

# Pilot Test Evaluation Report of the National Institute on Aging's *Guide for Training Older Adults to Access Health Information on the Web*



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*Guide for Training Older Adults to Access Health Information on the Web*

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**INTRODUCTION**

The overall purpose of this pilot test evaluation is to provide the National Institute on Aging (NIA) with practical data in two broad areas. First, data will help NIA determine whether the program is easy for trainers to use and effective for older adult students. Second, data collected for this report will be used to provide NIA with recommendations on the best ways and places to distribute the program, the preferred formats, and strategies for obtaining feedback on its usefulness.

The *Guide for Training Older Adults to Access Health Information on the Web* was developed by Stephanie Dailey and her colleagues at NIA. The *Guide* has been designed to train older adults to access reliable health information online. The development of the *Guide* follows by a couple of years the launch of NIHSeniorHealth, a senior-friendly web site tailored for people 60 and older. NIHSeniorHealth was jointly developed by NIA and the National Library of Medicine (NLM). The *Guide* uses NIHSeniorHealth and NLM's MedlinePlus web sites as models for the lessons. It includes a number of senior-friendly techniques to ensure that older adults will understand and retain the information.

Initially the *Guide* was designed to be fully scripted for instructors. That is, the original 12 chapters of the *Guide* provided instructors with specific phrasing and sequencing through the curriculum material. Initial tests indicated a modified pedagogical approach would be more suitable. Subsequently the *Guide's* instructional design retained the scripted portions as "reference anchors" throughout a lesson. Between these scripted reference anchors were curriculum materials that: a) outlined the content; b) provided numerous active discussion questions; c) referenced handouts with detailed hands-on activities for the older adult students.

Early in the pilot test it was determined that the original concept of 12 chapter lessons was simply too long. Consequently the overall outline of the *Guide* included 9 chapters, handouts, and a glossary. The first chapter is an introduction to the Internet. The next four chapters are lessons on how to use the NIHSeniorHealth web site, and the last four chapters, which are increasingly more complex, are lessons on how to use the MedlinePlus website. The current chapter titles are:

1. Introduction: a) About This Guide; b) Teaching Older Adults; c) About NIHSeniorHealth; d) About MedlinePlus
2. Lesson 1: Web Basics

3. Lesson 2: Introduction to NIHSeniorHealth.gov: The Home Page, the Main Menu, Chapters and Images
4. Lesson 3: NIHSeniorHealth.gov: Videos and Quizzes
5. Lesson 4: NIHSeniorHealth.gov: FAQs and the Site Index
6. Lesson 5: NIHSeniorHealth.gov: Exercise for Older Adults
7. Lesson 6: Introduction to MedlinePlus: Health Topics, Search MedlinePlus, Dictionary, Quality Guidelines
8. Lesson 7: MedlinePlus: Drugs and Supplements, Encyclopedia
9. Lesson 8: News, Directories
10. Lesson 9: How to Know if Online Health Information is Reliable

While this is the current table of contents for the *Guide*, some of the data discussed in this report will examine reactions to the original 12 chapters. All data, forms and contact information are contained in three appendices: Appendix A – November 2005 Focus Group; Appendix B – Classroom Pilot Test Lessons; Appendix C – Web Survey and Online Review.

The data collected for this pilot evaluation focused on content, pedagogy, format, usage, distribution and feedback. In this regard there were six study goal questions:

1. How useful is the training program for trainers?
2. How effectively does the program train older adults to access reliable health information online? How senior-friendly is it?
3. What are the best ways to distribute the training program so that it reaches and is used by the greatest number of senior centers, public libraries, and retirement communities?
4. How many senior centers, public libraries, and retirement communities will likely use the program?
5. How many older adults are likely to be exposed to the program?
6. What are the best ways to receive ongoing feedback about the effectiveness and usage of the program?

Next the major components of the research methodology to provide data on the six goals are described. Then the results are presented followed by discussion and recommendations.

## METHODOLOGY

A wide ranging data collection strategy was designed to provide practical process information on each of the six components of the *Guide* (i.e., content, pedagogy, format, usage, distribution and feedback) as those components relate to the six goal questions. The strategy consisted of several components. First in November 2005 the project began with a focus group review of the original 12 lessons with nine instructors. In order to get representative coverage, there were three instructors from rural Maryland, three from suburban Maryland and three from the more urban areas of Maryland. Second, all 12 lessons were taught to pilot classes, where each pilot cohort was taught two lessons in two separate sessions. Table 1 below shows the lesson by region distribution. Table 2 shows the student sample breakdown. Third, there were mid-study and end-of-study curriculum review sessions with curriculum specialist Dr. Ann Benbow. Fourth, an online survey and lesson review was developed and posted for nine individuals from senior centers, nine individuals from retirement communities and nine individuals from libraries from around the country.

Table 1  
Lesson by Region Distribution

class #	team name	date	lesson #	lesson title	
0		pilot test-suburban	09-Nov-05	0	Entire Manual
1	a	pilot test-rural	16-Dec-05	7	Exploring "Exercise and Older Adults"
1	b	pilot test-rural	19-Dec-05	10	Intermediate Navigation: "Dictionary", "Health Topics", "Search MedlinePlus"
2	a	pilot test-urban	14-Dec-05	3	Introducing NIHSeniorHealth: The Main Menu
2	b	pilot test-urban	21-Dec-05	9	Intermediate Navigation: "Introduction to MedlinePlus"
3	a	pilot test-suburban	31-Jan-06	5	Navigating the Health Topics: Videos and Quizzes
3	b	pilot test-suburban	02-Feb-06	11	Intermediate Navigation: "News" and "Drug Information"
4	a	pilot test-urban	14-Feb-06	6	Navigating the Health Topics: FAQs and the Site Map
4	b	pilot test-urban	21-Feb-06	12	How to Find Reliable Health Information Online
5	a	pilot test-rural	03-Mar-06	1	Reviewing the Basics
5	b	pilot test-rural	03-Mar-06	4	Navigating the Health Topics: Chapters and Images
6	a	pilot test-suburban	04-Apr-06	2	Introducing NIHSeniorHealth: The Home Page
6	b	pilot test-suburban	05-Apr-06	8	Working with Windows

Table 2  
Student Sample Breakdown

age range	African American	Caucasian	Other
64 years old or less	<b>2</b> (1f, 1m)	<b>1</b> (1f)	<b>2</b> (2f)
65 – 75 years old	<b>7</b> (6 f, 1m)	<b>11</b> (7f, 4m)	
76 years old or more	<b>2</b> (1f, 1m)	<b>10</b> (5f, 5m)	<b>1</b> (1m)

The pilot test evaluation collected data from seven separate sources. These data sources were as follows:

1. Surveys of older adult students at the end of pilot test classes;
2. Surveys of instructors and observers at the end of pilot test classes;
3. Group interviews at the end of pilot test classes;
4. Instructor interviews at the end of each class;
5. Notes from curriculum review sessions
6. National online usage and distribution surveys;
7. National online lesson reviews.

