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Editor's Note: In January 2002, we published Online Teaching in an Online World: Executive Summary. It provided a breadth of results from research conducted by Curtis J. Bonk incollaboration with Jones Knowledge, Inc. This is a complementary research on training, carefully documented and illustrated with 57 graphs. Distance learning practitioners at all levels - administrator, designer, teacher, and evaluator, can learn a great deal from both of these reports. The complete reports are available at http://www.publicationshare.com/. For expert practitioners, it will either confirm or challenge the approaches you now use. For the newcomer it provides a substantial foundation based in current research as a starting point for development and implementation of e-learning.

Online Training in an Online World

Curtis J. Bonk

Executive Summary

Welcome to the second of a series of survey research reports related to the use of the Internet in teaching and learning. Whereas our initial report addressed the use of the Internet by postsecondary instructors, this one focuses on e-learning in the corporate world and other training settings.

In response to the recent explosion of online training in work-related settings, we conducted a Web-based survey during April and May of 2001 that was completed by 201 respondents. These individuals were asked about their Web-based training practices, experiences, tool preferences, instructional approaches, assessment methods, obstacles, and support structures. Among those

completing this survey were corporate trainers, instructional designers, training managers, and Chief Learning Officers. The respondents represented a range of industry types that included information technology, financial services, education, manufacturing, government, consulting, military, and healthcare. Nearly all of them were either users of Web-based training or decision-makers regarding it. In addition, most were active members of training or online learning organizations.

While there was significantly greater interest in e-learning than actual commitment to it, the survey findings confirm that the Web is flourishing as a training delivery mechanism. Due to the recent emergence of this delivery method, however, more than half of the surveyed institutions outsourced aspects of their Web-based training needs. They were more likely to outsource the content and delivery system, than the implementation and evaluation of Web-based training. Respondent organizations tended to rely on blended approaches wherein Web-based training supplemented and, hopefully, enhanced face-to-face instruction (van Dam, 2002). Computer applications, technical skills, and job-related skills were the most common forms of training offered online.

Respondents noted various organizational support and cultural resistance problems that were limiting the adoption of e-learning. Barriers to adoption included perceptions of high cost, extensive instructor preparation time, limited technical support, and a general lack of bandwidth and necessary hardware. Respondents alluded to several types of online tools that could soon experience high demand including tools that fostered interactive feedback, annotations, demonstrations, assessment, and critical and creative thinking.

Whereas most e-learning surveys have explored technological infrastructure problems or have performed price and feature analyses on different types of online delivery platforms (Hall, 2000a, 2000b), this study attempted to understand some of the pedagogical tools and mechanisms that could benefit online trainers

and learners. With respect to engaging online learners, terms such as relevance, feedback, goals, interactivity, and choice were deemed important to the respondents. These course characteristics were considered vital to increasing student engagement while decreasing the high rates of online attrition currently experienced by many of their organizations. Student exploration, case-based learning, and problem-based learning were instructional approaches thought to be as effective in online as in traditional environments. However, instructional approaches such as discussion, lecture, role-play, mentoring, and group collaboration were seen as less applicable to online settings. When respondents were asked about various intrinsic motivational techniques, activities such as job reflections, team projects, and guest mentoring were considered more engaging and useful online than social ice breakers, peer reviews, and displaying learner products online. Given these results, it was clear that some examples of best online practices and success stories were needed. Stories of best practices can illustrate different instructional approaches and techniques to trainers and instructional designers who currently question their applicability.

Projections for the next decade indicate that the supply and demand for Web-based training will continue to escalate. As in our earlier college instructor survey, most respondents anticipated significant increases in Web-based instruction as well as in freelance or adjunct instruction. Additional resources and guides are presently needed to support such endeavors. Respondents also tended to ask for tools that were more collaborative and interactive. Interestingly, they expressed a need to share their online tasks and ideas with each other.

Most respondent organizations sought cost efficiencies and positive return on investment from online training. For instance, they expressed interest in learning objects that could be chunked and reused within their training systems. Many of these same organizations were not completely satisfied with their online tools and associated assessment practices. In fact, most did not conduct formal evaluations of their Web-based learning courses and

programs. The evaluations that did occur unfortunately were at the lower end of common evaluation frameworks, focusing on course satisfaction instead of return on investment.

Many respondents were also dissatisfied with the low course completion rates. While lack of time was selected as the chief reason for learner attrition, most institutions simply lacked incentives for online course completion. Common obstacles to Web-based learning included instructor preparation time, bandwidth, cost, and cultural support. Also contributing to the myriad of online course obstacles was the predominance of courses offered in only one language.

In addressing these problems and issues, respondent organizations incorporated various support structures for online learners and trainers. For example, many organizations tended to rely on e-mail support as well as online help and tutorials. Given that most respondents accessed Web-based training from their offices, desktop computers were also a highly strategic investment. In addition to internal support, conferences, workshops, and local experts were utilized for supporting the designers and developers of that training.

As with our earlier study of college faculty, these training and human resource professionals were interested in sharing course resources, consulting the Web for expert teaching answers, and offering their instructional services to others. While their organizations used a wide range of tools and tasks in Web-based training, they pointed to a number of key pedagogical tools that were not yet available or were just emerging. Given such needs, the coming decade should prove interesting for those developing, delivering, or evaluating Web-based training.

