Online Education: the Needs, Interests, and Capacities of Wisconsin Public Health Professionals

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Abstract

The need to develop online educational opportunities for public health professionals has been clearly documented nationwide and specifically in Wisconsin. Preliminary evaluations have identified the advantages and effectiveness of online learning for public health education. However, few studies have examined public health professionals' use of, confidence with, and interest in online technologies, formats, and topics. These data are pertinent to the development of online education modules that reflect professionals' learning needs. Consequently, a descriptive prospective study was implemented to assess the technology and content needs, capacities, and preferences of Wisconsin public health professionals. The results clarified what appropriate technologies, formats, and topics should be included in online learning environments for public health professionals and are aligned with the components of the Theory of Innovations. Respondents reported utilizing and confidence with basic computer technologies and programs, but preferred short, self-paced, asynchronous, non-degree continuing education programs. Respondents were not as confident using online chat rooms, forums, discussion boards, or video-technologies, and were less interested in semester-long courses and full degree programs. Results indicated that public health online education programs should include a technology training course for students. Future research should survey additional public health professionals and evaluate public health online programs.

Keywords: public health, online education, distance education, continuing education, professional development

Introduction

Nationwide, public health professionals have expressed their need and preference to continue their education through online learning modules (Ellery, McDermott, & Ellery, 2007; Docherty & Sandhu, 2006; Berman & Novotny, 1999). Specifically in Wisconsin, a 2006 survey administered to members of the Milwaukee/Waukesha Public Health Consortium found that 92% of these public health professionals were interested in online public health education (Milwaukee/Waukesha Public Health Consortium, 2006). Due to the time, limited staff, geographic, and financial barriers to accessing traditional in-person public health educational programs, it is clear that those working in the field of public health in Wisconsin and beyond would greatly benefit from and appreciate the opportunity to learn in an online environment.

Although Wisconsin public health professionals' interest in and need for online public health learning was well established by the results of the 2006 survey, further information about the technology use and learning format and content preferences of these public health professionals remained lacking. These elements are pivotal to the creation of effective and learner-friendly online education programs. Therefore, a study was developed to fill that gap and assess Wisconsin public health professionals' specific online education needs, interests, and current capacities. The outcomes from this research provide insights and information about the characteristics and preferences of potential public health online learners in Wisconsin, and supplement the research base in the area of public health online education.

Literature Survey

Online education is an area in need of exploration in public health and other disciplines. As there are approximately fourteen to sixteen million students enrolled in post-secondary education in the U.S, (Sorensen, 2001), there is clearly an opportunity to provide further learning in online formats to this significant student population. Moreover, approximately 182 million people, including public health employees, are currently using the Internet in the United States and Canada combined (Cobb, 2004). Despite a perception that working professionals, older individuals, or returning students are not as willing to learn via the Internet, online education should not be limited to young, new or future students. The use of the Internet for various purposes, including knowledge acquisition, is increasing among a range of generations. This range includes individuals just entering post-secondary schooling as well as the currently employed and recently retired employees in varied disciplines (Docherty & Sandhu, 2006).

Due to the current and projected shortage of public health workers, the increasing demand for their services, and the ease of access to the Internet, public health employees are seeking to fulfill continuing education units and professional development requirements online (Cobb, 2004). Because of low funding and support for the field of public health, it is more difficult for these workers to take time away from their jobs to continue education and professional development in the traditional on-campus format (Ellery, McDermott, & Ellery, 2007; Link & Marz, 2006; Stanistreet et al., 2000). Clearly, schools and programs of public health and other academic entities "…should be encouraged to invest in DE [distance education] technology, implement DE learning programs, and transform some existing F2F [face-to-face] courses to DE so that a wider range of students, regardless of age or geographic location, may enroll in quality learning programs" (Schachar M, Neumann, 2003, pg. 17).

Although online education is advantageous in many respects, such as saving travel time, bridging geographic areas, and offering flexible scheduling for students, there are distinct frustrations with and barriers to accessing and utilizing distance education for public health professionals. These include difficulties using the technologies and understanding the various formats utilized in online environments. It is possible to fully address these concerns in a proactive manner so that online courses and programs support student success and the effectiveness of these programs. In order to do so, faculty and program developers should be aware of the online education needs, interests and capacities of potential students. This knowledge allows them to integrate course content with computer technology and programs that accurately reflects the needs and abilities of the desired population: professionals and students (Amrein-Beardsley, Foulger, & Toth, 2007; Ellery, McDermott, & Ellery, 2007; Uden-Homan, et al., 2005; Valenta, A., Therriault, D., Dieter, M., & Mrtek, R, 2001). Furthermore, online education should be suited to the current computer confidence levels of students so that technology does not become a significant barrier to completing a course or program (Link & Marz, 2006), but rather supports and furthers the educational experience and overall quality of the course. In addition, since confidence and ability to use a computer

