The e-learning team stipulated that on the average they design level two and three type courses. Sometimes they might even use a combination of levels two and three. Designers shared that it could take somewhere between 325 and 425 hours to design level two and three type courses. Designers shared that they recently collaborated with the multimedia development team to identify timeframes for simple to complex animations and simulations, and for creating static graphics to complex tool drawings. In the next six to twelve months, designers will be evaluating projected timeframes for designing and developing level two and three type courses.

Course selection is a process driven by product service lines. Product lines refer to the different aspects of the oil field service industry, for example, the logging and perforating service. Once the content area is identified, designers and subject matter experts examine content to ensure that it is relevant to the performance gap, the job, and the target audience. Thus, designers and subject matter experts conduct work

analysis to ensure that they have real-life examples and scenarios. Designers shared that learner's characteristics such as educational backgrounds can also influence the selection of content. The e-learning team added that a technically based module that has a target audience of high school and college degreed individuals, for example, has to be designed well to engage all types of learners in the learning process.

The e-learning team ensures that content presentation is varied to give the adult learners preferences on how to access content. The e-learning designers use audio, video, print, animations, and simulations and in some situations, case studies to present content. Animations, in particular, serve to give adult learners visual representations of concepts. Modules that have graphic intensive simulations are sometimes presented in a hybrid module because of bandwidth limitations. In hybrid module, learners receive their content in a CD and take their assessments through the LMS. Learners have the options of listening or turning off the audio and of downloading a job-aid, which can be a summary of the module. The use of dynamic text allows learners access to internal web pages that are relevant to the respective module. The designers use Flash, Dream Weaver, Robo Demo and Microsoft Office to assist with content presentation.

Eighty percent of the courses are asynchronous and are sometimes the forerunners to classroom learning. Thus, learners are primarily engaged with learner-content interactions. Learner-content interaction may occur by learners choosing their modules, choosing their content presentation options, and answering questions. However, learners may get the opportunity to interact with each other and instructors via a virtual collaborative tool called Interwise. The tool engages learners and instructor in real time using audio, application sharing, white board, and a chat room. The instructor can give control to learners; learners in turn can raise their hands and interact with their peers.

Assessments give adult learners feedback on their knowledge acquisition. Assessments may include multiple choice; fill in the blank, and matching. The e-learning team shared that while they would like to design dynamic assessments, the LMS does not presently support those capabilities. Assessments are designed to give instant feedback to the learner especially since learners are expected to receive an 80 percent on most tests. If the 80 percent is not met the first time, learners have the options of retaking the test or returning to the module. The LMS allows learners to take the test twice in one sitting and if the 80 percent is missed on the second try, the learners are automatically logged off and need to log in again if they want to retake the test for the third time. The e-learning team shared that the order of test questions and answers might change every time the test is taken.

The standards that guide course design comply with the LMS. Standards include html, flash, navigation structures, titles, fonts, size, color, animations, pop-ups, for example. Keeping the adult learner in mind, the e-learning team also includes performance objectives, overviews and formative and summative learning checks or assessments. Performance objectives are categorized using Bloom's taxonomy reflecting simple to more complex learning outcomes.

The e-learning team has also created storyboard screens to assist with standardizing the process of the course design. Designers mentioned that storyboards allow everyone involved including subject matter, and multimedia

experts to review and revise instantly. This dynamic storyboard screen allows everyone involved to collaborate and to make changes to the course before it goes into development.

Adult learners mostly take their e-learning courses at their desktops. Kiosks and labs are available in some locations. The field employees may access their courses from a truck using a laptop that may be connected via satellite. Designers recognized that bandwidth issues influences where adult learners can access their courses.

Transfer of e-learning resides with the learner and supervisor. The e-learning team presently sees their role as identifying and using instructionally sound instruction methods and ensuring that the material is technically accurate. The team stated, however, that they plan to increase their efforts in addressing transfer of learning on the job and return on investment.

In conclusion, the e-learning team at Halliburton is continuously looking for ways to serve the adult learner in the e-learning environment. The value for the adult learner resides with the application of their creative use of instructional design process and of the technology infrastructure that exist worldwide. E-learning designers are about deploying a sound learning opportunity that meets clients' and adult learners' needs worldwide.

Case study three: retail chain store

Context. The focus of this case describes an e-learning team effort that serves the stores and asset protection sector of a retail store chain, which operates approximately 260 stores in 14 states. The chain is one component of a larger retail empire, which operates more than three distinct retail formats. This retail store chain employs approximately 29,000 employees.

