WEB-BASED CURRICULUM DELIVERY

by

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ABSTRACT

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This study addresses web-based curriculum delivery presently most popular in education, business and industry. Review of the literature revealed the latest online formats and strategies employed. Since online curriculum has no boundaries, a global audience was selected for responses via an online survey. The audience was selected from three listserv subscribers. Results of the survey identified the most popular web-based curriculum delivery method being employed was face-to-face supplemented with online instruction.

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Chapter 1

Introduction

The momentum of distant education with alternative delivery methodology is pressuring traditional education to make changes. Technology has become less expensive and more readily available for educational institutions. The revolution/evolution of the WEB has offered educational institutions the opportunity to reach more students beyond the campus walls, serve their flexible time schedules, and better personalize instructional packages. We are in a major transition of educational change!

Web-based curriculum and interactive instruction alters the role of the educator. The very nature of interactive student centered instruction delivered via the Internet and supplemented with CBT (computer based training), teleconferencing, and database driven networked applications, challenges traditional classroom method of teaching/learning. Yet, yesterdays learning theories, though developed within a traditional setting, are likely to still be of value for interactive online instruction. Many are speculating that there will be major shifts from traditional classroom instruction to WEB/CBT instruction in only a few years. The movement for change is gaining forceful momentum each day as thousands of prospective students enter the cyber world.

There is little wonder that the precepts underlying traditional education are questionable Compare a typical traditional classroom instruction to one delivered via the Internet. In a traditional classroom setting course content is delivered using the lecture mode by a teacher while students sit at their desks listening and perhaps taking notes. Reading assignments are required. If there are lab activities then they are performed by following written systematic procedures outlined step-by-step for the students. Typically assessment to determine if learning has taken place is performed by a test

composed of written questions (Strommen, 1992,; Lincoln, 1992,; Akyalcin,1997). In contrast content delivered in a web-based curriculum (curriculum delivered via WEB) is quite different. The subject presented is in the context of a student-organized project. Students explore how components of the topic interact; they hypotheses; they revise hypotheses; they make observations. Students challenged are to explore various solutions to an assignment and note how the solutions interact. The assessment is a product of the experience or "best solution" presented to the teacher for feedback. This becomes part of the student's portfolio. In this web based process students are actually constructing their own knowledge base while the teacher acts as a facilitator (Akyalcin,1997). An outcome of this new web-based curriculum delivery model is rather than objectivism in instructional design there is more focus on constructivism (Wilson, 1997). This method of curriculum delivery is compatible with the learning experience of young adults. Young adults have grown up with remote controls, television, videotapes, and computer simulation games. Exposure to kiosks, arcades, talking toys with movement and blinking lights are just a few experiences that are part of the typical experience of well children. All of these examples have something in common…they all exposed young learners to environments where they controlled the flow and access of information (Strommen & Lincoln, 1992).

There is a plethora of testimonials from professionals, educators, and young children regarding the attractiveness and desirability of web-based curriculum. Young children are embracing the new way of learning. For example,

> "Students at Enid High School take learning into their own hands and lead their K-12 community to the Internet …small groups of students traveling to all 15 elementary and junior high schools and working with administrators, teachers, and students to make Web pages for individual programs." (Sacket 1997, p.1).

Secondary educational institutions are not the only ones that forced to change even though they have not really changed for the past 100 years (Strommen & Lincoln, 1992). Training departments in industry and training businesses are undergoing dynamic changes brought on by web-based curriculum delivery methods. Many corporations see great promise and cost saving in this mode of curriculum delivery; web based training (WBT). For this reason business and industry were the first to lead the change from traditional to web-based curriculum delivery methods. Data Corp, a Massachusetts research firm, predicts that corporate spending on web-based training will grow 140 percent annually over the next five years, with 42 percent of all training delivered over the Internet or Intranets by 2002 (Inside Technology Training,1998). Business and Industry training guru Elloit Masie warns, "It's coming, on-line learning is making a rapid transition from concept to reality" (Masie,1998). Apparently, what are causing these changes are the definite advantages to delivering curriculum as web-based curriculum. It is delivered on demand, anywhere, anytime, as long as needed, it is cost effective, and customer satisfying. Being able to customize instruction, from a library of modules, and deliver it just in time or on the fly via one instructor instructing multiple sites simultaneously saves money (Koonce, 1999; Masie, 1998). Employers want instructional delivery that reduces cost for employees attending courses or seminars (Wiesner, 1996).

Post-secondary institutions such as universities are not immune to change. Even infamous well-established gurus in the management world such as Peter Drucker are sounding warnings. "Universities won't survive. The future is outside the traditional campus, outside the traditional classroom. Distant learning is coming on fast" (Drucker,1997, p.1). Tom Abeles a resident Futurist of Sagacity Inc. gives an example of web-based curriculum delivery challenge to public universities:

> “In one city there exist a highly profitable, fully accredited, private institution purveying academic degrees, via a variety of “distant learning” vehicles. Across

> town is a major public university whose faculty is publicly hostile in their description of the quality of the private university. Closer examination reveals that many of the adjunct faculty of the private institution are individuals from the public university. Additionally, many of the stockholders in the private university's parent institution are counted amongst that same faculty. Furthermore, the private institution provides accreditation based on competencies, often in periods much less than the traditional semester, while the public institution still functions on accreditation by "seat time". Coincidentally, the graduates from both institutions are sought by the corporate world, which is dependent on a highly qualified workforce. The University is forced to compete in the global market place" (Abeles, 1998, p.4).