and the Internet are essential for effective online learning, these must also be considered when developing and implementing online education in any field of study (Yu & Yang, 2005). Overall, the assessment of students' technology capabilities and their content needs are pivotal elements for faculty and academic entities working to establish effective and user-friendly online education opportunities for students and professionals, including those engaged in public health work.

Problem Statement

Building off of earlier research, this study aimed to determine online learning needs, interests, and current capacities of the study subjects by answering the following five research questions:

1. What forms of technology do public health professionals use?
2. What is the confidence level of public health professionals with the technology they use?
3. What formats of online learning do public health professionals prefer to use in an online learning environment?
4. What topics do public health professionals want online programs to address?
5. What is the need for a technology training module offered or required prior to enrolling in or beginning an online course?

Methods

This study was prospective and descriptive in design. The survey instrument was developed based on previous research studies and survey tools (Valenta et al., 2001; Hersh, Junium, Mailhot, & Tidmarsh, 2001; Bernard, Brauer, Abrami, & Surkes, 2004; Stokes, Walsh, & Cannavina, 2003), as well as on the input from public health experts in Wisconsin (see Appendix A). The content of the survey was drawn from previously conducted surveys and questionnaires and by utilizing a Delphi approach with public health professionals with expertise in adult and continuing education to refine specific survey items. The online survey tool "Select Survey" was used to create a Web-based questionnaire.

The population that was chosen for this survey consisted of 626 public health professionals who were part of a statewide public health e-mail list obtained from the Wisconsin Department of Health and Family Services, Division of Public Health. The population included 500 Division of Public Health Personnel, 93 Local Health Department Directors, 11 Tribal Health Directors, and 22 Public Health Consortia Trainers and Educators.

Results

A total of 145 total respondents completed the survey, yielding a response rate of 23.2%. The majority of respondents were between the ages of 45 and 64 years; 79% were over the age of 35 years and 81% were women. Of the respondents, 46% had a bachelor's degree, and 39% had either a master's or doctoral degree; 73% reported no requirements for professional development or continuing education programs; and 51% had previously engaged in online education courses (see Table 1).

1. What forms of technology do public health professionals use?

A large portion of these Wisconsin public health professionals reported using either a desktop PC (83%) or laptop PC (72%) rather than a Macintosh desktop (5%) or Macintosh laptop (5%). In addition, the overwhelming majority of respondents utilized computers (91%), fax machines (96%), DVD and CD players (84 and 80%), word processors (99%), the Internet (99%), and Power Point presentation software (87%); a smaller majority (65%) utilized databases. Almost all (89%) of the participants connected to the Internet either at their place of employment, utilized the Web-browser Internet Explorer (74%), and connected via high-speed Internet (86%) (see Table 2).

Table 1. *Demographic Characteristics of All Study Respondents.*

Demographic Characteristics		***% (n)***
Age		
	18-24	3 (5)
	25-34	19 (27)
	35-44	21 (30)
	45-54	30 (43)
	55-64	25 (36)
	65+	3 (4)
Gender		
	Female	81 (117)
	Male	19 (28)
Level of Education Completed		
	High School Degree	3 (5)
	Some Technical College Experience	4 (6)
	Technical College degree	3 (4)
	Some 4-year College experience	4 (6)
	Bachelors degree	46 (67)
	Masters degree	34 (50)
	Doctoral degree	5 (7)
Credentialing Requirements		
	Continuing education credits	22 (31)
	Professional development programs	8 (11)
	No requirements	73 (103)
	Other	3 (4)
Actual Participation in Continuing		
	Online	51 (73)
	Offered at college or university	54 (76)
	Offered at local agency or organization	50 (71)
	Offered at health department	39 (55)
	At professional conferences or meetings	75 (106)
	Not participated in these programs	12 (17)
	Other	2 (3)

2. What is the confidence level of public health professionals with the technology they use?

The Wisconsin public health professionals who responded to this survey were confident in their ability to use basic computer programs and hardware, to include word processors, the Internet, e-mail, document downloading, and presentation and media software programs. However, fewer were confident using databases, spreadsheets, video-conferencing tools, or specific online communication systems such as chat rooms or forums. Respondents reported a moderate level of confidence with audio-conferencing technologies and with Adobe Acrobat (see Table 3).