Despite the relative lengthiness of this survey, key questions related to online tool development, learner support, and assessment and evaluation were not addressed. Future research will also need to reveal the specific motives and rationale behind different Web-

based training initiatives and decisions. For instance, clarity is needed regarding current and projected e-learning funding levels, user satisfaction with particular learner-management and courseware systems, typical ROI calculations, the forms of online instructor training, and the incentive packages and reward structures for online course completion. In-depth studies might also ferret out e-learning differences between industry types as well as between large and more modest-sized organizations.

Key survey findings are summarized below. Greater detail regarding these results is provided in section 3 of this report.

Background of Respondents and Respondent Organizations (see 3.1)

Description of Survey Respondents

The survey was completed in April and May 2001 by 201 trainers, instructional designers, training managers, and human resource personnel.

This sample was highly aware of Web-based training issues.

In terms of Web-based training, 57 percent were both users and decision-makers, while 17 percent were users but not decision-makers and 20 percent were decision-makers but not users. When combined, 94 percent of our sample either used Web-based training or made decisions regarding it.

Only 6 percent were neither decision-makers nor users of Web-based training.

Size of Respondent Organizations

Respondents represented a range of institutional sizes. Ten percent worked at organizations of less than 30 people, 11 percent had between 31 and 100 employees, 18 percent between 101 and 500 employees, 10 percent between 501 and 1,000 employees, 27

percent between 1,001-5,000 employees, 6 percent between 5,001 to 10,000 employees, 15 percent between 10,001 and 100,000 employees, and 3 percent had more than 100,000 employees.

When categories were condensed, 21 percent of the survey respondents worked in organizations of 100 or fewer employees, 28 percent worked in organizations of between 101 and 1,000 employees, 33 percent worked in organizations employing 1,001 to 10,000 workers, and 18 percent worked in organizations of over 10,000 employees.

Whereas nearly half of the respondents were from organizations of less than 1,000 employees, only about one in four worked in organizations of more than 5,000 employees.

Type of Respondent Organizations

Many types of organizations were represented in this survey. The largest percent of respondents were from the field of education (20 percent). Other respondents worked in areas such as information technology (15 percent), financial services/insurance (13 percent), consulting or contracting (11 percent), industrial/manufacturing (10 percent), or government (7 percent) settings. A few worked in health services (5 percent), military institutions (3 percent), non-profit associations and organizations (2 percent), hospitality (2 percent), transportation (1 percent), and retail management (1 percent). Nearly ten percent were from other types of instructional situations or were not specific about the type of public or private institution they worked in.

Years of Corporate Training, Knowledge Management, or Related Experience

Most respondents in this sample had backgrounds in corporate training, knowledge management, or related areas. In fact, nearly two-thirds had six or more years of experience.

More specifically, 2 percent had less than 1 year of experience, 10 percent had 1 to 2 years of experience, 23 percent had 3 to 5 years of experience, 21 percent had 6 to10 years of experience, 31 percent had 11 to 20 years of experience, and 13 percent had more than 20 years of experience.

Respondent's Age, Gender, Job Function, and Educational Background

The age of survey respondents was also quite varied. Nearly one-fourth of the participants were under age 36, half were 36 to 50 years old, and slightly more than one-quarter were over age 50.

Fifty-two percent of the respondents were females.

Most respondents (84 percent) were in formal training or instructional design positions or had similar responsibilities. Almost 50 percent had instructional design or program development responsibilities. Nearly 30 percent were instructors or trainers, 27 percent were training managers, 20 percent were training evaluators, and 14 percent were training directors (note that respondents could select more than one category). Somewhat fewer were knowledge managers (9 percent), human resource personnel (5 percent), Chief Learning Officers (4 percent), or Chief Technology Officers (2 percent). Another fifteen percent of survey respondents were in other job functions such as technical writers, directors of e-learning, quality managers, learning technology consultants, or Chief Executive Officers.

The pool of respondents was fairly well educated. In terms of highest degree held, 3 percent had high school diplomas, 8 percent obtained some type of professional certification beyond high school, 35 percent possessed bachelor's degrees, 41 percent had master's degrees, 8 percent held advanced degrees or were ABD, and the remaining 5 percent had earned a doctoral degree.

Training in the Organization (see 3.2)

Existence of Training Department

Eighty percent of respondent organizations had a training department.

Training Aligned with Key Functions?

More than 70 percent of respondents either agreed or strongly agreed that training activities were aligned with key functions of their organization. However, nearly 20 percent disagreed with this statement and the remaining ten percent were unsure.

Methods to Deliver Training

Most respondent organizations (98 percent) still relied on conventional instructor-led training.

Nearly three-fourths of these organizations also used intranet/Internet-based delivery systems for some of its training. In addition, 68 percent employed multimedia programs for aspects of its training, 52 percent videotape, and 46 percent paper-based correspondence courses as part of their training. Seventeen percent utilized other technologies such as satellite-based systems, audiotapes, virtual reality, interactive television, conferences, and print media.

Online Training in the Organization (see 3.3)

Interest in and Commitment to Web-Based Learning

More than 70 percent of respondents agreed or strongly agreed that their organizations were committed to learning in general. Just 16 percent disagreed or strongly disagreed with that statement and another 14 percent were unsure.