The Internet and web-based curriculum are forcing the change on universities. A change not only in the way curriculum is delivered but who delivers it. March 1999 there was born a total cyber-university that carries the same influence and accreditation (NCA) as traditionally established landmark universities. Pamela Pease President of Jones International University said:

> "The University of the Web is the first Cyber University to be granted regional accreditation by the North Central Association of Colleges and Schools (NCA). Accreditation was granted March 5, 1999 and confirms the legitimacy and quality of Jones International University academic programs" (Pease 1999, p.1).

At one time, an argument made that traditional classroom instruction was more effective than web based may have been creditable. Now that more research is showing up the argument is diminishing in strength. Does learning take place using web-based curriculum delivery? According to a study performed by California State University, "…virtual class

scored an average of 20 percent higher than the traditional class…"(Schutte,1996, p.3) so apparently learning is also effective (Black,1997). Interesting the study also showed that the target students improvised study groups to compensate for lack of being able to ask questions face to face with the professor (Schutte,1997).

Statement of the Problem:

Dynamic revolutionary changes in education, industry and commercial business are occurring almost overnight in web-based curriculum development and delivery! While some institutions in the world of industrial training and education are undergoing dynamic and rapid changes, the majority is exploring the option. Web-based delivery of instruction while being exciting is not a proven science. The topic 'what most popular web-based curriculum delivery is taking place currently within commercial business, industry and education' will be the focus of this study. Milwaukee Area Technical College's (MATC) Educational Research and Dissemination (ER&D) department is interested in gaining an answer to this question.

How well does this new curriculum delivery make educating students effectively? How effective instructionally is this curriculum delivery stand alone verses integrated within traditional curriculum delivery? Even though these questions are important, they are not the intent of this research. Moreover, each question can take lengthy research and studies to determine.

Purpose of the Study:

There is little research available identifying the most popular web-based curriculum delivery method currently employed by industry, commercial business and education. The purpose of this study is to determine what the most popular web-based curriculum delivery method is employed currently within commercial business, industry and education. Web-based instruction is occurring globally therefore this study will concentrate on an audience of employees of industry, commercial business and education located globally.

Objectives of the Study:

1. Identify most popular web-based curriculum delivery methods presently employed by post-secondary educational institutions, training in industry and training in business globally.
2. Determine if there is a difference in training method employed by post-secondary educational institutions, training departments within industry and training businesses.
3. Synthesize retrieved research on web-based curriculum delivery to determine if there is a different strategy employed by post-secondary education, commercial business and industry.
4. Draft recommendations for an Action Plan to get ER&D to disseminate study via its web site.

Significance of the Problem:

Technology employed in training and education changes overnight. Seemingly, better ways of delivering instruction to a wider audience at a cost saving and better suited for the student all serve as the impetus for change. For any institution not to be informed as to what constitutes the change and what effect the change will have on their business is like going to war and not knowing the enemy. Being well informed and visionary best prepares one for change. This includes keeping a pulse on what is most popular.

There are advantages or consequences, depending on ones view point, because of the advent of web-based curriculum. One commonly accepted advantage is better service for students. Education and training comes to the student at whatever time of day and length of time as required. A possible consequence for educational establishment is that training (business and industry) is becoming competitors who recognize no boundaries. Education appears to be changing to a service business that anyone can enter. Researching what web-based curriculum delivery is most popular by innovating forward trendsetters will enable sound decision making for any educational institution. Specifically the results of this study may help ER&D at MATC become an exemplary leader and a visionary component of MATC.

Limitations:

1. Technology changes overnight. By the time this research is completed changes will have occurred.
2. This research on web-based curriculum delivery methods will only identify the technology being used but will not validate the effectiveness of the technology.
3. Research will have to be obtained from resources that are most current and changing rather than resources that are more stable and established; traditional education.
4. Time and cost restraints placed upon researcher limits exposure to newest technology demonstrated in trade shows and seminars.
5. Educational institutions, training departments in industry and business may regard most popular methods as proprietary and competitive therefore may be less willing to participate.
6. The audience for this study is solicited from listserv users that represent a global audience. There is no assurance the participants will be evenly dispersed according to business, industry and education.

Definition of Terms:

Cyber - WWWebster Dictionary {On-Line} Available (http://www.m-w.com/cgi-bin/dictionary)
:computer **:** computer network <*cyber*space>

Objectivism – WWWebster Dictionary {On-Line} Available (http://www.m-w.com/cgi-bin/dictionary)
any of various theories asserting the validity of objective phenomena over subjective experience; *especially* **:**

Constructivism - WWWebster Dictionary {On-Line} Available (http://www.m-w.com/cgi-bin/dictionary)
: a nonobjective art movement originating in Russia and concerned with formal organization of planes and expression of volume in terms of modern industrial materials (as glass and plastic)
- **con·struc·tiv·ist** /-ˌvist/ *adjective or noun, often capitalized*

kiosk - WWWebster Dictionary {On-Line} Available (http://www.m-w.com/cgi-bin/dictionary)
(noun) -a small structure with one or more open sides that is used to vend merchandise (as newspapers) or services (as film developing)

Chapter II

Review Of Related Literature

Purpose of the Study:

There is little research available identifying the most popular web-based curriculum delivery methods. To identify these most popular methods will open an opportunity to hypothesize what delivery platforms and methodology is proving most effective for instruction in post-secondary institutions, industry and the business sector. Identifying the most popular methods will open further opportunities to hypothesize the audience makeup; age, gender, economic status.
The purpose of this study is to research and identify most popular web-based curriculum delivery method presently used within post-secondary educational institutions, training departments in industry and commercial businesses from a global audience.

Objectives of the Study:

1. Identify most popular web-based curriculum delivery methods presently employed by post-secondary educational institutions, training in industry and training in business globally.
2. Determine if there is a difference in training method employed by post-secondary educational institutions, training departments within industry and training businesses.
3. Synthesize retrieved research on web-based curriculum delivery to determine if there is a different strategy employed by post-secondary education, commercial business and industry.
4. Draft recommendations for an Action Plan to get ER&D to disseminate study via its web site.