Table 2. *Computer Technologies Used by Respondents*.

Forms of Technology Used		***% (n)***
	Copy Machine	99 (139)
	Fax Machine	96 (136)
	Printer	95 (134)
	Computer (in general)	91 (128)
	Desktop PC	91 (117)
	Cellular Phone	90 (127)
	DVD Player	84 (119)
	CD-ROM Player	80 (113)
	Digital Camera	77 (109)
	Laptop PC	72 (102)
	Scanner	59 (83)
	Image Projector	43 (61)
	Video recorder/camcorder	39 (55)
	Desktop Macintosh	5 (7)
	Laptop Macintosh	5 (7)
Access to Computer		
	Workplace	99 (140)
	Home	89 (126)
	Public computer room	33 (46)
	Other	4 (6)
Programs Used		
	Word processor	99 (139)
	Internet	99 (139)
	Adobe Acrobat	89 (126)
	Media Players	87 (122)
	Power Point	87 (122)
	Spreadsheets	83 (117)
	Database	65 (92)
	Other	18 (25)
Internet Connection		
	High-speed Internet	86 (121)
	Internet Explorer	74 (103)
	Mozilla Firefox	21 (29)
	Dial-up Connection	15 (21)
	Netscape	9 (12)
	Other	5 (7)
	Not sure	1 (2)

Table 3. *Technology Confidence Levels of Public Health Professionals*.

Technology	***Very Low/Low % (n)***	***Average % (n)***	***High/Very High % (n)***	***Response Total % (n)***
E-mail	0 (0)	19 (26)	81 (114)	140
Computer keyboard	1 (2)	19 (26)	80 (111)	139
Computer mouse	1 (1)	22 (31)	77 (108)	140
Attachments	1 (1)	23 (32)	76 (104)	137
Online search engines	5 (6)	21 (29)	75 (105)	140
Internet	1 (2)	24 (34)	75 (104)	140
Word processor	2 (3)	24 (34)	73 (103)	140
Computer (any type)	2 (3)	26 (36)	72 (100)	139
World Wide Web	2 (3)	27 (38)	71 (99)	140
Downloading documents	7 (11)	26 (36)	67 (93)	140
Media players	8 (11)	32 (45)	60 (84)	140
PowerPoint	17 (25)	29 (41)	53 (74)	140
Adobe Acrobat	11 (15)	40 (54)	49 (65)	134
Spreadsheets	23 (32)	29 (40)	47 (64)	136
Audio-conferencing	41 (43)	29 (41)	40 (56)	140
Online forums	47 (65)	27 (37)	26 (36)	138
Video-conferencing	43 (60)	33 (46)	24 (33)	139
Online chat rooms	59 (81)	22 (31)	19 (27)	139
Database	38 (52)	36 (50)	16 (37)	139

3. *What formats of online learning do public health professionals prefer to use in an online learning environment?*

Of these respondents, 52% would prefer to engage in self-paced online learning modules and 46% would like programs that are asynchronous; learning at any time or in any place using the Internet. Almost half of respondents would like to receive non-degree continuing education credits for participation in online education, while a smaller but still substantial minority reported interest in semester long courses (18%) , online PhD programs (24%), or an online Masters in Public Health (28%) (see Table 4). Overall, there was high interest in using E-mail communication (46%) and online exams (41%) as part of online learning systems, with less interest in using online chat rooms, discussion boards, and audio- and video-conferencing technologies (see Table 5).

4. What topics do public health professionals want online programs to address?

These Wisconsin public health professionals reported the highest level of interest in the topics of emerging public health issues, epidemiology, public health law, and health administration and policy. Those topics that received the lowest levels of interest included nutrition, global health, and health informatics (see Table 6).

5. *What is the need for a technology/online course training module offered or required prior to enrolling in or beginning an online course?*

Approximately one-third of respondents were interested in engaging in a technology or an online education training session or course prior to enrolling in a public health online education program (see Table 6).