All data is reported in appendices A through C.

The evaluator Doug Coulson and his assistant Deborah Roberts attended all but two of the pilot test classes. William Connors from PS International attended the other two sessions. The NIA project director, Stephanie Dailey attended all of the pilot classes.

Sufficient financial incentives for instructing, attending the kick-off focus group and participating in the pilot test classes insured a 99% participation rate across all aspects of the program. Furthermore, all participants were professional and remained highly motivated throughout the seven month project.

## RESULTS

In order to guide the reporting of the results Table 3 below provides a six-by-six matrix. The top of the matrix are the six goals and the sides of the matrix are the six components. This is an “incomplete” matrix in that not all the cells within the matrix contain data. Moreover, some data apply to more than one cell and some cells are not applicable (NA). In this regard the recommendations at the end of this report follow the structure of Table 3. Finally, while there is some quantitative information, the strength of the data lies in its qualitative nature. That is, capturing the reactions of the older adult students or insights from the instructors is more fundamentally a qualitative activity. The quality and content of the remarks of the participants constitute the bulk of the data record, and the numerical data provide support for these narrative results.

Table 3  
Goals by Components Matrix

	Utility for trainers	Senior friendly	Distribution strategies	Likelihood of use	Frequency of use	Distribution method
Content						
Pedagogy						
Format						
Usage						
Distribution						
Feedback						

There are six sections to the results portion of this report. The first section summarizes the kick-off focus group. In section two the data from the 2005 classroom pilot testing is examined. Section three looks at the first curriculum review session in December 2005. The fourth section examines the classroom data from the 2006 pilot testing. Then the data on the second curriculum review session is reported. Finally the data from the online surveys and lesson reviews is presented.

**SECTION 1: November 2005 Kick-off focus group.** The purpose of the kick-off focus group was twofold. First, it was an opportunity to meet the instructors for the first time and form teaching teams. Second, the meeting served the dual function of acquainting the instructors with the *Guide* and teaching requirements as well as soliciting preliminary feedback on the *Guide* from their experience base. All selected instructors had a background in teaching computer skills and experience working with older adults.

During the focus group the content, pedagogy and format of the *Guide* were reviewed and discussed. In addition ten specific areas covered on the wrap-up questionnaire were discussed. These ten areas are: 1) guide introduction; 2) NIHSeniorHealth chapter introductions; 3) NIHSeniorHealth chapter content; 4) NIHSeniorHealth chapter exercises; 5) NIHSeniorHealth chapter pedagogy; 6) NIHSeniorHealth chapter format; 7) MedlinePlus chapter content; 8) MedlinePlus chapter exercises; 9) MedlinePlus chapter pedagogy; 10) MedlinePlus chapter format. The focus group met at the O’Malley Senior Center in Odenton, Maryland. Attending

were all nine instructors, Stephanie Dailey from NIA, and Doug Coulson and Deborah Roberts from PS International.



## Pedagogy

While participants liked the detail provided by the guide, the general reaction was that the scripting seemed stilted. In this regard, such close scripting (e.g., *do*, *ask*, *say*) might be useful for a completely inexperienced instructor but would be quickly by-passed as he or she gained confidence with the material. There were several suggestions that emerged from the discussion on the scripted lessons.

First, scripted pages could be formatted opposite-left of more descriptive pages. This would allow an instructor to easily move from the script to descriptions as they gained confidence with the materials.

Second, because many seniors might either be shy about "reading out loud" or feel that the "reading out loud" requirement too simplistic, it was suggested that this part of the curriculum script be rewritten as questions: "*Who would like to read about ...*". Furthermore this would prevent embarrassment for those who might have a difficult time seeing the text. In addition it was suggested that rather than prescribing sections to be read aloud, that the students be allowed to select their own web areas, which they could then choose to share with the class, or not. Several participants suggested opening exercises whereby students would write health interest areas on 5x7 cards. Perhaps students would write what they considered to be health interest areas of a family member or friend, thereby directing attention away from health matters that may be of a more personal nature. In turn cards would be collected, and then selected by the instructor. Health topics on randomly selected cards would then constitute opening exercises.

Third, one reviewer suggested examining scripted questions. This reviewer said that from a pedagogical perspective, each question asked of the students should relate to learning objectives or assessment of learning. For example on page 22 of the *Guide* the three questions on topics (i.e., *what, how, newest*) might be oriented toward a learning objective like *thinking critically about health topics*. In this regard rather than being asked *what are the topics* and *how many topics*, one might ask *how many topics deal with major health concerns?* Or, *how can you tell when a new topic is added?* By slightly reframing the questions, the focus switches more closely onto "critical thinking" rather than just re-enumerating things from a list.

Fourth, in addition to looking at how curriculum questions encourage critical thinking, some of the preliminary activities associated with parts of the computer could be less nomenclature oriented and more practice oriented. For example, rather than just identifying the mouse, students would be engaged with hands-on activities with the mouse. One reviewer noted that for some new computer users it takes practice to translate the movement of a mouse on a horizontal plane to the movement of a cursor on a vertical plane. This suggestion views the pedagogy as more hands-on and constructivistic rather than descriptive and nominal.

Finally, an important part of lesson pedagogy for this population would be to design the lessons to help develop a more personal connection to the subject matter. That is, design the lessons such that learner searches are focused on health topics directly relevant to the student. An example exercise using 5x7 cards was described above. Furthermore, by developing lessons that create a more personal connection the lesson pedagogy would be even more hands-on than it currently is.

## **Content**

The most salient comment on content dealt with the fact that this curriculum is not about finding health information, but finding *quality* health information. Both NIHSeniorHealth and MedlinePlus web sites offer *quality* health information. While the intent of the *Guide* is to teach seniors to explore and navigate these two web sites, the guide itself could emphasize more the difference in quality between content found on such credible sites like NIHSeniorHealth and MedlinePlus, and other "health oriented" web sites. For example, at the outset in the introduction to the guide the phrase "*credible* online health information" is used (page 3). Right at the outset the concept of *quality* information could be emphasized, perhaps with a contrasting example of *poor* information from other health web sites.