The e-learning initiative began in 2000 and is located within the university of the retail store chain. The e-learning initiative is mainly directed at the executive level employees within the stores and asset protection sector. Primary reasons for the introduction of e-learning were to reach a geographically dispersed workforce within the United States and to create consistency, quality and relevance among the training design, development, delivery and results.

Asynchronous, synchronous, and blended formats are used to deliver training. Asynchronous learning focuses on computer-based modules while synchronous utilizes virtual classrooms. Blended learning may include a mix of computer-based modules and virtual classroom modules or face-to-face training with either computer based modules, or virtual classroom modules. A blended solution may have a team of employees taking a computer-based module all at the same time and upon completion the team gets together to share what they have learned. Approximately 30 modules have been developed with about 2 or 3 new offerings being created each quarter. While the retail store chain continues to expand its e-learning options, approximately 70 percent of the training continues to be offered face-to-face.

The training and development team is comprised of four persons. Two members focus solely on e-learning. With an e-learning staff of two, these individuals assume roles in project management, design, creation, execution, and evaluation. Typically, a computer-based module takes between 100 and 300 hours to design and develop; a virtual classroom module, on the other hand, requires about two months. While this e-learning initiative resides within the stores and asset protection sector of retail store

chain, it shares e-learning modules with other sectors and sometimes purchases modules from various vendors.

How are adult learners valued?. With e-learning representing approximately 30 percent of the training function and with the development team being relatively small (two persons), this case provides an overview of how the adult learner is valued within an emergent e-learning initiative.

Front-end analysis is conducted to ensure that training is relevant, meaningful, and authentic. Performance problem analysis, for example, ensures that the performance gap is linked with training content. Once the training link is identified, e-learning designers further analyze to identify whether the training can be delivered through face-to-face training or e-learning.

If e-learning is decided upon, then further analysis occurs to decide whether the medium will be computer-based, virtual classroom or a blended solution. Learner analysis also occurs to ensure that adult learners' characteristics are considered in the module design and development. Given that the target audience is usually executives, e-learning designers may conduct mini learner analyses when introducing a new content category.

Once the performance problem has been aligned with training, content selection is directed either through a partnership with senior managers and/or employees in the field or through a review of new processes or procedures. Subject matter experts focus on the target audience, the performance problem, and the respective environments to identify relevant content and most appropriate learning activities given the selected medium of delivery.

Content presentation occurs through text, graphics, video, and audio. Most computer-based modules have a combination of these mediums. Blended solutions use more video than computer-based modules because of bandwidth issues. Designers use flash, fireworks, trainer soft, robo-demo, and author ware to present content. At present, the adult learners cannot personalize the content presentation. The e-learning team is aware of this limitation, and is exploring options to give learners more control of content presentation options.

With learning occurring asynchronously, synchronously, and in blended formats, adult learners can engage in learner-content, learner-learner and learner-instructor interactions. Learner-content interaction occurs mainly with asynchronous e-learning modules. Learners usually interact via simulations, games, or quizzes. These types of activities can force learners to analyze, synthesize, and evaluate. Learner-content interaction also occurs while listening to the audio portion of the module or watching a video. E-learning designers ensure that adult learners have various types of interactive activities because they want learners to enjoy a preferred type of activity. Learner-learner and instructor-learner interactions occur via the virtual classroom. Virtual classroom modules are chosen primarily because they can meet the just-in-time needs of business units. Virtual classroom have live instructors who communicate to the learners using a radio talk show format. Learners are also able to interact with scenarios and questions posed by the instructor. Adult learners, in turn, can use the chat space to communicate among themselves and with the instructors.

With e-learning being an emergent initiative, the e-learning designers do not presently have a LMS. The designers, however, are in the process of developing an e-learning template that has consistent module design features. The template will

reflect the retail store chain's university campus. The template will have links to the various colleges, for example, the college of logistics. The college of logistics will encompass all logistic related modules. The template for each module, on the other hand, will include nine major sections. The sections are performance objectives, module overview, content presentation, assessment, journal tool, tip cards, glossary, help tool, and a library. The e-learning team shared that this template will give adult learners more opportunities to access their preferred learning activities and tools. In keeping with adult learning principles, in specific the attention span, e-learning designers are designing modules that take no more than 30 minutes to complete. Lastly, as the designers work towards developing their template, they are conducting usability testing for every module that is released. In specific, designers are evaluating how employees navigate, access and interact with the content. Designers said that listening to adult learners is important if they are to deliver a learner-centered e-learning experience.

The journal, one of the module features, will be a tool that can assist the transfer of learning on the job. Designers expect that the learners will use the journal to make personal notes about their learning, in specific, write what they would like to share with their peers and managers upon returning to the job. Presently, the direct supervisor is responsible to ensuring that learning is transferred on the job. The just-in-time delivery of computer-based and virtual classroom modules assist learners to transfer their learning on the job because the modules are based on just-in-time needs.