Table 4. *Public Health Professionals' Online Learning Format Preferences.*

Online Format	***Very Low/Low % (n)***	***Average % (n)***	***High/Very High % (n)***	***Response Total***
Self-paced online courses	19 (26)	29 (39)	52 (71)	136
Asynchronous online programs	22 (30)	32 (43)	46 (61)	134
Non-degree continuing education modules	20 (28)	35 (48)	45 (62)	138
Online Public Health certificate degree programs	42 (56)	29 (39)	29 (39)	134
Online MPH	51 (68)	21 (28)	28 (38)	134
Online PhDs	59 (80)	16 (22)	24 (32)	134
Online with some face-to-face	30 (42)	46 (64)	23 (32)	138
8-week intensive online courses	47 (63)	34 (45)	19 (26)	134
16-week, semester-long online courses	52 (68)	32 (42)	18 (23)	133

Table 5. *Public Health Professionals' Online Learning Technology Preferences.*

Online technology	***Very Low/Low % (n)***	***Average % (n)***	***High/Very High % (n)***	***Response Total***
E-mail communication	17 (28)	36 (50)	46 (64)	138
Online exams	18 (25)	41 (57)	41 (57)	139
Videotapes or DVDs	30 (42)	40 (55)	30 (41)	139
CD-ROM programs	27 (38)	43 (60)	29 (40)	138
Real-time discussions	31 (23)	43 (59)	25 (35)	137
Audio conferencing	38 (50)	39 (51)	24 (31)	132
Only computer-based technology	34 (47)	44 (60)	21 (29)	136
2-way audio, one-way video conferencing	45 (62)	36 (50)	19 (26)	138
2-way online conferencing	42 (58)	41 (56)	17 (23)	137
2-way audio/visual teleconferencing	46 (62)	38 (51)	17 (23)	136
Discussion boards	56 (76)	29 (39)	15 (21)	136
In-person exams	50 (68)	38 (52)	13 (18)	138
Online chat rooms	67 (92)	28 (38)	6 (8)	138

Table 6. Public Health Professionals' Topics of Interest for Online Public Health Courses.

Public health topic	*Interest %*
Emerging public health needs	52
Epidemiology	46
Public health law	46
Health policy and administration	44
Environmental Health	42
Community-based planning and intervention development	42
Grant writing	42
Communicable diseases	42
Public health ethics	41
Special population's health needs	40
Assessment	38
Public health administration and financial management	38
Leadership	38
Computing and technology for public health	36
Emergency preparedness	36
A technology training module	33
Biostatistics	33
Chronic diseases	32
Social and Behavioral Sciences	30
Research methodology	30
Nutrition	29
Cultural Competence	28
Health informatics	27
Global health	27
Advocacy	24
Bioterrorism	24
Health literacy	24
Other	6

Discussion

The results of this survey provided several insights into the online education needs and preferences of Wisconsin public health professionals and provide important information and impetus for additional research for the development of the public health profession. Overall, the research findings are aligned with the four constructs of the Theory of Innovations: innovation, communication channels, social system, and time (National Cancer Institute, 2005). Applied to the present research, the 'innovation' is online education for professional development; the 'communication channels' include the means which are employed to transmit this innovation from one person or agency to another, such as information shared at conferences, e-mail communications amongst colleagues, and public health publications, newsletters, and website; the 'social system' is public health agencies, academic entities, and other health and non-health related organizations; and, because many within this population have yet to encounter or utilize online education opportunities, additional time is needed for the innovation of online education to be fully adopted.

Importantly, the results point to the fact that approximately half of respondents had already engaged in

some form of online training modules, which may be those programs which are already offered free to public health professionals at universities and agencies nationwide (Ellery, McDermott, & Ellery, 2007; Horney, et al., 2005; Docherty & Sandhu, 2006; Horton, 2000; Rossi, 2006; Shield, 2000; Umble, Shay, & Sollecito, 2003). Moreover, the findings indicated that the technology and format preferences were closely aligned with the confidence levels with these various online education components. More specifically, the results of the present study suggested that being able to self-pace and access online modules anytime, anywhere may be a direct result of the numerous time, financial, and geographic constraints that many public health professionals face. In addition, the high degree of interest in receiving continuing education credits rather than full academic degree credit may be associated with the high level of education of majority of the respondents had already attained. Because so many of the respondents had at least an undergraduate or masters level of education, they may not be as interested in fully online degree programs and would much more prefer to engage in programs that would offer continuing education credits. However, because the study respondents may not be representative of Wisconsin's overall public health workforce, this conclusion cannot be generalized to the Wisconsin public health workforce as a whole.

The results showed that all of the public health topics that participants could select from received at least a 25% interest level. One interpretation of this is that online education programs in any area may benefit a large portion of respondents. It is important to note that there may be specific topics that could be of higher interest for distinct groups within this population. Furthermore, three of the topics of greatest interest aligned with core areas of public health, to include epidemiology, health services administration, and environmental health (Association of Schools of Public Health, 2006). This has implications not only for public health online programs offered and in development in Wisconsin, but also for nationwide online educational opportunities.