Review Of Related Literature:

"People want to learn at their own pace, in their own time and in their own place," said Elloit Masie President of Masie Center (Masie,1998,p.1). Traditional classroom settings are not able to answer these needs. Classroom instruction needs walls in a building, seat for sitting a group of learners. It requires curriculum that serves need of the majority and delivers it in a sequential order. Traditional classrooms also need a schedule for when to start and end instruction. Additionally, it needs a physical teacher who directs learning and provides assessment to determine if learning took place. Web-based curriculum delivery methods change this whole setting. One of several courses available on-line from California Technology Assistance Project is a Course CTAP100 "Personal Proficiency with Technology" for educators. It provides 60 hours of instruction with 10 on-line modules completed entirely on-line at any time, any place, anywhere, and completed as quickly as desired. Or an instructor could deliver the course in a lab environment. On the other hand, taught in combination with the Internet on-line and face-to-face instruction. The choice is up to the student in this case a teacher. Topics available are Basic Computer Skills, Internet, Email, Word-processing, Paint and Drawing Programs, Desktop Publishing, Spreadsheets, Databases and Presentation software. Instruction is delivered by using streaming video and audio to show interviews of other educators on how they integrated technology into their teaching (Anderson,B.,1999). Web-based curriculum is curriculum delivered beyond classroom walls by way of the Internet. This type of instructional delivery is also called WEB based training. See the site

http://www.filename.com/wbt/pages/whatiswbt.htm for more information on what is WEB based training.

The convenience, cost saving, potential increase in student count and customer satisfaction will ensure the continued growth of web-based curriculum delivery. In fact according to a survey completed in 1997 by Web-Based Training Information Center polled 2,015 participants. 1,402 said they plan to implement web-based training with the next 12 months. For a more complete coverage of the results see the site http://www.filename.com/wbt/pages/survey_1996.htm..

Web-based curriculum delivery methods are constantly changing through product improvement software and hardware. Vendors are merging and consolidating seemingly continuously. This changes the product delivery method since merger or consolidation usually means a more integrated and powerful product.

In the infancy of Internet, development of specific tools became available for delivering curriculum beyond the classroom. File Transfer Protocol (FTP) was used to down load and up load curriculum and information to be used by anyone authorized and connected. Telnet enabled users to control computers remotely. Thereby retrieving information on demand. Hypertext Markup language (HTML) was welcomed throughout the world of computer networks because it was a universal language that could be displayed on any computer system no matter its manufacturer.

Many educational courses were developed and delivered via computer networks World Wide Web (WWW). Very quickly appeared chat server, Email server availability and web resources such as dictionaries, thesaurus, other software and information. The

Internet grew rapidly. Today there are roughly over 180 million users on-line and web sites have grown from one million to five million in two years (ZDNET.com., 1999).

There are numerous tools available for delivering web-based curriculum. (e.g. whiteboard, teleconference, Interactive TV, Web Based Software, electronic books, video-based software, CD-ROM, Video/Audio conferencing, intranet, satellite). However, there appears an emergence of another trend that may well change the need for embracing the tools for self-development and delivery of web-based curriculum and that is corporate agreements between major software manufacturers and up start companies.

> "UNext enters on-line graduate course field: Four more major universities have signed agreements with Unext.com, that plans to deliver graduate-level courses electronically to corporate employees starting this year. Unext.com has struck deals with the University of Chicago, Stanford University, Carnegie Mellon University and the London School of Economics and Political Science. Along with Columbia University's business school, the first school that signed on, each school plans to help Unext.com create course materials that it can sell to major corporations for employee training and education" (Masie, E., 1999,p.1).

What are presently the most popular web-based curriculum delivery methods employed by industry, business and post-secondary?