Assessments occur at the formative and summative levels. At the formative level, learners may be asked to answer questions as they proceed through the module. At the summative level, if assessments will not be tracked, learners may take a self-assessment in the form of game such as jeopardy or who wants to be a millionaire. If the summative assessment will be tracked, learners receive a reaction survey and assessment that may include multiple choice, fill in the blanks, true or false and matching type questions. With the absence of a formal LMS, the e-learning designers contract database services to collect and access data from the reaction survey and assessments. Learners usually receive instant feedback on assessments and can return to the assessment or module for clarification. Instant feedback is not given, however, when assessments are for certification. Performance on certification assessments is communicated directly to the learner or to the respective managers or supervisors.

Adult learners have access modules only at the stores. Every store has approximately three computers; one computer is dedicated to learning. Modules are delivered to the computers via an executable package. Employees individually or in groups of two or three can take the module at the same time. Introducing e-learning at the stores has been challenging because of the customer driven environment. The e-learning, shared, however, that they are presently exploring how to make learning seamless at the store level; one possibility could be the introduction of kiosks.

In conclusion, though the e-learning team at the retail store chain has the human resource, time, money, and bandwidth challenge, they are highly motivated and confident that their e-learning initiative will only improve to serve the adult learner. The designers highly anticipate the completion of the template because it will serve to decrease their design and development time. In addition, e-learning designers are

hoping to cross train the other two members of training and development team on e-learning processes such as meeting with clients, analyzing the performance problem, setting objectives, and getting the initial content layout using the instructional design process. This type of expertise could assist the existing designers to focus on coding and development. Although, emergent, the e-learning initiative at retail store chain is progressing in its mission to value the adult learner.

Case study four: HP services workforce development, HP

Context. Hewlett Packard (HP) is a technology solutions provider to consumers, businesses, and institutions globally. The company's offerings span IT infrastructure, personal computing and access devices, global services, imaging and printing for consumers, enterprises and small and medium businesses. With approximately 140,000 employees worldwide, HP serves more than one billion customers in more than 160 countries. While organizationally HP accomplishes this by focusing on multiple business organizations, this case examines only the HP Services Group (HPS), which consists of approximately 60,000 employees. It is recognized that e-learning initiatives exist in multiple organizations and groups within HP and they are beyond the scope of this case. Within HPS, a designated organization exists to develop, design, and deliver learning solutions to this business unit. The name of this organization is HPS Workforce Development (HPS WD).

The e-learning initiative with HPS began in 1999. The HPS WD team has created and monitored approximately 400,000 learning incidents in a recent six-month period. Approximately 85 percent of training is delivered electronically. Reasons cited for the introduction of e-learning into the group include cost efficiency; accessibility to learners, especially remote learners and those on customer sites; and time efficiency in that learners in the field can train where they are, without having to travel to a classroom setting.

Both synchronous and asynchronous formats are used. Self-paced modules, both those created "in-house" and those purchased from vendors, are available to learners for access at a time and place that meets their scheduled needs. Required company training, such as business conduct, is an example of content that is delivered by asynchronous, self-paced methods. Virtual classroom environments and virtual labs can be accessed remotely for synchronous and/or asynchronous experience. Virtual labs have successfully been used for technical training.

HPS e-learning courses are organized into portfolios. The main portfolio contains 1,800 self and instructor based courses. An additional 200 courses bring the total number of courses to 2,000. Portfolios include business conduct, technical, legal and professional skills such as consulting and project management. A virtual team comprised of curriculum developers, learners, delivery professionals and HP businesses work together and interface with product divisions to prioritize course offerings and to develop content. Specifically, the development team is a global organization of about 80 program managers plus developers and designers (total about 140 people) whose task it is to decide format, create content, develop courses, and evaluate feedback for the updating of courses. Increasingly, the outsourcing of course creation is being explored and utilized. As of 1 May 2004, most HPS employees had taken multiple e-learning courses. In general, while HPS WD does share courses across HP, it does not sell its learning packages to outside entities with the exception of customer services training solutions.

HPS WD employs a business performance-consulting model. To help learning consultants within the HPS apply the business performance model, the corporate workforce development team at HP introduced an electronic performance support system to assist teams in becoming aware of similarities among performance issues and the types of training that they are providing. As a result of this awareness, teams are combining their strengths and discovering synergies in their training efforts.