The fact that fully one-third of respondents were interested in technology training or orientation courses may be indicative of either a high level of insight into respondents' actual technology-related skill level by researchers and online course developers, or it might indicate an excessively pessimistic self-assessment of technology-related skill level. Public health professionals who wish or are required to continue their education may believe that an orientation module increases the time and money they must commit to online learning without much added benefit. However, providing but not requiring this support system would most likely enhance their experience in online educational environments and reduce any barriers and frustrations they may encounter with learning in an online classroom, to include experiencing difficulty navigating online courses, inadequate access to technology support systems, and aggravation with new software and online learning programs.

There are several limitations of the present study that must be addressed. First, the generalizability of the results is limited to the Wisconsin public health professionals who participated in the research. However, the results provide insight into the professional and technological educational and training needs and comfort levels of public health professionals. The preliminary findings can provide impetus to replicate the study with additional populations and suggests potential for extrapolation to additional public health workers. Second, the small sample size may limit the validity of the study findings, as many public health professionals who were not included may have significantly different online education experiences and needs. Third, although the survey instrument was developed based on those used in previous research and underwent critique by a panel of experts, the validity of this instrument may be not be absolute. Fourth, the survey was focused in what was assessed in the current study, and was not intended to be all-inclusive of potential needs, barriers to, or preferences for online education needs. As such, the focused nature of the present research delimited the amount of data that was collected .

Conclusions

The results of this research have several implications for public health education. Academic and professional development program developers can utilize the findings as they create new or redesign existing online educational opportunities for public health professionals and students. Based on the responses of this survey, there are specific needs and interests that should be kept in mind when developing any public health online education courses or programs in the topics included in this survey, to include topics of interest, technologies used, and confidence levels with online education programs. It is important to note that the results of this research should not drive the program content of all online learning opportunities, but rather that educators should be cognizant of the trends indicated by this

study's respondents . The following series of guidelines were based on those components which received a high/very high interest rating by at least 40% of respondents. These can be used in the development of online public health education opportunities, but should not be considered as absolutes or all-inclusive:

1. Programs should be developed that offer non-degree continuing education credits for professionals or graduate level certificate degrees prior to creating full academic degrees such as a Master of Public Health or doctoral programs.
2. Programs should make most use of e-mail communication with instructors and other students.
3. Programs should be self-paced, asynchronous, and offer online examinations, rather than be semester-long, very short and intense in duration, or require in-person assessments.
4. Programs on emerging public health issues, epidemiology, public health law, health policy and administration, environmental health, community-based planning and intervention development, grant writing, communicable diseases, public health ethics, and special population needs should be developed as preliminary offerings since these were the topics of highest interest among respondents.
5. Short training modules on the use of spreadsheets, databases, PowerPoint, online chat rooms, online forums, discussion boards, and video- and audio-conferencing technologies, in addition to basic computer and software use, should be offered as supplemental support courses, rather than as pre-requisites for enrollment.

Future research regarding online education needs for public health professionals should focus on ascertaining demographic distinctions and correlations such as by age, gender, and/or educational attainment. Based on the preliminary results of the present study, researchers could formulate hypotheses about how these factors affect the needs for, and interest in, public health online education. These additional analyses would enhance the depth of understanding about what directly influences public health professionals' use of, confidence with, and interest in online education.

It is essential to replicate this study in other areas in order to add to the body of research on public health professionals' needs and barriers to online education. Not only would this approach assist in determining the degree to which public health workers across geographic areas have similar needs and challenges with online learning technologies, but it would provide program developers with supplemental information regarding their target population.

An additional research area that would be important to address is ascertaining what factors influence the interest of public health professionals in accessing a technology or orientation course for online education programs. This research would identify whether public health professionals lack the time or resources to engage in an introductory course, or if they view such a class as needless for their success in online education or professional development. A final recommendation that arises from this research centers on the importance of exploring online education opportunities that are coupled with more traditional, in-class learning formats. Such research would identify the extent to which the current and future public health workforce would be more supportive and interested in engaging in education modules that make use of both in-person and online education.

Lessons for Practice

1. Public health professionals in Wisconsin utilized and were confident with basic computer technologies and programs.

2. Public health professionals in Wisconsin preferred self-paced, asynchronous, non-degree continuing education opportunities.