Several reviewers suggested adding a couple of more positive "tips" (i.e., page 2 ff). Specifically, older adults come to a class with a life of experiences, a focused interest in health and are generally supportive of one another's efforts to learn something new. In this regard the "tips" section could begin by orienting instructors to the strong attributes of incoming seniors. Furthermore the leading "tips" could deal with these positive

attributes and then move into other matters such as the need to speak slowly and clearly, and the importance of being patient and flexible. Also the content in the "tips" section could include the importance of hands-on activities such as manipulating the mouse, where such activity early in the curriculum would uncover issues associated with stroke, arthritis and Parkinson's disease.

Overall reviewers did not express concern about the content *per se*. That is, the content material on learning about how to search online for health information within the curriculum was valuable, useful and important to teach and learn. However, the overall content comment concerned the basic level of the content. In this regard reviewers suggested more practical exercises and more “hands-on” built into each lesson. Hands-on would help alleviate the sometimes too basic material. Moreover, reviewers wanted to see a better integration of graphics with text. In particular some of the content presented was simply too text oriented. To reduce reliance on pages of text it was suggested that there be more interspersed graphics, particularly screen shots. Screen shots were seen as illustrative, useful and effective for teaching content related to navigating, evaluating and communicating parts of a web site. In addition to more hands-on classroom activities one reviewer suggested building into the guide home practice exercises.

### **Format**

The *Guide's* introduction section got high marks. It is concise and provides the prospective trainer with useful information about the availability of handouts (always very important), tips about teaching older adults, and brief overviews of NIHSeniorHealth and MedlinePlus web sites. The brevity of this introductory section is considered critically important to highlight both the content of the *Guide*, and that the *Guide* itself will not be overwhelming. The familiar adage that *first impressions count* is important with curriculum materials. If the first impression of a set of curriculum materials is overwhelming (in the name of comprehensiveness), its usefulness will be greatly diminished. Instructors should be able to pick up a trainer's guide and quickly (within 5 pages) determine its purpose, scope and audience. The introductory section of the NIA *Guide* does this very successfully.

The introductory section also sets the "tone" for the rest of the document. Since most of the reviewers liked both the use of color and screen shots, it is recommended that some graphics or pictures (e.g., screen shots) be included in the introductory section. This will be discussed further below.

In addition to the visual look-and-feel of the opening section, consistent formatting is critical. Specifically, reviewers commented on fonts, indenting, use of bullets, line spacing, outlining and boxes. Reviewers suggested a serif font (e.g., Times Roman) over a sans serif font (e.g., Arial) because it is easier to read. Fonts at 14 points were considered good, and not smaller than 12 point. Reviewers noted that indenting was not consistent, even in the first section. For example, on page 3 the bullets are indented and page 4 the bullets are flush left. The bullets themselves are sometimes round and sometimes square. It was suggested that line spacing be "opened up" slightly, with more

spacing between topics than within topics. Outlining sometimes did not follow accepted practices in that reviewers found instances where there was only one subtopic under a topic heading. Another reviewer did not care for the use, or perhaps overuse, of boxes.

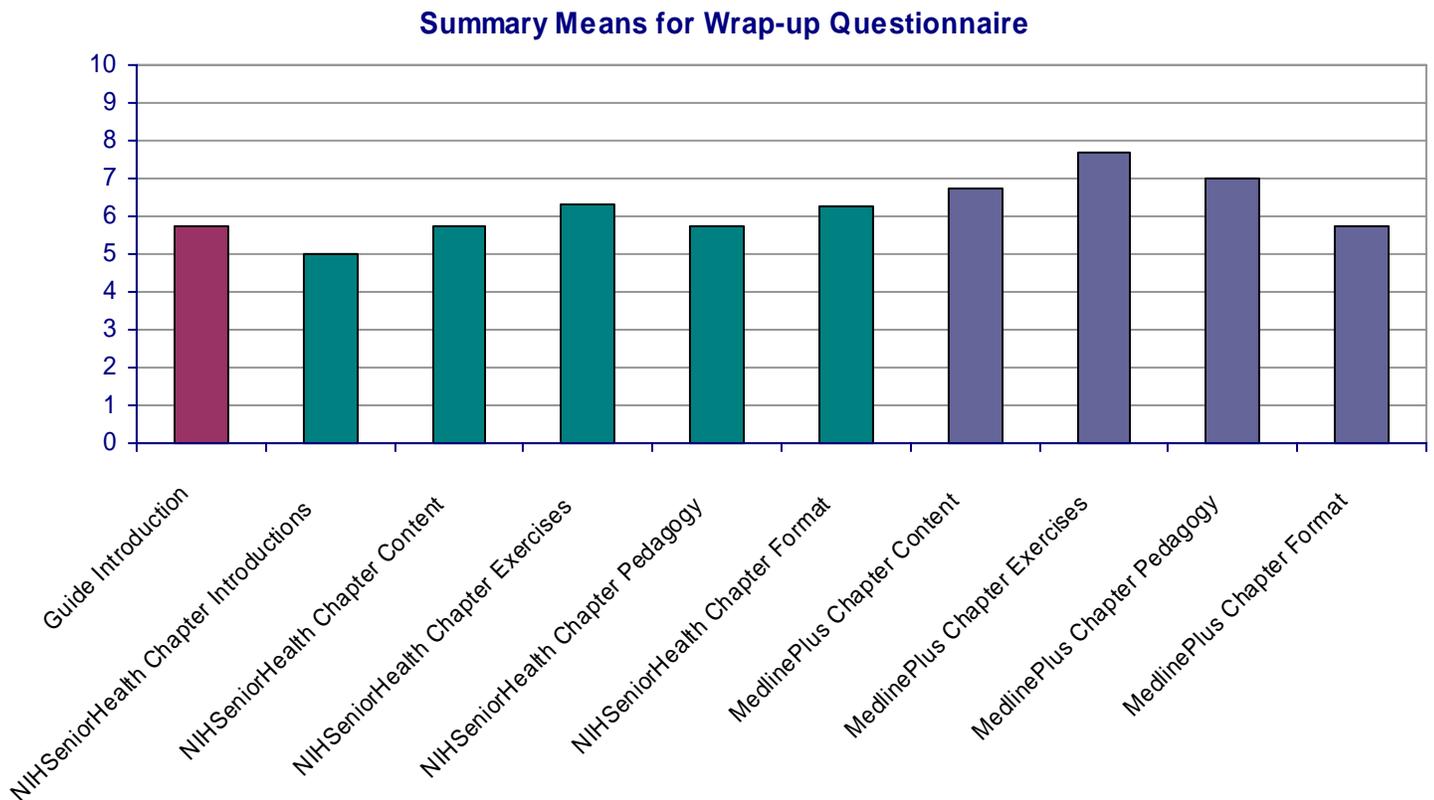
Several suggestions emerged regarding formatting the beginning parts of each lesson. First a "Recap" and "What's New" (e.g., lesson focus) followed by activities and materials needed was useful. Estimated time to do lesson was considered a very valuable item for instructors, even if time is estimated. It was suggested that "tips" be put at the beginning of each lesson, rather than at the beginning of only some of the lessons. The other option would be to put "tips" only in the beginning section but not at the start of each lesson.