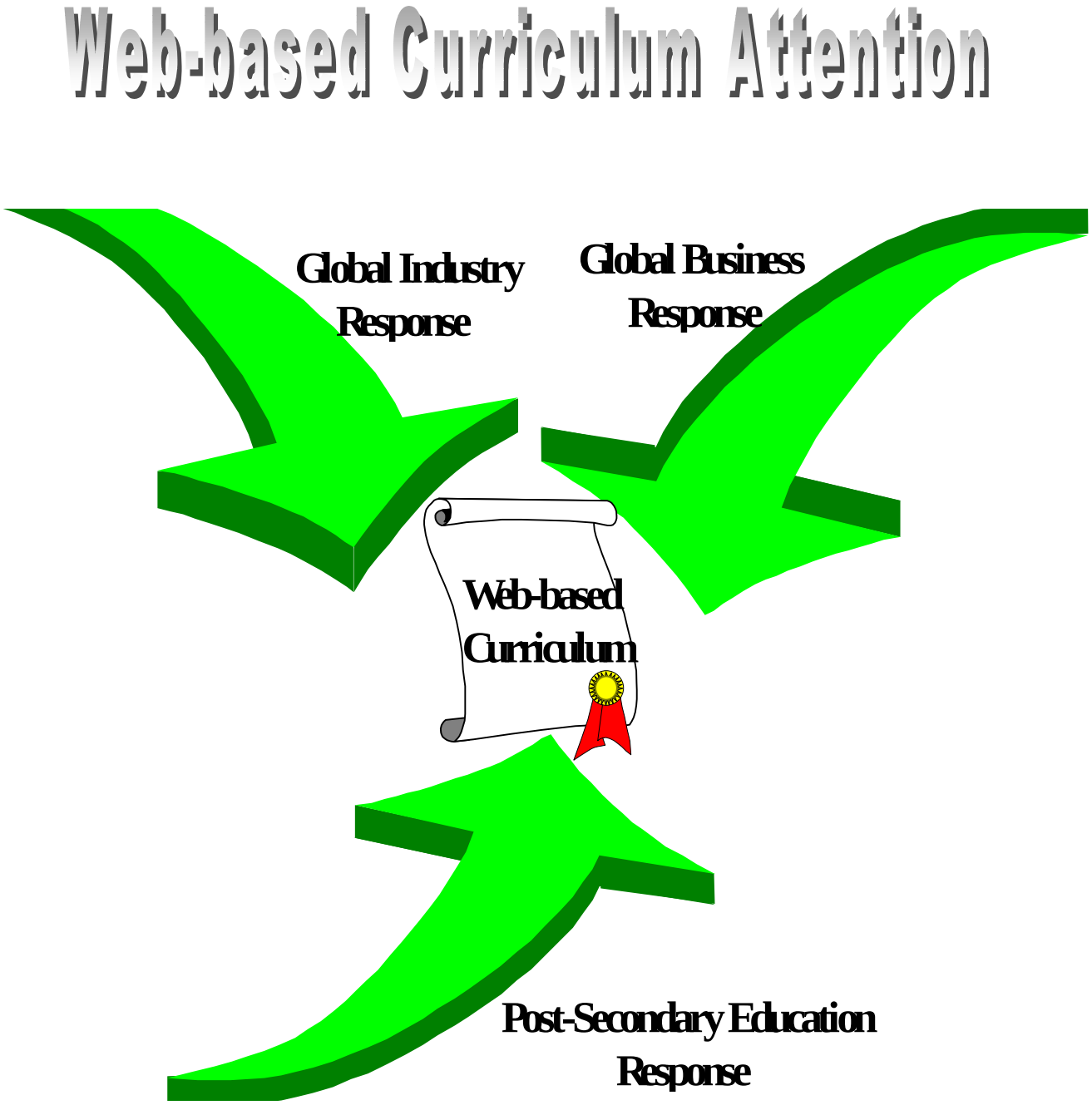

FIGURE 1

We-based curriculum delivery technology has opened opportunities for global educating and/or training. For this reason education is fast becoming a service business. The very foundation of traditional education has competition unlike any it has ever met. The results of this study will be of interest to many in the educating business.

Focus of Literature Search

1. Web-based curriculum (on-line) delivery methods.
    A. What is web-based curriculum?
    B. What tools are being used for delivering web-based curriculum?
2. What web-based curriculum delivery methods employed by:
    A. Educational institutions for delivering web-based curriculum.
    B. Industry for delivering web-based curriculum.
    C. Businesses for delivering web-based curriculum.
3. What are post-secondary education, business and industry on-line strategy?
    A. Post-secondary education on-line strategy.
    B. Industry on-line strategy.
    C. Business online strategy.
4. Identify future trends in on-line delivery methods.
    A. Future trends of on-line curriculum delivery methods.

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Chapter III

Research Methods

Introduction

The purpose of this study was to determine most popular web-based curriculum delivery used by post-secondary educational institutions, industries and commercial businesses. This was accomplished by surveying those entities currently involved in web-based curriculum delivery. Data collected also provided information on identifying differences of web-based delivery as well as different strategies used by post-secondary educational institutions, industries and commercial businesses. Web-based curriculum delivery methods are changing rapidly. Collecting this information is like taking a ‘snap shot today of a fast train in motion yesterday’. Once the decision to take a snap shot is decided the train has already moved on. This is the main reason an online survey form was developed and placed on the Internet for a short time with results dynamically tabulated through software. Getting this information is like getting only a 'snap shot' that will have to be taken again because it became outdated when it was taken.

The following information will assist in identifying research design, population surveyed, sample used and copy of the survey posted on the Internet placed in the Appendix.

Research Design

This was a descriptive study. Review of online resources (identified by search engine directories) revealed where post-secondary educational institutions, industries and commercial businesses are using web-based curriculum methods and what delivery methods are currently used for web-based curriculum delivery.

A survey instrument was developed using commercial software called E-Form. Hosting for the survey was available from E-From Internet services as well as services of tabulation of the survey results. E-Form also provided immediate graphic results for participants. This served to encourage them to complete the survey.

A Web site was developed for hosting survey results. An email account (Survey_online@hotmail.com) was created at Hotmail.com (http://www.hotmail.com). This account was created for comments from anyone concerning the study or the survey form.

Data Collection Techniques

Instrumentation

A survey instrument was developed and made available on the Internet via listservs dedicated to education and training. The targeted audience was educational professionals from post-secondary institutions, training professionals in industry as well as training individuals in commercial businesses. The survey instrument used allowed immediate tabulation of results in statically graphic forms. It also provided basic graphic results immediately to participants. Additionally a separate email account was established at Hotmail.com for any additional comments from participants and collection point for survey results.

Topics of the study

The major topics to be determined from the survey were: What web-based curriculum delivery methods are being used within post-secondary, industry and commercial business; What emerging trends are developing in web-based curriculum; Was there a difference in strategy being used by post-secondary educational institutions, industry, business.

Sources of Data

Post-secondary educational institutions were surveyed: University faculty/staff, post-secondary directors and faculty/staff.

Industry was surveyed: training department heads, product vendor representatives, and professional trainers. Commercial businesses were surveyed: financial trainers, marketing trainers, and international trainers.