3. Public health professionals in Wisconsin were not as confident using online chat rooms, forums, discussion boards, or with video-technologies.

4. Public health professionals were less interested in semester-long courses and full degree programs.

5. Public health online education programs for Wisconsin public health professionals should include a

technology training course or orientation session for students to ease frustrations and increase the use of the professional innovation of online education.

6. Future research should focus on surveying additional public health professionals on their online learning capacities, needs, and interests, and developing and evaluating public health online programs for this population.

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Appendix

Public Health Online Education Survey

1. What is your age?

18-24
25-34
35-44
45-54
55-64
65+

2. What is your gender?

Female
Male

3. What is the highest level of education you have attained?

High School Degree
Some Technical College experience
Technical College degree
Some 4-Year College experience
Bachelors Degree
Masters Degree
Doctoral Degree

4. Does your current profession, agency, or licensure board require:

Continuing education credits
Professional development programs
No requirements
Other_____

5. I have participated in continuing education or professional development programs:

Online
Offered a college or university
Offered at a local agency or organization
Offered at a local health department
At professional conferences or meetings
I have not participated in these programs
Other_____

6. What forms of technology do you use?

Computers
- Desktop PC
- Desktop Mac
- Laptop PC
- Laptop Mac

CD-ROM players
DVD-Players
Digital cameras
Video recorders/Camcorders
Cellular phones
Image Projectors
Printers
Scanners
Copy machines
Fax machines

7. What programs do you use on the computer?

1. Word processor (Microsoft Word)
2. Internet
3. Media players (DVD, CD-Rom)
4. Adobe Acrobat
5. Power Point
6. Spreadsheets
7. Database (Access, etc)
8. Other:_____

8. I have access to a computer with the internet at:

Home
Workplace
Public computer room, such as at a library
Other

9. I connect to the internet using:

Dial-up connection
High-speed Internet
Other
I'm not sure
Type of browser used:

a. Internet Explorer
b. Netscape
c. Mozilla Firefox
d. Other _____

10. My confidence with the following technologies is:

The rating scale includes the following choices: Very Low, Low, Average, High, Very High

A computer
A computer keyboard
A computer mouse
Word processor (Microsoft Word)
Internet
Media players (DVD, CD-Rom)
Adobe Acrobat
Power Point
Spreadsheets
Database (Access, etc)
The World Wide Web (Internet)
E-mail
Attachments
Downloading documents and other files
Online search engines (Google, Yahoo)
Online chat rooms
Online forums
Video-conferencing
Audio-conferencing (tele-conferencing/conference calls)

11. My level of interest for online education in the following formats is:

The rating scale includes the following choices: Very Low, Low, Average, High,Very High

16-week, semester-long online courses
8-week intensive online courses
Online Public Health certificates degree programs
Online Masters in Public Health
Online PhDs in core disciplines of Public Health
Non-degree continuing education online modules
Self-paced online courses
Asynchronous Online Programs (Definition: learning at anytime or in anyplace using Internet and World Wide Web tools such as e-mail, electronic bulletin boards, and Web pages, as the main vehicles for instruction
Online courses wityh some required face-to-face meetings (blended format)
Videotapes or DVDs as part of online course
CD-ROM programs for online course
Audio conferencing as component of online course
Only using Computer-based technology for online course
2-way online conferencing
2-way audio/visual teleconferencing
2-way audio, one-way video conferencing
Online chat rooms
Discussion boards online
Real-time online discussions w/facilitator and other students
Email communication with teacher and other students
Online examinations
In-person examinations

12. I am interested in online courses in the following public health related topics (please check all that apply):

A technology course or training module on how to use online public health program or course
Epidemiology
Biostatistics
Social and Behavioral Sciences
Environmental health
Research Methodology
Health Policy and Administration
Community-based planning and intervention development

Assessment
Public health administration and financial management
Grant writing
Advocacy
Leadership
Computing and Technology for Public Health
Cultural competence
Emerging public health needs
Health informatics
Emergency preparedness
Bioterrorism
Nutrition
Special population's health needs (i.e. children, elderly, women, minorities)
Health literacy
Public health law
Public health ethics
Global health
Chronic diseases
Communicable diseases
Other_____

13. The preferred type of credit I would receive for completing such courses would be (check all that apply):

Undergraduate academic credit
Graduate academic credit
Non-credit continuing education units (CEUs)
Non-credit continuing education contact hours (CECHs for health educators)
Other (please specify)_____

14. Do you have any additional comments about receiving continuing education opportunities through online formats?

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