The discussion of closely "scripting" each lesson yielded several format suggestions. If the scripting aspect of the lesson were retained it was suggested that there be two facing pages. On the left page would be the lesson scripting (e.g., *do, say, ask*). On the facing right page would be the associated lesson content in a descriptive format. At the focus group it was argued that the advantage of this format would be that as a beginning instructor grew more confident with the script on the left side of the page, they could move over to the right side of the page in order to work with the students in a more descriptive fashion.

## Ten Guide Areas

This section summarizes the *Wrap-Up Questionnaire* responses relative to ten sections of the *Guide*, with the focus on content, exercises, pedagogy and format as they relate to the NIHSeniorHealth and MedlinePlus sections of the *Guide*. Figure 1 below summarizes the average responses for the ten sections, where "1" means poor, "5" means adequate, and "10" means outstanding.

Figure 1



All lessons were rated as *adequate* or above on the 10 point scale, with the MedlinePlus chapter exercises getting the highest average rating at 7.75. It is worthwhile to note, in contrast, that NIHSeniorHealth format received a higher average rating than MedlinePlus format. Given the focus group discussion on November 9<sup>th</sup>, a plausible reason for this would be the use of color in the NIHSeniorHealth chapters and the lack of color in the MedlinePlus chapters. In both "sections" (i.e., NIHSeniorHealth and MedlinePlus) the average ratings for exercises were the highest relative to content, pedagogy and format. It is reasonable to say, particularly in light of the focus group discussion, that *hands-on, active learning* was a high pedagogical value for the reviewers.

1. Guide Introduction. The average rating for this section was 5.75. Surveys indicated that its succinctness was important. Furthermore the descriptions of NIHSeniorHealth and MedlinePlus were sufficiently descriptive. One respondent suggested using the word *instructor* in lieu of the word *trainer*, on the basis that it was more consistent with curriculum materials. The format changes were: 1) wider right margin; 2) number the paragraphs in section 1.0; 3) use serif font (e.g., Garamond); 4) work to make the numbering consistent.

2. Chapter Introductions (NIHSeniorHealth chapters 2-8). The average rating for this section was 5. The upfront reminders for instructors (e.g., what they will cover, time involved, materials needed) were strong positives for this section. Also, the fact that these reminders were presented succinctly was positive. There was a call for more handout screen shots. Handouts should be titled in addition to having numbered designations. When handouts are titled the instructors will have a sense of content to be covered. On bulleted items that include repeated phrases like "*students will ...*", put that phrase at the top and start each bullet with what follows.

3. Chapter Content (NIHSeniorHealth chapters 2-8). The average rating for this section was 5.75. While the content progressed logically, it was viewed by most as too basic. In this regard it was suggested that the curriculum materials give the prospective instructor more latitude in gauging their students' level of knowledge. This might involve building in a pre-assessment so that instructors have a sense of their audience's computer and Internet searching skills. One survey response noted that the numbering is not consistent.

4. Chapter Exercises (NIHSeniorHealth chapters 2-8). The average rating for this section was 6.3. The sound and video were liked (if available). The "*checking for understanding*" was successful but the *post-it notes* did not make as much sense. It is important not to refer to exercises as "tests". The primary consideration is to make the exercises fun, not tests. Suggestions for new exercises focused on realistic scenarios. For example: "*You are told by your doctor that you have beginning cataracts. Go to the NIA Senior Health web site and find out what the treatment and prevention is for this condition.*" Another suggestion was to follow-up a search, with a more specific search.

5. Chapter Pedagogy (NIHSeniorHealth chapters 2-8). The average rating for this section was 5.75. Several liked the pedagogy with the following provisions: 1) more exercises; 2) less of the "DO" "ASK" "SAY" that seem stilted. One participant suggested instead of the "DO" "ASK" "SAY", use phrases like: "Do you see ..." or "Can you tell me ...". Such phrasing would create a more natural flow for the materials. Additional handouts should be as real-world oriented as possible.

6. Chapter Format (NIHSeniorHealth chapters 2-8). The average rating for this section was 6.25. The color worked for most survey respondents. One experienced instructor thought that the color was distracting but would probably work with beginning instructors. Color for handouts might be too expensive for prospective users of the curriculum. Right margins could be more generous and a larger font would be useful.

The general recommendation was to set-up a format style and stay with it throughout the lessons.

7. Chapter Content (MedlinePlus chapters 9-12). The average rating for this section was 6.75. Generally the content was liked better than the previous group of lessons. Specifically, one instructor liked that chapter 12 started with a discussion that then transitioned into the class material and hands-on for that lesson. However, another student noted that chapter 12 is qualitatively different from the previous chapters. In this regard either previous lessons could be made more like chapter 12, or chapter 12 could be simplified a little bit so that chapter 12 is not so different from the previous lessons.

8. Chapter Exercises (MedlinePlus chapters 9-12). The average rating for this section was 7.67. Although a couple of instructors thought that some of the exercises in these chapters were too basic, most liked the exercises. The exercises were good for learning how to navigate the site for information purposes. One respondent suggested that the lessons in this section emphasize that the students are in a "medical" encyclopedia (i.e., lesson 10). One recommended exercise involved going to a non-NIH web site to cross check quality of the information at that site. Another exercise might propose a complicated disease name (e.g., ankylosing spondylitis) and point out that one does not need to know the full spelling as the diseases are listed alphabetically.

9. Chapter Pedagogy (MedlinePlus chapters 9-12). The average rating for this section was 7. The strength of the pedagogy was that it was easy to follow and had excellent hands-on work for the students. For example the "focus of the lesson" was clear, particularly relative to chapters 2-8.

10. Chapter Format (MedlinePlus chapters 9-12). In these chapters respondents noted that the use of color and highlighting seemed sporadic and inconsistent. Also, because these were more "advanced" lessons, one respondent would have preferred lessons that were less scripted. Another noted that the colors which denoted changes were missing. The inconsistent format interfered with the sense of "flow" of the materials. For example the use of boxes did not seem consistent.

The November 9<sup>th</sup>, 2005 meeting concluded with division into three teams:

- (1) Rural: Carol, Kay, John, Kelly
- (2) Suburban: Francis, Dick, John
- (3) Urban: Don, Michael, Staton

Members of these teams conferred briefly at the end of the meeting and planned how to coordinate their efforts over the coming months to test the revised manual on a total of 36 older adults (each team having responsibility for an assigned combination of teaching and observing a total of 4 lessons with a total of 12 students).