How data was collected

A search engine web site search revealed educational institutions, industry and business using web-based curriculum delivery for education and training as well as listservs. For example, Cyber-universities, Corporate Universities, Traditional Universities with online components, Online K-12 educational institutions, listservs dedicated to online training, post-secondary institutions, Internet instructional software vendors, and online training professional web sites

Validity of the study

The targeted audience of this survey was directed toward those innovators that are currently engaged in cyber-curriculum delivery. Questions designed solicited information that answered the objectives of this study; delivery methods used; trends developing; and strategy differences. All participants were actively involved in some capacity with web-based curriculum delivery methods. However, one downfall of Internet responses is the remote possibility that someone could answer the online survey and not be one of the targeted audiences.

Reliability of the study

Due to the vary nature of rapid changes in technology advancement in the Internet world the results of this study are likely have a lifetime of a year or less. What might emerge as most popular in this study might change dramatically if a break through on standards occurs.

Research Schedule

This study required learning about the Internet. For example, listservs, email operation and etiquette, search engine operation and search techniques, identifying educational, industrial and business leaders in cyber- curriculum delivery, locating survey software for online as well as learning how to use the survey software selected. So the time for preparation took longer than actually submitting the survey and gathering its results. The short time allowed for survey response was deliberately set for a short duration of only one week to limit the number of responses. The targeted audience resided globally.

Sources of Data

Population

Search engine web sites revealed educational institutions, industry and commercial business using web-based curriculum delivery for education and training. Cyber-universities, Traditional Universities online, Online post-secondary educational institutions, listservs dedicated to online instruction, international institutions, Internet instructional software vendors, and online training professional web sites with information and personal contacts were identified. Any web site address that engaged in web-based curriculum delivery was sought after with request to respond to the survey. The targeted audience resided globally.

The size of the population was difficult to control. By setting a short time period for responding to the survey the size of the population was somewhat restrained. An effort was made to solicit to a sample selection of educational institutions (e.g. university, post-secondary), industries (e.g. training departments, training professionals, corporate training department) and businesses (financial, marketing, training).

In order to identify an emerging trend to web-based curriculum delivery methods being employed by educational institutions, industry and commercial businesses all areas that use web-based technology had to be surveyed globally.

Sample

There are some estimated over 25,730 online courses offered by higher institutions alone. The number of businesses and training courses could out number them. On the web there are over 900 million web sites. To manage sample size the researcher limited the time respond. Probability design was selected using stratified sampling. The population of users of web-based curriculum was subdivided into three subgroups; post-secondary educational institutions, industry, commercial business engaged in education and training. Educational institutions intended for sampling was post-secondary institutions. Industry was further divided into sub-groups: training department heads, product vendor representatives, and professional trainers. Business was further divided into sub-groups: financial trainers, marketing trainers, and international trainers.

Web-based curriculum technology changes rapidly. Therefore the decision to limit posting time of the survey limited the number of personnel within each population. An email was sent to listservs and targeted audiences identifying the web site where the survey was located. Each participant was encouraged to participate by being rewarded with reading the immediate results from survey responders. When they got to the site it was necessary for them to complete the survey before they could see the on-going results. Only one opportunity per participant was allowed for entering the survey.

Chapter IV

Survey Results

The intent of this research was to identify the most popular web-based curriculum delivery method currently employed by industry, commercial business and education. A survey was developed and delivered via the Internet to a mixed audience of professionals subscribed to listservs. Questions asked in the survey were directed specifically toward an audience actively engaged in online instruction as either a provider or user. Based upon results using cross tabulation, response ratio and evaluating comments, quantitative feedback was gained for addressing the following objectives:

1. Identify most popular web-based curriculum delivery methods presently employed by post-secondary educational institutions, training in industry and training in business globally.
2. Determine if there is a difference in training method employed by post-secondary educational institutions, training departments within industry and training businesses.
3. Synthesize retrieved research on web-based curriculum delivery to determine if there is a different strategy employed by post-secondary education, commercial business and industry.
4. Draft recommendations for an Action Plan to get ER&D to disseminate study via its web site.

The actual audience of twenty nine consisted of the following respondents shown in Table 1:

Table 1: Survey Respondents

	Community College	Higher Education	Elementary Education	Middle Secondary School	Non-profit Organization	Business Corporate Training	Government	Other
Number of responses	2	8	1	0	1	11	2	4
Response ratio	6.8%	27.5%	3.4%	0	3.4%	37.9%	6.8%	13.7%

The respondents represented the following job functions shown in Table 2:

Table 2: Job Functions

	Support Staff	Teaching Faculty Staff	Manager Dir/Chair Principle	Higher Admin	Researcher	Undergrad	Grad	Other
Number of responses	3	11	8	0	0	0	1	6
Response ratio	10.3%	37.9%	27.5%	0	0	0	3.4%	20.6%

The following tables were developed by cross tabulating question number 4 horizontal row (I am affiliated with:) and questions 5 through 11 left most vertical column. Question 4 made available the following choices: Community College; Higher Education other than Community; Elementary Education; Non-profit Organization; Business/Corporate training; Government; Other.

Table 3 shows question 4 and 5 cross tabulated. Question 5 stated:
The job function matching mine most closely is:

Table 3: Question 4 and 5 cross tabulation

	Community College	Higher Education	Elementary Education	Middle Secondary School	Non-profit Organization	Business Corporate Training	Government	Other
Support Staff		1				2		
Teaching /Faculty/Staff	2	3	1		1	2	1	1
Manager/Dir/ Chair/Principle		2				4	1	1
Higher Administration								
Researcher								
Undergrad								
Grad	1							
Other	1					3		2

Table 4 shows question 4 and 6 cross tabulated. Question 6 stated:

Which one of the following formats for online instruction do you presently use most often?