Even more, 75 percent indicated that their organizations were committed to e-learning. Just 3 percent strongly disagreed and another 11 percent disagreed with that statement.

However, only about 50 percent of respondent organizations were committed to Web-based learning. More interestingly, 30 percent simply did not know if their organization was committed to Web-based learning and another 20 percent either disagreed or strongly disagreed.

Interest in Web-based learning varied by industry sector. Those industries with high interest included consulting (85 percent), financial services (84 percent), information technology (80 percent), health services (80 percent), and education (75 percent). Organizations with lower interest included industrial/manufacturing (65 percent) and government (50 percent).

Commitment to Web-based learning had a slightly different pattern. Industries with high commitment included financial services and insurance (64 percent), education (64 percent), information technology (59 percent), and consulting (59 percent). Less commitment was expressed by those in industrial/manufacturing (40 percent), government (39 percent), and health services (30 percent). Some of the industry sectors had less than 20 respondents, however.

Interest in Products that Supported Traditional Instruction or Fully Delivered Web-Based Learning

Seventy-four percent of respondents indicated that their organization was interested in Web-based products that supported instructor-led (i.e., traditional classroom-based) instruction. Only ten percent were not interested; the balance were unsure.

Slightly fewer, seventy-one percent, agreed or strongly agreed that their organization was interested in Web-based products to deliver courses entirely online.

Why Interested in Web-Based Learning

Respondents were primarily interested in Web-based learning

because it increased access to learning (86 percent). Two-thirds of respondents noted that growth in employee skills, ability to track learner progress through a learning management system, and increased job performance were key reasons for their interest. Slightly more than half perceived distinct advantages of Web-based learning including the standardization of content and assessment procedures, enhanced interactivity, and learner satisfaction. Employee retention and keeping up with the competition were aspects chosen by approximately one-fourth of respondents. Other responses included cost savings, reduced travel time, greater flexibility in delivery, and the timeliness of such training.

Organizational Support for Web-Based Courses

Less than one-third of respondents felt that their organization provided enough training, resources, and support for effectively delivering Web-based courses. In fact, 54 percent disagreed, while 15 percent were unsure.

Purpose of Web-Based Learning

Most organizations were using Web-based learning as an alternative to instructor-led courses (66 percent) or as a supplement to traditional instructor-led training courses (53 percent). About one-fourth used it as a follow-up to live instruction. One in five used the Web as the sole source for learning.

Types of Online Training

The most prevalent skills taught online were computer applications and software skills (64 percent) as well as technical skills (50 percent). The next most popular type of online training concerned job-related skill development (45 percent). Communication skills, computer systems or programming skills, and management or supervisory experience were all offered at roughly 3 in 10 organizations surveyed. Around one-fourth offered online training for personal growth as well as customer service skills. They tended

not to use the Web for sales or marketing skills (16 percent) or executive education (13 percent).

In-House Development of Web Training

Seventeen percent of respondent organizations did not develop any aspects of their Web-based training internally. Another 25 percent of these organizations farmed out at least 75 percent of their Web-based training. Fifteen percent outsourced between half and 75 percent of their Web-based training efforts. At the same time, 42 percent developed more than half of their training internally. Nearly one-fourth generated all their training internally.

Different aspects of Web-based learning initiatives were developed in-house. Of those organizations developing at least some online training internally, 92 percent were generating online content, 76 percent were involved in the implementation of training, 74 percent were developing evaluation programs and procedures, and 60 percent were creating online delivery systems. These findings differed significantly across the size of respondent organization.

Numerous limitations with their current courseware systems or tools were noted (e.g., complex, unreliable, slow connections, technological limitations, boring, and lacking in interactivity).

Tools deemed superior were reliable, scalable, comprehensive, reasonably priced, intuitive, flexible, and fast.

Out-Sourced Web Training

More than half of the respondents (54 percent) indicated that their organization outsourced at least some Web-based training. Forty percent did not outsource any online training.

Nearly 70 percent of organizations were outsourcing at least part of their content development. In addition, 66 percent outsourced the online delivery system, 44 percent outsourced online implementation efforts (e.g., monitoring, instructing, supporting),

and 32 percent outsourced the online evaluations.

Seventy-six percent of organizations with over 1,000 employees outsourced some of their Web-based learning efforts, compared to only 60 percent of organizations with less than 1,000 employees.

More than 35 different external vendors were mentioned for the development and delivery of Web-based instruction, but no single vendor was used by more than one-fourth of survey respondent organizations.

Online Training Assessment in the Organization (see 3.4)

Measuring the Impact of Online Training

Nearly 60 percent of survey respondents indicated that their organization failed to conduct formal evaluations of Web-based learning.

Of those that evaluated online learning, 79 employed simple assessments of student reactions (Kirkpatrick's Level 1), 61 percent measured participant change in knowledge, skill, or attitude (Kirkpatrick's Level 2), 47 percent assessed participant job performance improvement (Kirkpatrick's Level 3), and 30 percent analyzed results such as the return on investment (Kirkpatrick's Level 4).