**SECTION 2: 2005 Classroom Pilot Testing.** In December 2005, four lessons from the twelve lessons of the *NIA Health on the Web for Older Adults Training Guide* were pilot tested. Lessons #3 (*Introducing NIHSeniorHealth.gov*) and #9 (*Intermediate Navigation: "Introduction to MedlinePlus*) were pilot taught at Anne Arundel Community College in Arnold, Maryland. Lessons #7 (*Exploring "Exercise for Older Adults"*) and #10 (*Intermediate Navigation: "Dictionary", "Health Information", "Search MedlinePlus"*) were pilot taught at the Lynn Ferris Center in Chestertown, Maryland. Each class consisted of two sessions (i.e., lessons 3 and 9, or lessons 7 and 10) and was attended by six students. Students had a range of computer skills from beginning to advanced. Students varied in age from 64 to 82, one student was African American, and the remaining 11 students were White. Overall 70 percent were female.

The instructors for lessons 7 and 10 followed the flow and sequence of the curriculum materials very closely. In contrast, the instructors for lessons 3 and 9 did not follow the flow and sequence of the *NIA Trainers Guide*. This circumstance is discussed below, particularly in light of the fact that the curriculum is intended to be distributed nationally, where available instructors may be unfamiliar with computers and teaching about websites to others.

Lessons 3, 7, 9 and 10 were revised as a result of a focus group on November 9<sup>th</sup>, 2005 held with the current group of instructors. These 4 lessons were used in conjunction with a *Glossary* and *Handouts* which contained various exercises.

### **Lessons 7 and 10**

The instructors for lessons 7 and 10 were very successful in following the curriculum script. The content of each lesson did not seem too long for designed lesson length of 90 minutes. Instructor for lesson 7 spent time beforehand to rehearse separate from a class, the flow and sequence of that lesson. That rehearsal resulted in a delivery that was smooth and natural. For example, the instructor for lesson 7 had all the lesson pages unbound and laying flat on the desk in front of the classroom. This allowed the instructor to pick up a page from the curriculum guide and read it in such a way that it did not appear to be read – in other words there was a natural and fluid flow to the curriculum lesson, even though that lesson was scripted. The instructor for lesson 10 was equally well prepared and consequently delivered a lesson that flowed in a smooth and natural way.

The instructor for lesson 7 indicated that the content as well as the exercises and handouts worked well for the students, especially the *Fred* exercise. The instructor saw the sequencing as logical and the handouts were "good". Format got the lowest rating at 8 (on a 10 point scale), pedagogy and content were rated at 9, exercises at 10.

From the observer's perspective lesson 7 lacked student engagement. For example, the instructor was not able to get students to ask questions. This was in part due to the observation that there were too many handouts for this lesson and consequently too much *stop-and-go* during the lesson. The observer suggested more group oriented

exercises, fewer exercises and not to use the video with dial-up connections (too slow for lesson coverage).

The instructor for lesson 10 felt that the material was logically sequenced, that the exercises reinforced the material being taught and that the lesson plan made it easy to teach in a senior-friendly fashion. The instructor liked the *descriptive* approach of the lesson (versus a more *scripted* approach). However the instructor did indicate that there was not enough time within the lesson to ask the students questions or generate student interaction with the instructor. Also, the instructor noted that it was difficult to find answers on the handouts. Finally the instructor noted the need for more places within the lesson for summarizing as well as free time to search other health topics to reinforce learning.

From the observer's perspective the instructor for lesson 10 was able to ask the students questions, although the students themselves may not have enough opportunity to ask their own questions. The observer noted that the students appeared comfortable during the lesson. The observer also noted that the cataract exercise may not have worked as well as intended. Also, the students went through a lot of screens and were sometimes out of screen synch with the instructor.

For lesson 7, students generally rated the level of difficulty as *easy*, they liked the *Fred* exercise story and overall gave the lesson content, teaching style and format high marks.

For lesson 10, once again the instructor was highly rated (i.e., flexible, patient, excellent pace). Students liked being able to pick a category from the MedlinePlus alphabet, although one student would have liked more time to explore other health topics.

Four additional points from the evaluator:

- Flow and sequence of lessons work well when instructor is prepared
- Incorporate more time for student interaction
- Build-in plans for different levels of technology (e.g., dial-up connection and video)
- Include an instructor's tip sheet on how to deliver lesson with such details as keeping your pages open and loose on the front desk

### **Lessons 3 and 9**

The instructors for lessons 3 and 9 were not very successful in following the curriculum script. It was not easy to track the instructors' progress through the lesson because the instructors, who were very skillful, tended to follow their teaching instincts rather than the written flow of the lessons. The content of each lesson did not seem too long for designed lesson length of 90 minutes. Half the students rated themselves as *medium* users (use at least weekly) and the remainder as *high* users (use a computer nearly every day).

The instructor for lesson 3 listed three things that were particularly successful for the students: 1) overall content; 2) size (length [?]) and color of handouts; 3) contrast exercise and navigation exercise. On the other hand the instructor wrote that “changing text size” and “reading name topics from the screen” was less successful for the students. The instructor suggested structuring lessons for different levels of student ability (e.g., beginning/intermediate).

From the observer’s perspective the lesson 3 guide was clear in directing the instructor through the content and sequence of tasks. Furthermore the screen captures were useful for providing direction to the students. The observer noted that the exercise using the 3x5 card to write down medical conditions of a friend was a good introductory mechanism. The observer noted that discussing how information could be used would be helpful to students as well as more information on how to evaluate the reliability of information on the web. Finally the observer suggested organizing the table of contents into three more general chunks: 1) computer basics; 2) Basic web-use techniques and NIHSeniorHealth.gov; 3) MedlinePlus and advanced health information resources.

The instructor for lesson 9 felt very comfortable teaching this lesson. Handout 9A provided good exercises for review, reinforcement and evaluation. However by introducing the three questions earlier it would be possible to make handout 9A more interactive. It is important to provide information within the *Guide* to help instructors be sensitive to the possibility that being called upon to read aloud might be embarrassing to some participants (fear of speaking in front of others; poor eyesight; poor reading skills). Also, because MedlinePlus is so extensive it might be helpful to include in the *Guide* a list of the types of materials offered by the website. An additional suggestion was made by this observer: instead of focusing on web navigation throughout the lessons (which can be redundant after 2 or 3 lessons), focus on *exploring health interests*.

For lesson 3, students generally rated the level of difficulty as *easy*, and they rated lesson clarity as high. Also students gave the lesson overall high ratings for content, teaching style and format.