Table 4: Question 4 and 6 cross tabulation

	Community College	Higher Education	Elementary Education	Middle Secondary School	Non-profit Organization	Business Corporate Training	Government	Other
Synchronous Instruction		1						
Asynchronous Instruction	1	3	1			5	1	1
Synchronous Asynchronous	1	1				1		
None		1				5		1
Other		2			1			

Table 5 shows question 4 and 7 cross tabulated. Question 7 stated:

Which of the following instructional delivery strategies will your organization adopt for instruction delivery in the next year?

Table 5: Question 4 and 7 cross tabulation

	Community College	Higher Education	Elementary Education	Middle Secondary School	Non-profit Organization	Business Corporate Training	Government	Other
Face to Face	1	3			1	8	1	
Face to Face w/online	2	4			1	8	2	2
Online only		1				2		
Interactive Courseware		3	1		1	4	2	
Interactive Courseware w/LMS	2	2				3		1

Table 6 shows question 4 and 8 cross tabulated. Question 8 stated:

Which of the following courseware platform do you find most student friendly?

Table 6: Question 4 and 8 cross tabulation

	Community College	Higher Education	Elementary Education	Middle Secondary School	Non-profit Organization	Business Corporate Training	Government	Other
Learning Space								
Blackboard	1	4				2		2
E-education	1					1		
Intralearn								
Interwise							1	
WebCT		1				1		1
None		1	1		1	3		

Table 7 shows question 4 and 9 cross tabulated. Question 9 stated:

What configuration are you presently using for delivering online instruction in your organization?

Table 7: Question 4 and 9 cross tabulation

	Community College	Higher Education	Elementary Education	Middle Secondary School	Non-profit Organization	Business Corporate Training	Government	Other
Teleconference		2				2	1	
Web page, email		4			1	6	1	
Web page, email CD interaction			1		1		1	
Web page, email video, CD	1				1		1	1
Computer Courseware w/LMS	1	3						1
None		2				5	2	2

Table 8 shows question 4 and 10 cross tabulated. Question 10 stated:
Which one of the following instructional methodologies have you personally experienced the most for your own self-improvement in the last year?

Table 8: Question 4 and 10 cross tabulation

	Community College	Higher Education	Elementary Education	Middle Secondary School	Non-profit Organization	Business Corporate Training	Government	Other
Face to Face		4				8		1
Face to Face w/ Online Instruction		1	1		1		1	1
Online only	2	2				2	1	1
None								
Other		1				1		1

Table 9 shows question 4 and 11 cross tabulated. Question 11 stated:
Based on your experience which one of the following instructional delivery methods provides most effective learning?

Table 9: Question 4 and 11 cross tabulation

	Community College	Higher Education	Elementary Education	Middle Secondary School	Non-profit Organization	Business Corporate Training	Government	Other
Face to Face		1				2		
Face to Face w/ online instruction	2	7	1			7	2	1
Online only						1		
None								
Other						1		2

Table 10 shows number of responses and response ratio for question 6. Question 6 asked: Which one of the following formats for online instruction do you presently use most often?

Table 10 Question 6 Number of Response and Response Ration

	Synchronous	Asynchronous	Synchronous Asynchronous	None	Other
Number of responses	2	13	3	8	3
Response ratio	6.8%	44.8%	10.3%	27.5%	10.3%

Table 11 shows number of responses and response ratio for question 7. Question 7 asked: Which of the following instructional delivery strategies will your organization adopt for instruction delivery in the next year?

Table 11 Question 7 Number of Responses and Response Ratio

	Face to Face	Face to Face w/online	Online Only	Interactive Courseware	Interactive Courseware w/LMS	None	Other
Number of responses	14	19	3	11	8	1	5
Response ratio	48.2%	65.5%	10.3%	37.9%	27.5%	3.4%	17.2%

Table 12 shows number of responses and response ratio for question 8. Question 8 asked: Which of the following courseware platform do you find most student friendly?

Table 12 Question 8 Number of Responses and Response Ratio

	Learningspace	Blackboard	E-education	Intralearn	Interwise	WebCT	None	Other
Number of responses	0	9	2	0	0	4	6	9
Response ratio	0	31%	6.8%	0	0	13.7%	20.6%	31%

Table 13 shows number of responses and response ratio for question 9. Question 9 asked: Based on your experience which one of the following instructional delivery methods provides most effective learning?

Table 13 Question 9 Number of Responses and Response Ratio

	Teleconference	Web page email	Web page email, CD interaction	Web Page email video, CD interaction	Interactive Courseware w/LMS	None	Other
Number of responses	5	12	4	2	5	9	1
Response ratio	17.2%	41.3%	13.7%	6.8%	17.2%	31%	3.4%

Table 14 shows number of responses and response ratio for question 10. Question 10 asked: Which one of the following instructional methodologies have you personally experienced the most for your own self-improvement in the last year?

Table 14 Question 10 Number of Responses and Response Ratio

	Face to Face	Face to Face w/Online instruction	Online Only	None	Other
Number of responses	13	5	8	0	3
Response ratio	44.8%	17.2%	27.5%	0	10.3%

Table 15 shows number of responses and response ratio for question 11. Question 11 asked: Based on your experience which one of the following instructional delivery methods provides most effective learning?

Table 15 Question 11 Number of Responses and Response Ratio

	Face to Face	Face to Face w/Online instruction	Online Only	None	Other
Number of responses	3	22	1	0	3
Response ratio	10.3%	75.8%	3.4%	0	10.3%

The results obtained from cross tabulation and response ratio provided insight into the most popular web-based curriculum method as well as indicated a slight difference in training method employed by educational institutions and training businesses. Further synthesizing respondent comments provided reinforced survey results outline in chapter 5.