How are adult learners valued?. The adult learner is an important factor in the design of e-training within HPS. E-training includes web-based courses, virtual classrooms, web-inars, webcasts and remote labs. In addition to e-training, the e-learning designers within HPS WD also incorporate e-learning which includes all knowledge management/sharing type of learning activities. For the purpose of this case, e-training refers to all e-learning courses, while e-learning refers to all knowledge management/sharing type of activities. Both e-training and e-learning give the adult learners synchronous and asynchronous learning opportunities.

To meet adult learners' needs, the e-learning designers within HPS WD conduct a front-end analysis on several parameters to assist with design and development choices. Cost and time are primary factors as they affect the type of learning solution that can be developed. Size of audience also influences delivery options. Location of audience is critical, because a worldwide audience will have different implications for design and delivery versus a specific audience within a country. Lastly, equipment constraints in the target audiences' locations are considered for the design and development decisions. Once all the constraints are taken into account, the e-learning team ensures that the adult learner receives the best learning solution.

Content selection for e-training resides within a business performance consulting model. This model tightens the relevance and meaningfulness of content because training is provided based on short- and long-term performance needs. This performance approach to content selection gives adult learners learning opportunities that are tied to individual, group and organizational performance. In addition to identifying performance driven content, adult learners have the opportunity to select which components of the training solution is appropriate for them. For example, sales, support, service type of employees may take different components within the one training solution.

Having a technology-enabled environment gives the e-learning team the capability to present content using visuals, audio and video. Content presentation usually represents a mix of highly interactive solutions that give the adult learner the opportunity to choose their preferred medium for content presentation. In some cases, especially with customer training solutions, e-training courses may have a prompter that supports several languages. The language prompter gives the adult learner an additional opportunity to choose their preferred language of instruction.

Again, because of a strong technology infrastructure learning activities within the web-based courses are varied. Simulations, games, knowledge checks, and quizzes are some activities that are frequently used in web-based courses. The purpose of using varied learning activities is to give adult learners an opportunity to listen, interact, and play. Combining different learning strategies also helps the e-learning designers target a broader audience. Business games, for example, are presently used in very specific and strategic areas, because they are a significant investment to build. Business games can teach how to pursue and close a measure of opportunity with major clients by

simulating various scenarios for the learners. Teams of employees whose members have specific roles play these games. It must be mentioned, however, that developing these highly interactive courses takes time, and that not all courses are developed with the same level of interactivity. In essence, e-learning designers must find the balance between what they can do in the ideal world and what they can do in the practical world.

While web-based courses mainly focus on learner-content interaction, HP uses other mediums to enhance learner-learner and learner-instructor interactions. Virtual classrooms are used for small groups of people to maximize instructor-learner interaction. In the virtual classroom, learners can raise their hand if they want to ask a question or if they want to comment or answer a question. In addition, the virtual classroom has a group chat feature, which can be categorized as private or public.

Learners can engage in learner-learner or instructor-learner interaction via the chat space. Virtual classroom allows you to share applications, use a white board, or poll learners' reactions to different questions or issues. Virtual classrooms can be used to poll learners' satisfaction, and measure their level of knowledge acquisition.

Learners can draw, paint, and on the more humorous side, even throw tomatoes if they did not like the instructor or give their instructor apples if they enjoyed the learning experience. Web-inars and webcast, on the other hand, are used for large audiences but very little interaction between the instructor and the audience occurs, learners listen only. In addition to virtual classrooms, web-inars and webcast, HP is also using remote virtual labs that are sometimes instructor driven, self-directed or are used for practice or application of learning.

The blending of e-training and e-learning gives adult learners more opportunities for interaction and learning. HPS WD group has a robust knowledge management strategy that fosters e-learning through different forms of peer-to-peer learning, one form being communities of practice. Commercially available collaborative tools such as netmeeting, e-rooms, and instant messenger help to support peer-to-peer learning. HPS WD has a formal program called "Professions" which is a structured manner of organizing communities. Through communities of practice, the e-learning designers organize best practice training sessions, which are sometimes delivered using virtual classrooms. Another form of peer-to-peer learning is online mentoring and coaching. Formerly, coaching was offered at the executive level, but presently there is informal coaching at all levels of the organization. Discussion forums, another form of peer-to-peer learning, are also used extensively. Lastly, the formal technical career path is a program that is corporate wide and aims to offer individual contributors a virtual environment where they are valued and where they can strengthen their technological skills. To facilitate peer-to-peer learning, adult learners have access to knowledge management systems that are used to create, share, and reuse information regularly. Documentation of white papers, what HPS WD calls knowledge briefs, is a common practice among the group members.