For lesson 9, students generally rated the level of difficulty as *easy*, and they rated lesson clarity as high. Also students gave the lesson high ratings overall for content, teaching style and format. Several students asked to have more information on where this lesson fit into the overall program, and in this regard for these students, the lesson lacked some clarity. Generally students wanted to continue with these kinds of lessons.

Three additional points from the evaluator:

- Lessons 3 and 9 were taught by experienced instructors, who did not for the most part follow the sequence and flow of the curriculum as written;
- Content of lessons was considered “basic” by instructors and consequently they freely departed from curriculum;
- Despite the departure from the lesson flow and sequence, both instructors viewed the lessons as content appropriate and logical in the sequencing

General observations from the evaluator

- General tone of comments from the instructors indicate a need for:
  - interactivity
  - time for students to interact (i.e., ask questions)
  - fewer but more focused and interactive exercises
  - more opportunities to browse on their own
  - instructions about how to deal with different technological circumstances in each classroom
- Addition observations:
  - Following a curriculum script can work, especially if practiced
  - Consider adding something in a “teachers guide” within the *Trainer’s Guide* about how to follow a teaching script in a natural fashion
  - Allow more time for student interaction
  - Lessons as tested tended to be within the allotted time frame of 60 to 90 minutes
  - Provide more context if lessons are used in a stand-alone manner
  - Examine exercises such that they would not break-up or interfere with the natural flow of the lesson
  - Develop a short “marketing piece” that, in a single page, lists the learning outcomes of the *Trainer’s Guide*.
  - While lesson time limits at the moment seem accurate for these four lessons, rewrites which include more interactivity.

**SECTION 3: January 2006 Curriculum Review Session.** On January 6<sup>th</sup>, 2006 Dr. Ann Benbow participated in a curriculum review session at the National Institute on Aging with Stephanie Dailey and Doug Coulson. The purpose of this session was to critically examine the current curriculum guide in terms of content, pedagogy and format. Ann Benbow is a nationally recognized curriculum development specialist with expertise in developing curriculum for older adults.

The *Guide's* content was not only considered strong but a needed contribution as an Internet guide. That is, the Internet has grown thick with sites providing health advice. Some of these sites provide useful and accurate health information and many do not. The content of the *Guide* not only focuses on two (i.e., NIHSeniorHealth and MedlinePlus) highly credible health sites, it helps the user distinguish between sites that are credible and those that are not. In addition the content of the *Guide* includes many useful tips on being sensitive to the needs of older adults as well as specific things that one can do online to assist getting the information in a comfortable fashion. For example, the *Guide* goes through procedures for increasing font size, changing screen colors and brightness, and using audio. One content area where the guide needed more material was introducing the student unfamiliar with computers to the basics of signing on and navigating the Internet. Dr. Benbow agreed to produce an introductory lesson. This lesson was subsequently produced and provides information on the function of the mouse as a pointer, right and left clicking, and orientation to screen symbols and rules of navigation.

The *Guide's* pedagogy was extensively discussed. At this point in the *Guide's* development large portions of the curriculum material were carefully scripted in terms of what-to-say and the sequence of the material within a lesson. While careful sequencing was a good thing, it was felt that the current *Guide* was too scripted, particularly the lessons related to NIHSeniorHealth. In this regard it was recommended that verbatim scripting be substantially reduced and replaced with guided descriptions. Guided descriptions would give potential instructors a general sense of content but not exactly what to say to the student. In addition to making the pedagogy less prescriptive it was recommended at this review meeting to make it more interactive. Various small group strategies were discussed including the use of more paired discussions in response to questions about information gotten from the web pages. While the curriculum had a number of these interactive activities, particularly in the later lessons, the inclusion of more of them more evenly distributed throughout was recommended.

At this meeting the *Guide's* format was seen as too busy. What contributed to its "busy look" was the inconsistent page layout from page-to-page and the overly extensive use of icons to denote particular things (e.g., "do", "say", "handout"). During the discussion a couple of new formatting designs were suggested. For example, use the scripted pieces as "banners" on the top of a given page, dispersing these scripted banners about every two pages or so. Another suggestion was to put instructor tips in one third vertical boxes along the right margins. The formatting and pedagogical recommendations were tested during the second half of the classroom pilot tests in early 2006.

**SECTION 4: 2006 Classroom Pilot Testing.** Lesson #5 (*Exploring Health Topics: Videos and Quizzes*) and lesson #11 (*Exploring MedlinePlus: “News”; “Drugs and Supplements” and “Directories”*) were taught at the Bowie, Maryland Senior Center on 1/31/06 and 2/2/06 respectively. There were six students (5 female and 1 male; 2 African American; 3 White; 1 Japanese) attending these two lessons. The lessons were taught by Fred Hanna and Dick Smith. Observers for lesson 5 were Dick Smith, Francis Ennels, Doug Coulson, Deborah Roberts and Stephanie Dailey. Observers for lesson 11 were Francis Ennels, Doug Coulson, Deborah Roberts and Stephanie Dailey.

## **Lesson 5**

Lesson 5 was completed in one hour and 10 minutes, about 10 minutes less than the suggested 80 minute time allocation. The *Getting Started* piece took only about 5 minutes, considerably less than the allotted 20 minutes in the curriculum. The stated lesson length of 45 minutes seemed good, although with more reading out loud by the students, lesson 5 could exceed that 45 minute allotment. Overall, however the curriculum time estimate for lesson length was very good.

The instructor read the Maria story. This was an opportunity to get the students engaged by reaching out to them to read parts of the story, which is more engaging than simply being read to.

In the early part of the lesson progression, the lesson seemed to “jump” from the Maria story to internet screens. A simple verbal transition linking the Maria to the purpose of examining internet screens would be helpful.

The Maria story was effective in that it was brief, realistic and sufficiently engaging. In this regard somehow “pull” in more through the subsequent examination of internet screens. For example, “here’s a screen that might be helpful to Maria”.

While this observer felt that the students needed more direction when asked to pair-off to discuss a video, the students in the post-lesson interview did not feel this way. From the observer’s vantage point, providing the instructor with a couple of questions that students could ask each other during the paired discussions would be helpful. However the students appeared to be fine with general directions. It might be useful to consider providing the instructor with a couple of suggested discussion questions.

The quiz came up rather suddenly. It may be useful to provide the instructor with several sentences that justify the merits of the quiz, such as “*Quizzes are useful to help the web user learn and retain information.*” During the post-lesson interview one of the students made this point (i.e., quizzes help learning).

When waiting for the quiz to be completed it might be useful to provide the instructor with ways to ask the class when they are done with the quiz. For example:

*“How is everyone doing?”*  
*“I’ll come around now and check on your progress.”*  
*“When done, please put your pen on top of the monitor.”*

If the technology permits students to watch their own video, there might be some direction to the instructor to lead a discussion in which the students compare and contrast their individual choices of the videos.