Chapter V

Summary, Conclusions and Recommendations

In a short seven years there has been a rush to be first with the most education/training offerings delivered on the Internet. Every institution had to be online in order to counter any claim that they were behind the times. Even those that held back were under great pressure to get in the swing of things. No one knew if this new venture was supporting learning or another fad. Now seven years later we know it's not a fad that will go away. In fact, it has grown greater in size and complexity. There are many more choices for delivering curriculum than at anytime in the past. The intent of this research was to determine for the present time what is the most popular delivery method used in education, business and industry. This chapter will provide a summary, conclusion and recommendation for the research project Web-based Curriculum Delivery.

Summary

Restatement of the Problem

Dynamic revolutionary changes in education, industry and commercial business are occurring almost overnight in web-based curriculum development and delivery! While some institutions in the world of industrial training and education are undergoing dynamic and rapid changes, the majority is exploring the option. Web-based delivery of instruction while being exciting is not a proven science. The topic ‘what most popular web-based curriculum delivery is taking place currently within commercial business, industry and education’ was the focus of this study. Milwaukee Area

Technical College's (MATC) Educational Research and Dissemination (ER&D) department is interested in gaining an answer to this question.

Methods and Procedures

Before determining what the most popular web-based curriculum delivery being used in the world of education, business and industry it was necessary to review literature and online resources. This review would lead to identifying the most popular curriculum delivery methods presently available for use. Once a survey of questions was developed, that included the latest curriculum delivery methods, it was necessary to locate an audience of active users of web-based curriculum. Moreover, since web-based curriculum has no boundaries a global audience was acceptable. They were available using listservs. A survey was sent out to three listservs with results determined by cross tabulation, response ratio and comment evaluation.

Major Findings

The respondents answering the survey represented a wide selection of professions with the major representing industry (37.9%) closely followed by education (27.5%). See Table 1. The major job function was 37.9% from Teaching/Faculty and Staff followed closely by administration type at 27.5%. See Table 2. So this survey had input from those who work directly with web-based curriculum and by those who administer the business of the product.

Asked which format for online is used the most often the majority (44.8%) responded asynchronous. See Table 10. Asynchronous could be all online using HTML, email and chat or face

to face with online supplemented. So when the question was asked; which of the following instructional delivery strategies will your organization adopt for instruction delivery in the next year? The majority (65.5%) responded face to face supplemented with online instruction. See Table 11. Another question asked; based on your experience, which one of the following instructional delivery methods provides most effective learning? Again, the majority (75.8%) responded face to face supplemented with online instruction. See Table 15.

Conclusions

The first objective identified for this study is: Identify most popular web-based curriculum delivery methods presently employed by post-secondary educational institutions, training in industry and training in business globally. Based on respondent's answer the most popular is face to face supplemented with online instruction. This is determined by results collected in Table 5 and 9 where the majority responded affirmative.

The next objective identified in the study is: Determine if there is a difference in training method employed by post-secondary educational institutions, training departments within industry and training businesses. Based on the survey results outlined in Tables 5, 7, and 8 Business/Corporate training and Higher Education show no substantial difference. Each responded in agreement.

The third objective identified in the study is: Synthesize retrieved research on web-based curriculum delivery to determine if there is a different strategy employed by post-secondary education, commercial business and industry. Based on the results of the survey there appears to be no significant differences in strategies employed by post-secondary, business and industry. As outlined in Table 7 business/Corporate responded six out of thirteen they used web pages and email for instruction. Higher Education responded four out of eleven they used web page and email for instruction. Table 5 outlined plans for implementing online instruction for both Business/Corporate training and Higher Education. The results shared indicated both areas were expecting to venture into more face to face supplemented with online instruction.

The last objective of the study stated; Draft recommendation for an Action Plan to get ER&D to disseminate study via its web site. ER&D has just developed its web site. A link to an url will be available for a summary of this study.

Recommendations

Recommendations Related to This Study

1. Any plan to implement an online course of instruction should include a format where face to face interaction is supplemented with online instruction.
2. Blackboard.com is a popular online course builder for educators.
3. Asynchronous format is the most popular.

Recommendations for Further Study

Web-based curriculum delivery method has changed in the short number of years that it existed. Today the results of this study indicate that effective instruction happens when face to face instruction supplemented with online instruction. Tomorrow this may change. New technology and broader bandwidth may allow more innovation and creativity into the world of online curriculum delivery. For example, High Definition Television (HDTV) may well open opportunities for integrating, we page with live interaction via TV. The integration of DVD and black box technology may open more doors to effective instruction delivery. Change is a major ingredient in this world of online education/training. But no matter what the technology the following questions will always have to determined:

- How well does this new curriculum delivery make effective learning possible?
- What change is on the horizon?

Appendix

Consent Form

I understand that by returning this questionnaire, I am giving my informed consent as a participating volunteer in this study. I understand the basic nature of the study and agree that any potential risks are exceedingly small. I also understand the potential benefits that might be realized from the successful completion of this study. I am aware that the information is being sought in a specific manner so that no identifiers are needed and that confidentiality is guaranteed. I realize that I have the right to refuse to participate and that my right to withdraw from participation at any time during the study will be respected with no coercion or prejudice.

NOTE: Questions or concerns about participation in the research or subsequent complaints should be addressed first to the researcher or research advisor and second to Dr. Ted Knous, Chair, UW-Stout Menomonee, WI, phone (715) 232-1126.

Web Based Survey Form

WEB-BASED CURRICULUM DELIVERY

Thank you for taking time to complete this survey. Please review the linked consent form.
Thank you for answering the following questions and selecting SUBMIT on the last page.

Your Profession:
Your Title:
Optional Email address:
(Note: Your email address will not be given to anyone outside this research and your identification will be kept confidential. Your email will only be used to inform you when the results are tabulated for this survey.)