To reduce frustration and to help meet preferred learning styles among adult learners, the e-learning designers are creating development roadmaps for employees that include both virtual and face-to-face learning opportunities. Combining virtual and face-to-face learning opportunities prevents HP from becoming a virtual training environment and gives the adult learner a chance to network during face-to-face classes while meeting their learning needs anytime, and anywhere.

Most adult learners around the world use their desktops as their primary location for taking their e-training courses. Some employees in the United States take the courses from their homes, as many are telecommuters. E-learning designers are starting to create learning rooms in major offices around the world to give learners an opportunity to isolate themselves from the day-to-day business pressures in order to concentrate on their learning.

Pre- and post-test assessments are frequently used in the e-training courses, especially since several of the training solutions are formal certification tracts. In reference to Kirkpatrick's four levels, reaction, learning, transfer, and results, e-learning designers mostly apply levels one and two. Level one, reaction occurs via the customer satisfaction survey. Level two, learning occurs through final tests or knowledge checks. Final tests and knowledge checks could include open-ended questions, multiple-choice questions, and true or false questions, for example. Levels three, transfer and four, results are done on a case-by-case basis because they are major undertakings and can be very costly.

To help with learner-assessment interaction, e-learning designers are starting to use interactive software that can create drag and drop boxes, and select an area on a picture, for example. Like high-end interactivity courses, however, such depends on cost and time constraints on design, development, and deployment.

In conclusion, the e-learning team with HPS WD is challenged to reach the adult learners worldwide via e-training and e-learning. The team of designers is pushing ahead with the help of a wide variety of technology tools. The designers, though, are quick to point out that front-end analyses identify which of the available technologies can be relevant for the design, development, and deployment of a given learning solution. Nevertheless, these e-learning designers are doing their best to value the adult learner within the e-training and e-learning environments.

Discussion

E-learning is a valuable training and development solution for many companies. Unlike academic environments (Johnson and Aragon, 2003), very little is known about how the adult learner is valued in e-learning within corporate settings. This study explored a Waight & Stewart conceptual model, which posits that valuing the adult learner in e-learning within corporate settings depends on the interdependence of championing factors, antecedents, and moderators for the achievement of engagement, learning, and transfer. Table I provides an overview how these e-learning teams played out in terms of championing factors, antecedents, moderators, and outcomes. The comparative analysis was made on the incidence of occurrence and not on the extent of occurrence. More research needs to be conducted to identify the extent of occurrence among all the factors.

The comparative analysis showed that all e-learning teams had leadership, a learning culture, technology infrastructure, and finance championing their efforts. The analysis also showed that all e-learning teams employed all five antecedents, which are needs assessments, learner analysis, work, work setting, and content analyses to help provide the most meaningful learning experience to the adult learner. In reference to moderators, the e-learning teams shared no incidence of return on investment. Incidence, however, the use of learning theories, technology skills, and creativity was provided. Lastly, all e-learning teams sighted incidents of learner engagement and learning. Only one e-learning team referred to transfer.

Waight & Stewart conceptual model	Case study one: insurance company	Case study two: energy services group, Halliburton	Case study three: retail chain store	Case study four: HPS WD
Championing factors				
Leadership	x	x	x	x
Learning culture	x	x	x	x
Technology infrastructure	x	x	x	x
Finance	x	x	x	x
Antecedents				
Needs assessment	x	x	x	x
Learner analysis	x	x	x	x
Work setting	x	x	x	x
Work	x	x	x	x
Content analysis	x	x	x	x
Moderators				
ROI				
Learning theories	x	x	x	x
Technology	x	x	x	x
Creativity	x	x	x	x
Outcomes				
Engagement	x	x	x	x
Learning	x	x	x	x
Transfer	x			

Table I.
Comparative analysis conceptual model and four case studies

While there were varying degrees of occurrence among the championing factors, antecedents, moderators and outcomes, this study provides basic confirmation that the adult learner is valued in e-learning within corporate settings. Realizing that there were opportunities and constraints for each e-learning team, the four cases provide a good insight into the energy and creativity that e-learning teams are employing to create sound learning experiences for adult learners. Further research is needed to establish the extent of implementation among the individual factors of the conceptual model (Figure 1). In addition, verification of this conceptual model is needed with more companies. Opportunities exist to explore how this conceptual model is being employed worldwide.

Conclusions

Overall, these four case studies reveal that adult learners are valued in e-learning within the four corporate settings. It can be said that these e-learning teams are progressively improving to provide the adult learner the best e-learning experience. These case studies also show that e-learning teams have strong competencies in instructional design, learning theories, and technology and that they are operating within companies that support their efforts in creating instructionally sound e-learning experiences.

References

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