Through the curriculum, provide instructors with “*touchstone reminders*”. These “*touchstone reminders*” would simply be reiterations throughout the lesson of the 3 to 4 lesson outcomes presented at the start of the lesson. This would not only help focus the students’ attention on the 3 or 4 key outcomes, it would provide the “gluten” that holds the lesson together; something that would be particularly important when there is a lot of detail and/or web browsing.

While reading the “script” portions of the curriculum may seem awkward to the instructor, it does not appear to be so to this observer. In this regard a paragraph in the “instructor’s manual” on how to use the guide might briefly reassure potential instructors of the usefulness of this feature. That is, this “script feature” obviates the need to know the lesson in detail, helps for a professional delivery and assists the instructor’s navigation through the lesson. The script provides a punctuated flow to the material providing navigation “lights” along the way through the lesson. This is an important feature of the curriculum and should be highlighted in the beginning of the curriculum guide.

Background color for script boxes should be uniform throughout – the grey works well. Also, as much as possible, positioning the script boxes in the same place on each page would facilitate their use.

Provide instructors with short verbal phrases to help relax students. For example:

*“Take your time”*  
*“There is no rush”*  
*“I’d like to help, raise your hand if I can assist”*  
*“You can’t hurt a computer – the worst that can happen is that you will need to reboot”*

Instructors should be reminded somewhere in the Guide (perhaps in the beginning) that they should spend some time actually looking at students’ screens, especially if the instructor is working alone.

## **Lesson 11**

Lesson 11 was also completed in one hour and 10 minutes, about 15 minutes less than the suggested 85 minute time allocation. Like lesson 5, the *Getting Started* piece took only about 5 minutes, considerably less than the allotted 20 minutes in the curriculum. The stated lesson length of 40 minutes seemed a little short relative to the

detail of the MedlinePlus website. In particular additional time could be allotted to skimming diseases. Overall, however the curriculum time estimate for lesson length was very good.

It was this observer's sense that things were too quiet at the start of the lesson. In this regard a quick engage activity is suggested to get folks interacting and comfortable with the lesson set up. For example, each lesson could have built into it a variation on "tell me your name and where you are from" activity. Such activities might be things as simple as:

A current event: *"Anybody going to watch the Superbowl this weekend?"*

A class circumstance: *"How were the roads today?"*

A personal observation: *"I noticed that this Center is advertising the website we are discussing today."*

Morning Edition of NPR punctuates their newscasts about every 30 minutes with an interesting, if odd, news tidbit (Bob Edwards started this). Perhaps this idea could be built into the start of each lesson as part of the *Getting Started* piece.

Some students were very slow (but diligent) when writing answers to questions. It might be useful to suggest a strategy for instructors to collect/review the work of faster writers, giving others a longer and more comfortable time frame to answer a question.

Dialogue and group discussion from the bottom of page 3 of lesson 11 was very successful. Students were very interested in questions on Handout 11A. Furthermore they appeared to get more interested as the instructor went through the 5 questions on that handout.

On pages 5 and 6 of lesson 11 (i.e., *read the page silently; scan the articles*), the instructor allowed less than 15 seconds, and in a couple of cases only 5 seconds. On the printed page a small direction such as "*allow the students 30 seconds to scan the articles without clicking on them*" would slow the instructor down, and perhaps make the students feel less rushed.

Initially during the post-lesson interview none of the students said that they felt rushed. However upon pausing a couple of the students did say that at times they felt rushed. Lesson 11 covers a lot of detail, thus it may be better to cut down from 3 parts to 2 parts, and actually go into some more detail for the two parts. This idea also came out during the lesson 11 debriefing.

Lesson 11 has a lot of clicking and navigation activity. This circumstance increases the chance that a student might go astray. In this regard the curriculum should remind the instructor to get behind the students and look at their screens more frequently. Furthermore, it might be useful to build in a place every several pages that:

1. reminds students to look at the “white monitor”, or look at the screen in front of the room;
2. reminds students which of the 3 or 4 lesson outcomes have been just covered, or is just about to be covered.

During the lesson it was observed that the instructor wandered a bit on his own searches. While such an event is to be expected, it might be useful to give the instructor a “centering instruction”. That is, return to a common place and then insure that all the students are at the same place.

### **General Comments**

Overall the lessons were very successful. The strongest indication of this came during the group interview on the second night (lesson 11). When asked “*what were the two most important things that they learned during this lesson?*”, one student responded and several concurred that the learning had to do with not a specific item but that there are so many items. Furthermore, the lesson gave the students a sense that they could not only pursue details on a particular item but that they could cross-validate medical opinion from their own doctors. This was the most complex learning outcome stated at the beginning of the lesson: “*students will learn how to find answers to health questions*”.

The “script boxes” though they may have felt awkward to experienced instructors did not appear awkward to this observer. Furthermore the script boxes provided sufficiently frequent markers throughout the lesson that instructors were able to cover the content in the time allotted.

“Script boxes” – their use and function – should be a strongly highlighted feature in tips for instructors at the beginning of the guide. It can be acknowledged that more experienced instructors may not feel the need to use them, but they do serve to keep the lesson flowing smoothly and within the allotted time.

There seem to be too many icons. From this observer’s perspective the most important icons would be:

1. icon for handout
2. icon for questions to ask students
3. icon for “reminding” students of 3 or 4 learning outcomes (a way of establishing continuity and location within the lesson)

These 3 icons would sort of be “action icons” for the instructors – when to refer to a handout, when to ask a question, when to remind students what learning outcomes have been covered and what remains (like what Jim Lehrer does during the News Hour). The “script” would not need an icon as it would always be clearly indicated in a box that spans the page. I like the small “screen shot” in the top right corner of each page with the

main topic to its left. The presence of these icons, the script box and the screen shots in the top right corner could be briefly described in the instructor's guide to the Guide.

Lessons 1 and 4 were pilot tested in Salisbury Maryland on March 3<sup>rd</sup>, 2006. The instructors were Kay Crouch and John Terebey. The rural distances involved for the students and instructors made it more sensible and efficient to teach these two lessons in one day. Lesson 1 was taught in the morning. A catered lunch was brought in, and lesson 4 was taught in the afternoon.

### General comments

Lesson 4 had better graphics than lesson 1. For example, page 8 of lesson 4 contained an excellent illustration of a flip chart, whereas lesson 1 on pages 4 and 6 only referred to using a flip chart in the text. The visual illustration of a flip chart is very helpful.