Open-ended final comments from respondents about assessment practices indicated that many organizations had just begun to adopt online training tools and associated assessment practices. Those that did assess the impact of online training remained at the lower level of the Kirkpatrick model. In addition, time to competency and time to market were among the methods offered as alternatives to traditional ROI calculations.

Current Issues and Attitudes Related to E-

Learning (see 3.5)

Course Ownership and Guidelines

In stark contrast to our earlier study of college instructors, three-fourths of the survey respondents agreed that their organization owned the courses developed for online instruction. In fact, only 9 percent of the respondents felt that the trainer or instructor owned the online courses, while 17 percent were not sure.

Forty-seven percent of respondents agreed or strongly agreed that their organization had clear guidelines about the ownership of course materials. However, one-fourth of survey participants were not sure about the ownership policies within their organization and another 28 percent disagreed or strongly disagreed that their organization had clear guidelines.

Reusable Learning Objects

More than two-thirds of respondents worked in organizations that were interested in the use of learning or knowledge objects in online learning.

Despite the recent emergence of this field, only 14 percent of the respondents worked in organizations that were not interested in learning or knowledge objects. Another 17 percent of respondents not sure if their organization was interested in this area.

Quality of Certificates and Degrees Earned Online

Thirty-seven percent of respondents worked in organizations that valued online certificates as much as certificates earned in traditional classroom settings. However, 43 percent were not sure how their organization would react to online certificates and the remaining 20 percent worked within organizations that preferred the traditional delivery of certificate programs.

Somewhat fewer, 27 percent, worked in organizations that valued

degrees earned online as much as those earned in traditional classrooms. Once again, over forty percent were unsure now their organization would react. Finally, 36 percent worked in organizations that preferred degrees obtained from traditional face-to-face instruction.

Usefulness of Web-Based Tools for Teaching and Learning (see 3.6)

Useful Online Course Tools

The survey respondents were asked to rate the degree of usefulness (i.e., low, medium, or high) for 25 e-learning tools and resources, while also indicating whether they or their organization actually used such tools. The respondents generally felt that most online course tools were highly useful.

Commercial courseware was deemed highly useful by 66 percent of respondents and was actually used by 57 percent of their organizations.

Other highly popular course tools included online database tools (60 percent rated as highly useful and 66 percent actually used), file uploading and downloading tools (59 percent deemed highly useful and 62 percent actually used), online course evaluations (55 deemed highly useful and 56 percent actually used), and online quizzes and tests (54 percent noted as highly useful and 61 percent actually used).

Tools for posting online cases or problems corresponding to course material were rated as highly useful by 39 percent of the survey respondents, while only 34 percent actually used them.

In general, the percent of respondents who viewed online course tools as highly useful was lower than the percent that actually used them. Therefore, the development of such tools may not be a high priority for software companies since it does not appear to be an area of high growth.

Growth Potential of Online Course Tools

Growth potential (i.e., the difference between tools rated as highly useful by survey respondents and the percent of those particular individuals actually using them) was highest for online course evaluation tools (20 percent gap) and courseware tools (19 percent gap), and online quiz and testing tools (18 percent).

Less growth was predicted for software tools for posting cases, questions, and problems (14 percent), file uploading and downloading (14 percent), and online databases (12 percent).

Useful Student-Oriented Tools

Nearly all student-oriented tools were not employed as widely as respondents would have hoped. Respondent ratings of “highly useful” equaled or surpassed actual use for all tools listed. Hence, this was an area marked for potential growth.

Learner collaboration tools fared best. Tools for learners to share best practices were rated as highly useful by 60 percent of the respondents, but were actually used by only 46 percent of their organizations. Tools for learner collaboration and teamwork were rated as highly useful by 54 percent and actually used by 41 percent.

Perceptions of asynchronous discussion tools as highly useful matched their actual use at 42 percent. Real-time chat tools, however, were only deemed highly useful by 30 percent of respondent organizations and actually used by 27 percent of them.

Learner profile or general background tools were rated as highly useful by 36 percent of respondents and used by just 25 percent of their organizations.

Growth Potential of Student-Oriented Collaborative Tools

There were fairly substantive differences between perceived usefulness and actual use for student collaboration and sharing tools. Web-based learning tools with high growth potential included those that allowed learners to share best practices (29 percent) and tools for learner online collaboration and partnership (25 percent).

Modest growth was projected for tools that provided learner profiles (19 percent), real-time forums or synchronous chats (17 percent), and asynchronous discussion forums (15 percent).

Useful Instructor-Oriented Tools

All instructor-oriented tools were considered highly usable. In fact, high usefulness ratings were higher than actual use ratings for all these tools.

Online demonstration tools were viewed as highly useful by 52 percent of respondents. About 47 percent of respondent organizations actually used these tools.

Instructor feedback and annotation tools were used by only 33 percent of respondent organizations, but 48 percent deemed them highly useful.

Online critical and creative thinking activities that instructors might incorporate into online courses were perceived as highly useful by 47 percent of survey participants, but only 28 percent of their organizations actually were using them.

Tools for trainers to share tasks and activities were rated as highly useful by 45 percent of respondents, but were used by only 26 percent of them.

Trainer profile tools were deemed highly useful by just one-fourth of respondents and a similar percentage actually used them.