1. I am affiliated with (check only one):
   a. Community College
   b. Higher Education other than a Community College
   c. Elementary Education
   d. Middle or Secondary Education
   e. Non-profit Organization
   f. Business/Corporate training
   g. Government
   h. Other

2. The job function matching mine most closely is (check only one):
   a. Support staff (e.g. graphics; computer support; curriculum development)
   b. Teaching faculty/trainer
   c. Manager/director/department chair/principle
   d. Higher administration (VP; provost; dean; superintendent)
   e. Researcher
   f. Undergraduate student
   g. Graduate student
   h. Other

The following two questions (3 & 4) refer to the way to deliver online instruction.

3. Please check which of the content delivery modes below are most **prevalent** in your organization for online instructional delivery:

    a. One way live video
    b. Two way audio with graphics
    c. Two way audio one way video
    d. Two way audio two way video
    e. Two way audio
    f. None
    g. Other

4. Please check which of the online delivery modes below you find most **effective for learning** in your organization.

    a. One way live video
    b. Two way audio with graphics
    c. Two way audio one way video
    d. Two way audio two way video
    e. Two way audio
    f. None
    g. Other

5. What configuration are you presently using for delivering online instruction in your organization? Select **any** that apply.

    a. Teleconference
    b. Desktop/Laptop with HTML pages and email
    c. Desktop/Laptop with HTML pages and email and CD interaction
    d. Desktop/Laptop with HTML pages, email, video camera, CD interaction
    e. Desktop/Laptop with Interactive Courseware provided by a vendor
    f. Desktop/Laptop with Interactive Courseware and Learning Management System provided by a vendor

g. None

h. Other

6. Which **one** of the following instructional methodologies have you personally **experienced the most** for your own self-improvement in the last year?

    a. Face to Face (Traditional)

    b. Face to Face with online instruction supplemented

    c. Online only

    d. None

    e. Other

7. Based on your experience, which one of the following instructional delivery methods provides the **most effective learning** for online instruction?

    a. Face to Face (Traditional)

    b. Face to Face with online instruction supplemented

    c. Online only

    d. None

    e. Other

8. Which one of the following interactive formats for online instruction do you presently use **most often**? (Choose only one.)

    a. Synchronous instruction

    b. Asynchronous instruction

    c. Synchronous/Asynchronous instruction

    d. None

    e. Other

9. Which of the following instructional delivery strategies will your organization adopt for instruction in the **next year**?

a. Face to Face (Traditional)

b. Face to Face with online instruction supplemented

c. Online only

d. Use interactive courseware provided by vendor

e. Use interactive courseware and Learning Management System provided by vendor

f. None

g. Other

Based on your professional experience with online instruction:

10. What have you found to be the most effective instructional format in both **cost and learning** for online instruction?

{This is a copy of the same form going on email and web page (HTML}

WEB-BASED CURRICULUM DELIVERY TRENDS

Thank you for taking time to respond to this survey. Your input is valuable and appreciated. If you would like to receive a copy of this survey's tabulation please leave your email address. I will be posting the results at http://www.theteach.com and notify you when it is posted.

David Stinnett
April 15, 2000

DIRECTIONS:
Please review the liked consent form.
You can complete this form two different ways - by email or web.

EMAIL DIRECTIONS - Choose reply, place an X between the brackets, then return the form.

WEB DIRECTIONS - You will find an attached a web version of the survey. Open the enclosure (some systems allow you to double click on it) then complete the web form as you would any other form. You must be connected to the web in order to process this form.

Your Profession

Your Title:

Email address:

(Note: Your email address will not be given to anyone outside this research and your identification will be kept confidential. Your email will only be used to inform you when the results are tabulated for this survey.)

1. I am affiliated with:

a. Community College

b. Higher Education other than a Community College

c. Elementary Education

d. Middle or Secondary Education

e. Non-profit Organization

f. Business/Corporate training

g. Government

h. Other

2. The job function matching mine most closely is:

a. Support staff (e.g. graphics; computer support; curriculum development)

b. Teaching faculty/trainer

c. Manager/director/department chair/principle

d. Higher administration (VP; provost; dean; superintendent)

e. Researcher

f. Undergraduate student

g. Graduate student

h. Other

3. Please check which of the content delivery modes below you find most prevalent for online instructional delivery:

a. One way live video

b. Two way audio with graphics

c. Two way audio one way video

d. Two way audio two way video

e. Two way audio

f. Other

4. Please check which of the online delivery modes below you find most effective for learning:

a. One way live video

b. Two way audio with graphics

c. Two way audio one way video

d. Two way audio two way video

e. Two way audio

f. Other

5. What format are you presently using for delivering your online instruction? Select any that apply.

a. Teleconference

b. Desktop/Laptop with HTML pages and email

c. Desktop/Laptop with HTML pages and email and CD interaction

d. Desktop/Laptop with HTML pages, email, video camera,CD interaction

e. Desktop/Laptop with Interactive Courseware

f. Desktop/Laptop with Interactive Courseware & Learning Management System

g. Other

6. Which one of the following instructional course format have you personally experienced the most for your own self-improvement since 1998?

a. Face to Face

b. Face to Face with online instruction

c. Online only

7. Which one of the following instructional course format provides the most effective learning format for online instruction?

a. Face to Face

b. Face to Face with online instruction

c. Online only

8. Which one of the following method of delivery do you most often use?

a. Synchronous instruction

b. Asynchronous instruction

c. Synchronous/Asynchronous instruction

d. Other

9. Which of the following instructional delivery strategies will you or your organization adopt in the next year?

a. Use interactive courseware provided by vendor

b. Use interactive courseware and Learning Management System provided by vendor

c. Other

10. Based on your experience in online instruction what have you found to be most effective online curriculum delivery both in cost and learning for instruction?