Growth Potential of Instructor-Oriented Collaborative Tools

A measure of potential tool growth was calculated for all tools based on differences between perceived usefulness and actual use. Of all areas surveyed here, the highest growth area was for instructor collaboration and sharing tools. Potential high growth areas included tools for trainers to share tasks and activities (30 percent), online tools for critical and creative thinking (29 percent), instructor feedback, commenting, and annotation tools (28 percent), and online technology demonstration tools (22 percent).

Modest growth was projected for trainer profile tools (15 percent).

Useful Web-Resources for Online Training

Web resources were less geared for growth.

Search engines were used by 83 percent of the respondent organizations for instructional purposes, but only 56 percent found them highly useful.

Digital libraries and online research guides were also viewed as highly useful by 56 percent of respondents. Sixty-eight percent of them noted that their organization used them in Web-based instruction.

Web resources specific to training in one’s field were deemed highly useful by 54 percent of respondents and were actually used by 58 percent of the organizations surveyed.

Unlike the high support in our previous survey of college faculty, only forty-six percent of respondents perceived article and journal links as highly useful. Still, 57 percent were actually using such a feature.

Other online resources with more modest support included online glossaries (41 percent perceived high usefulness, 40 percent actually used them), general training resources (33 percent high usefulness, 45 percent actual use), book recommendations (30

percent high usefulness, 44 percent actual use), Web link recommendations (22 percent high usefulness, 29 percent actual use), and online newsgroups (20 percent high usefulness, 30 percent actual use).

Growth Potential of Web Resources

Web resources had the lowest perceived growth potential. The only item projected for high growth related to resources specific to training in one's field (21 percent).

Modest growth was predicted for online glossaries with Web examples (17 percent).

Lower growth was predicted for general training resources (12 percent), digital libraries and online research guides (11 percent), article and journal link tools (10 percent), Web link suggestion tools (9 percent), book recommendation tools (7 percent), newsgroups (7 percent), and search engines (3 percent).

Pedagogical Practices for Corporate E-Learning (see 3.7)

Instructional Approaches

Respondents rated 12 approaches to instruction according to whether they were best supported by online or traditional environments or were equally supported by these two environments.

Respondents slightly favored online environments for exploratory or discovery learning (35 percent versus 15 percent), student-generated content (26 percent versus 18 percent), and case-based activities (18 percent versus 12 percent).

They slightly favored traditional instructional settings over online ones for problem-based learning (21 percent versus 13 percent) and modeling of the solution process (28 percent versus 12 percent).

Guided learning was nearly equally supported in both settings.

Traditional environments received more support for group problem solving and collaborative tasks (42 percent versus 5 percent), Socratic questioning (44 percent versus 6 percent), role-play and simulations (49 versus 8 percent), discussion (46 versus 4 percent), coaching or mentoring (49 percent versus 5 percent), and lecturing (54 percent versus 4 percent). Still, at least half of the respondents felt that methods such as Socratic questioning and discussion would be equally supported in each type of environment.

Motivational Characteristics of Web-Based Learning

Respondents rated the importance of 13 motivational principles in Web-based learning situations. Four of these principles were rated as highly important by more than 50 percent of the respondents, including relevant and meaningful materials (88 percent), timely and responsive feedback (78 percent), goal-driven and product-oriented activities (61 percent), and personal growth (51 percent).

Motivational principles with more modest support as highly important included flexibility in activities (49 percent), interactive and collaborative activities (47 percent), a sense of variety and novelty in activities (45 percent), engaging in discussion that involves multiple participants (41 percent), and a supportive community of learners (41 percent).

Lower still, were work-related incentives (wage increases, rewards, etc.) which 31 percent viewed as highly important, a safe climate with a sense of belongingness (29 percent), and online tension, conflict, and controversy (7 percent).

Specific Motivational Techniques

Respondents also rated twelve specific motivational techniques that they found highly engaging and useful. The two techniques receiving more than 50 percent support from respondents as highly

engaging and useful were cases or job reflections (59 percent) and brainstorming or idea sharing (53 percent).

Group or team projects were considered highly engaging and useful by 41 percent of respondents, while electronic guests or mentors received slightly less support (34 percent) as highly engaging and useful.

The remaining eight techniques received less than one-third support as highly engaging and useful. These included students leading discussion (32 percent), online symposia and expert panels (29 percent), online voting or polling activities (29 percent), e-mail pals and peer review (28 percent), role-play and debates (26 percent), article discussions and online critiques (26 percent), displaying student final products online (23 percent), and ice breakers and social tasks (17 percent).

Future Online Teaching Situation (see 3.8)

Predicted Online Teaching Situation

Of those who anticipated teaching or training during the next decade, online training is predicted to significantly increase. While more than half of the respondents (58 percent) viewed it as taking up 1-25 percent of their training time in the next year, 66 percent felt that it will require at least 26-50 percent of their time in just two years. Within 5 years, nearly 53 percent perceived that Web-based learning would command at least 50 percent of their training and instructional load. Within ten years, 67 percent of respondents felt that their instructional load would be at least 50 percent online.

By the end of the decade nearly everyone anticipated that they would be training online; at least to some degree.

Females expected to devote more instructional time to Web-based learning during the next decade than males; the differences were significant during the next two years.

Freelance Instruction

In parallel to the college instructor survey, only 19 percent of the respondents had been freelance or adjunct instructors on the Web in the past.

Over 80 percent, however, were interested in teaching as freelance or adjunct online instructors in the next five years. Such findings indicate that services offered by freelance instructors may explode during the coming decade.

Obstacles Related to Web-Based Learning (see 3.9)

Obstacles to Web-Based Learning

The primary cultural or organizational obstacle to Web-based learning, according to the respondents, was the perception of high cost (44 percent).

Other serious cultural/organizational inhibitors to Web-based teaching and learning included instructor time to prepare courses (36 percent), resistance to technology (33 percent), the lack of organizational support (32), difficulty measuring ROI (27 percent), and a lack of training on how to use the Web (25 percent).

One in five survey respondents pointed to a lack of interest as a barrier.

Factors less problematic than expected included lack of time to learn to use the Web (14 percent) and time required of instructors to deliver online courses (10 percent).

Forty-one percent of respondents identified bandwidth as the major technological obstacle to Web-based learning in their organization.

Other technological obstacles included a lack of support for technical problems and assistance with courseware development

(36 percent), firewalls (32 percent), a lack of hardware (30 percent), a lack of standards (24 percent), a shortage of equipment and software to display the Web (20 percent), a lack of interactivity (19 percent), and outdated or inadequate software (18 percent).

Open-ended comments from survey participants were fairly blunt about the cultural and organizational factors limiting the adoption of the Web for training. Some respondents mentioned problems and issues such as a lack of vision, Web access and reliability, lack of time, inadequate funding, generation gaps, system limitations, and administrative bias and ignorance. Overall, survey respondents tended to focus on cultural and organizational inhibitors such as administrative vision and leadership rather than on technological concerns.

Supports Related to Web-Based Learning (see 3.10)

Support for Course Designers and Developers

Designers and developers of Web-based courses were provided with a variety of training options. Conferences (33 percent) and workshops (31 percent) were the most popular. Slightly fewer respondent organizations provided access to experts or consultants (29 percent). Approximately one-fourth accessed vendors for training. Another fourth utilized Web-based courses for designer and developer training.

Only 22 percent of respondents were aware of Web-based training leading to certification of those designing or developing Web-based courses. Sixty-three percent of respondents indicated that online training did not lead to such certification, while another 15 percent simply did not know. A few relied on special university classes, internal specialists, or self-study for professional training.

Support for Learners

Three-fourths of respondents indicated that learners in their

organizations accessed Web-based courses and content through their office computers. Slightly over 20 percent of these organizations relied on employee access from home. Only 2 percent relied on road access, and this related primarily to sales personnel.

The primary resources organizations provided to support online learners were e-mail (54 percent) and desktop workstations (49 percent). The next most frequent forms of learner online support were online help (38 percent) and online tutorials (33 percent). Both laptop computers and computer labs were resources provided by about 30 percent of the organizations in this survey. Fifteen percent of organizations offered 24-hour phone support. Another 15 percent offered no support whatsoever.

Number of Languages for Online Training

Thirty-five percent of respondents were aware of their organizations' efforts to develop Web courses in multiple languages. Fifty-three percent of respondents worked at organizations that were not interested or involved in such language support. The remaining twelve percent simply could not answer this question.

Of the 68 respondents working in organizations attempting to address this issue, nearly 40 percent were still limited to one language format, 13 percent offered courses in 2 different languages, 4 percent in 3 languages, 15 percent in 4-6 languages, 6 percent in 7-10 languages, and nearly 5 percent in more than 10 languages. It was assumed that the eighteen percent who noted that the question did not apply were in the initial planning or development stages regarding this aspect of e-learning.

Organizations of over 1,000 employees were significantly more likely to be developing multiple language Web-based courses than smaller organizations.

Completion of Web-Based Courses

Reported course completion rates were fairly dismal. First of all, 55 percent of survey respondents either did not even know their completion rates or simply did not track them.

Twenty-two percent of respondents worked in organizations where fewer than one-fourth of all students completed their Web-based courses. Another 14 percent experienced slightly higher success with 26-50 percent of learners completing their online courses. Sixteen percent noted that 50-69 percent of their students successfully completed their online courses.

On the other hand, nearly half of the respondents indicated that at least 70 percent of learners completed their online courses. Only two percent, however, experienced 100 percent completion rates.

Both lack of time (46 percent) and lack of incentives (29 percent) were key reasons cited as to why learners dropped online courses. While poorly designed courses were mentioned by 17 percent of respondents, only 2 percent indicated that costs inhibited course completion.

There were numerous other reasons cited for the high attrition rates including employee turnover, scheduling conflicts, lack of relevancy, dropped connections, procrastination, supervisor expectations, and learners acquiring what they needed to know and then dropping the course.

Incentives for Completion

Part of the online course completion problem appeared attributable to the lack of incentives. In fact, 56 percent of the respondents pointed out that their organization provided no incentives, and of those that did, the most frequent incentive was increased job responsibility (18 percent).

Other types of incentives included public recognition (15 percent), credits toward a degree or certification (11 percent), increased job

security (9 percent), additional salary (8 percent), and promotion (7 percent).

In open-ended responses, a couple of survey participants alluded to the importance of bonuses and other financial incentives.

Online Communities, Services, and Resources Needed (see 3.11)

Online Communities for Resource Sharing

Respondents were asked about tools and resources that would interest them in a free community for the sharing of course resources and instructional ideas. The most popular features of such a community were online articles and newsletters (76 percent), professional links and resources (73 percent), expert advice (70 percent), Web resource sharing tools (70 percent), and courses, catalogs, and products (66 percent).

Several instruction-oriented features were also rated highly. For instance, respondents wanted answers to teaching problems (65 percent), tools for sharing stories of instructional experiences (59 percent), opportunities to share pedagogical ideas (55 percent), and prerated Web resources intended for corporate trainers (52 percent).

Other features with modest support included online trainer profiles (49 percent), online discussion and chat tool options (45 percent), and online book reviews (43 percent).

Useful Web-Based Services, Resources, and Information

There was a myriad of Web-based services, resources, and information that respondents would like to have access to as a trainer or instructor.

The top rated online service was online course design and development help (including guides, courses, workshops, newsletters, tutorials, and conferences). More than 80 percent of

respondents acknowledged the importance of such resources. In addition, 72 percent wanted online teaching help (e.g., courses, guides, tutorials, workshops, conferences, etc.), while 63 percent indicated that online mentoring and tutoring services would be valuable.

Other popular requests included various technology tools and resources. For instance, most respondents asked for Web-based survey and evaluation resources (75 percent), Web-based simulations and experiments (74 percent), and downloadable trial and demonstration software (72 percent).

Other Web-based resources that respondents were interested in included online access to job opportunities (51 percent), courseware company listings (54 percent), bookstores (54 percent), conference information (57 percent), freelance teaching possibilities (61 percent), online course listings (63 percent), workshops and institutes (65 percent), and library and research resources (67 percent).

Given that all these resources received more than 50 percent high support from the respondents, support portals and information resources appear to be ripe for growth. Clearly, trainers want fast and efficient access to information, resources, and instructional technologies.

Final Comments from Respondents (see 3.12)

Final Comments from Respondents

Several respondents noted a need for upper management support and vision. Others simply wanted better instructional design support. Still others mentioned the need for more interactive and effective Web-based learning tools.

There was high interest in the findings of this survey. In fact, eighty-five percent of respondents wanted a copy of the final report.

There were no problems with the survey other than a few complaints about the overall length.

Recommendations Based on Findings (see 4.0)

Based on these findings, fifteen key recommendations were generated for trainers, training managers, tool developers, and researchers. These recommendations are listed below according to the order in which they are discussed in Part III of this survey report. In addition, a few future trends were noted.

Focused Research (see Section 3.1): Respondents to this survey represented a wide range of organizations, job functions, and experiences. Future research might target particular industries, sizes of organizations, or job functions. Such research will help with product marketing and tool development efforts.

Longitudinal Reports (see Section 3.2 and 3.3): As with other reports, the data reported here clearly showed that the Web is emerging as one of the preferred methods of employee training. Longitudinal research might explore these trends over the coming years or decades. For instance, such research might track attitudes about organizational support structures as well as employee attitudes and achievement related to these new forms of delivering training. It might also longitudinally explore differences between organizational interest and commitment in Web-based learning, as well as the types of online delivery methods utilized and promoted. Additional research might reveal where and when blended approaches are preferred to either fully online approaches or conventional face-to-face training. Other possible longitudinal variables include the reasons various organizations are interested in Web-based training, the types of training offered, and the chief reasons behind outsourcing the development and delivery of Web-based content.

Evaluation and Assessment (see Section 3.4): Alternative online assessment measures need to be developed that address employee

skills and competencies. Given the findings of this survey, organizations should evaluate the completion rates of their courses as well as the motivational characteristics embedded within them. In addition, time to competency measures might be added to, or in some cases, replace traditional ROI measures. Along with changes in assessment practices, there is a need for comprehensive documents that survey the forms of online assessment and evaluation commonly used. Such documents might also provide case examples of success stories and potential problems in assessment.

Use of Learning Objects (see Section 3.5 and 3.11): Organizations should consider how the use of learning objects in instruction relates to their strategic planning, including their knowledge management efforts. Such planning documents are vital since the use of reusable learning objects in online instruction will proliferate during the coming decade. Of course, the growth of this field will depend on the development of effective standards for shareable courseware. Decisions must be made regarding the size and type of objects shared, systems and tools used for sharing, and the ownership and use of learning objects.

Online Learning Policies and Procedures (see Section 3.5): Most organizations still need to develop strategic plans related to e-learning. They might develop guidelines as to acceptable levels of student course completion, skill retention, employee satisfaction, and return on investment. In some instances, they will need to develop clear policies regarding the ownership of online course materials and applicable royalties. Organizations with significant training concerns might adopt policies related to instructors and other employees who provide freelance online instruction for other institutions or organizations. They might also attempt to clearly articulate why certain courseware tools, policies, and expectations have been adopted related to Web-based instruction.

High Growth Tool Development Efforts (see Sections 3.6 and 3.7): Few online software tools address the diversity of instructional

and learning needs mentioned by participants of this survey. High growth areas revealed in this survey included tools for online course evaluation, instructor demonstrations, student task collaboration as well as story telling, trainer task collaboration, learner critical and creative thinking, instructor feedback and annotations, and Web resources specific to one's field. As both this and our previous survey report indicated, there is a dearth of pedagogically interactive and motivating activities within Web-based learning environments. The first organization to develop a suite of pedagogical tools or templates addressing motivation, teamwork, and critical or creative thinking (e.g., tools for debate, role-play, brainstorming, timeline, etc.) will add significant value to the present state of learning management systems and instructional courseware. Finally, as online learning globally extends around the world, tools for language support will be increasingly requested and required.

Tool Development Partnerships (see Sections 3.6 and 3.7): Courseware companies might seek partnerships for tool development and testing with universities and institutes that have well-established learning technology, information science, and instructional design departments. In serving as a testbed for emerging tools, technology centers at those universities and institutes can research and showcase product innovations. They might also spearhead significant research grant proposals and help form institutional consortia. With numerous technology, content, and service providers, partnerships among firms and universities can bridge knowledge gaps and provide comprehensive as well as competitive solutions.

Training the Trainer (see Section 3.6, 3.7, 3.8, and 3.11): Corporations and other learning organizations need to consider not just the learners but, if facilitators, mentors, or synchronous instructors are utilized, the trainers of those learners. It will be difficult to train in the online world without a new skill set. External supports such as Web resources, online "Train the Trainer" courses and institutes, asynchronous discussion forums

and communities, online mentoring, and noted experts and consultants can offer instructional assistance. Internally, intranets can provide rich training resources and alternative avenues of such support. In effect, instructional design support and guidelines can help reduce the tension felt by those teaching online for the first time. Of course, adequate time to learn the new systems and tools is vital. While there are masses of available training resources, the use of Web-based training courses and resources is a growing area for e-learning service companies.

Freelance Instructors and Designers (see Section 3.8 and 3.11): Our survey respondents predicted fast growth for freelance instruction. How their instruction, training, and consulting wares are bartered online remains an open issue, however. Already one can list e-learning needs using “request for proposal” forms from THINQ as well as hire experts from an array of disciplines listed online at Hungry Minds University. Other innovative organizations might create tools or systems that foster instructor exchange programs, trainer-to-trainer online mentoring, trainer online job-sharing, instructional resource exchanges, and instructor communities in the area of e-learning. Expert pools and knowledge exchange programs might be common in the near future not only for corporate trainers and instructors but instructional designers as well.

Organizational Promotion (see Sections 3.09 and 3.10): Employees need to be aware of their online learning options. Marketing new courses with testimonials and up-to-date information will help convince people to take the online course. There should also be incentives for trainers, instructors, and instructional designers for high quality course design and delivery.

Organizational Support (see Sections 3.09 and 3.10): An organization must support a range of people within its e-learning initiatives. For instance, online learners need adequate technology access and organizational policies that help them to complete their online course requirements. Instructional designers new to e-

learning require training, system support, and perhaps even certification. At the same time, online trainers need new skills as well as access to examples of best pedagogical practices for synchronous and asynchronous delivery systems. Finally, training evaluators need access to data from e-learning courses and events. All these e-learning stakeholders and participants demand attention and support for e-learning success.

Information Portals (see Section 3.11): The survey uncovered a need for online resources such as newsletters, information on training institutes, course catalogs, library resources, survey and evaluation tools, and course design guidelines for online training and instruction. As this area emerges, there is a pressing need to make sense of the available courses, course platforms or learner-management systems, Web-based delivery tools, and online resources. While a number of e-learning information portals and reports are emerging, there remain many areas for development, including the documentation of the companies in this area, the sharing of best practices and online documents, and the generation of online trainer ratings.

Online Communities (see Section 3.11): The survey results also exposed a need for an online community of instructors and instructional designers. Trainers and instructors want expert advice, answers to teaching problems, stories of online experiences, and mentoring services. While primitive forms of such communities exist, none address all these needs.

Access to Informed Research (see Section 3.1-3.12): Studies of Web-based learning in training settings are not as readily available as reports from higher education (Bonk & Wisher, 2000). However, summary reports from higher education, the military, and non-profit institutes can inform people engaged in the development of online training in corporate settings. Corporations and training organizations might also sponsor research and white papers in areas where gaps exist in the literature. Such research might also target perceived e-learning obstacles, assessment practices, or adult

motivation to complete online courses. Training departments might partner with universities, consultants, or software development companies in these efforts. Where possible, the results of such research should be shared within the e-learning community.

Other Online Learning Reports (see Section 3.12): Other than perhaps Brandon-Hall.com and the Masie Center, few firms provide consistent and comprehensive access to e-learning reports and related resources. E-learning reports and white papers can help organizations understand complex terminology, provide vendor guidance, and summarize research and development efforts. The type of tools and content available for Web-based instruction can be confusing. Additional assistance in this area would be welcome.

Future Trends. There are many exciting as well as challenging directions for online training in this online world. While accurate predictions of next steps are difficult, a dozen recently popular trends and topics are briefly discussed at the end of this report including mobile learning, virtual universities, learning objects, electronic books, online standards, knowledge management, online mentoring, and intelligent tutors.

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