Although some relatively minor sequencing problems with lesson 4 disrupted its smooth delivery in places (see below), the use of graphics in general in lesson 4 created a more readable lesson than lesson 1. The addition of graphics, italics, and bold to lesson 1 will greatly improve it.

Both lessons were comfortably set up to take between 60 and 90 minutes. During the pilot test on March 3<sup>rd</sup>, 2006 lesson 1 took 80 minutes to complete, and lesson 4 took 60 minutes to complete. Because the instructor of lesson 4 skipped some sections, the length of lesson 4 is likely to be 90+ minutes.

At the beginning of a class ask each student to briefly introduce themselves and indicate their level of computer knowledge. At the very least knowing the computer expertise level of students will engender patience among the more experienced for the less experienced.

### Tips for Instructors

One tip should concern "*When you get lost*" – this tip would point to how the script text boxes are intended to be read (in a natural fashion) verbatim and can thereby serve as lesson *anchors*. A lesson *anchor* helps the instructor get back on track by giving them something tangible to grab onto when the lesson goes off track. Another anchor might be the verbatim questions to ask the students, and a third anchor might be to give out a handout.

*Lesson Overview* can be a terrific "anchor", particularly if it can be consistently referred to in the curriculum materials as well as during the lesson. In the curriculum materials the *Lesson Overview* can be mentioned not only in the Tips for Instructors, but also on the first page of each lesson. The language describing the *Lesson Overview* should be identical in "Tips" and in the beginning of the lesson. During the lesson the *goals* of the lesson can be referred to periodically – as anchors for the instructor, as

milestones for the students. For example, a mid-lesson box might reiterate the X goals of the lesson, and say, “*we have covered the first two goals of the lesson, and three more to cover before the lesson is completed.*” Naturally during the wrap-up of the lessons, the fact that X goals have been covered can be similarly stated.

A tip that emphasizes going slow and having fun was discussed. Perhaps just a little mantra motto: *don’t hurry and have fun ...*

Using a white board, chalk board or flip chart does require skill. Skill not to make the writing too small or too large, skill in making the writing legible, and skill in being able to concisely summarize student comments. This may be something to put into the Instructor’s Tips. Perhaps a graphic would be useful illustrating two white boards, where one is well organized, proportional and legible and the other illegible, and visually confusing. This illustration would be accompanied by an instruction like: *before each class it is useful to imagine your white board or flip chart, and visualize your writing as concise, legible and proportionally distributed across the available space. If there is time when you write out lesson goals before the class starts go to the back of the classroom to see if what you have written is readable, concise and proportionate to space allowed.*

Tip: do not apologize for reading verbatim script boxes. In most instances students will never notice, especially if instructor looks at the class periodically while reading from the script box. Also, a little rehearsal of reading the script boxes before the class begins will go a long way to creating a natural look to the lesson content.

## Lesson 1

Lesson 1 needs some formatting attention. Graphics indicating use of flip chart, asking students questions and handouts need to be added along with pagination.

The open-and-close browser activity worked very well, particularly when the instructor asked the students to do it a couple of times. Opening a browser and closing it may be a bit like starting and turning off an automobile, which is to say understanding starting a browser goes a long way toward actually browsing.

The clicking mouse activity was successful, but needed more practice especially among those students who were less knowledgeable about the computer. One beginning student tended to position the mouse, remove her hand, then click-it. In the process of removing her hand before the click the mouse would be slightly brushed causing the cursor to move slightly away from the clicking spot. A 5 minute drill-and-practice would be appropriate here, perhaps in pairs so that students might also learn how to spot poor clicking technique (e.g., pre-mature clicking, late clicking, double vs single clicking, slow double clicking).

Physically showing stuff is good. For example, literally holding up the mouse and moving the scroll wheel would be far more illustrative than simply telling the students

that, for example, “*you will find a scroll wheel on the forward center portion of the mouse.*” Furthermore, it would be easy to coordinate such a physical demonstration of the mouse (rather than a verbal description of the mouse) with what is happening on the screen in front of the classroom.

Instructor was well prepared to use the flip charts, even though this was not her style of teaching. Thus in this regard more highlighting the use of flip charts (e.g., with graphics) will be helpful. Also, instructor achieved some excellent interactions with the students as she used the flip chart to record their responses. Later in the class the responses on the flip chart were effectively used during the wrap-up discussion. Using a white board, chalk board or flip chart does require skill. Skill not to make the writing too small or too large, skill in making the writing legible, and skill in being able to concisely summarize student comments. This may be something to put into the Instructor’s Tips.

Instructor was well prepared asking questions noted in the curriculum materials. Instructor’s “question asking” behavior was natural and easily flowed during the class period.

Lesson needs one or two more Script Boxes – perhaps on page 5. Currently the visual flow of the lesson is far too text oriented, and an additional Script Box would provide prospective instructors with “anchors” – places to get their bearings.

Lesson 1 curriculum questions lacked “answers”. Wherever questions are being inserted for the instructor to read to his or her class, the answer should be right underneath that question in an offsetting color, as is the case in lesson 4.

Glossary worked very well. It’s a great take-home piece. This first lesson might also include a take-home drill-and-practice that focuses on using the mouse the content of which might be closing and opening the browser, or going from the main menu to a health topic and back to the main menu, or enlarging a picture and closing it again.

#### Lesson 4

Beforehand this lesson looked good visually but much longer time-wise than lesson 1. However, partly due to skipped sections and a relatively rapid pace of the instructor not conducive to questions, this lesson was actually completed in 60 minutes (25% shorter than lesson 1).

The difficulty with this lesson stemmed from an interaction between a relatively unprepared instructor and a couple of lesson format flow issues. The format flow issues were basically putting a script box with questions and instructions that were not yet happening in the lesson. For example the script box on page 5 starts, “*Next, let’s look at the handout entitled **Main Menu.** ...*”, before the guide directs the instructor to pass out the **Main Menu Screen Shot**. Consequently, as the instructor continued to read from the script box, the students grew frustrated not knowing what the instructor was referring to.

A simple improvement of placing the directions to pass out the *Main Menu Screen Shot* should remedy this problem.

It is difficult to know the extent of lack of preparation of an instructor. There are however some areas in the curriculum materials that might help a less-prepared instructor. Specifically for example on page 7 at the bottom, the instructor's guide has a relatively major class event happening: "*When they have finished, tell the students to turn to their neighbors and discuss their responses.*" This discussion never happened. However, if through formatting, more attention was drawn to this discussion event the instructor may very well have not missed this item in the instructional sequence. In general, lesson events that are relatively important, involving, interactive and marking a milestone (i.e., one of the lesson goals) should have more attention drawn to them through formatting techniques.

The flip chart on page 8 is very good, and could be repeated in other places to good effect.

During the debrief the instructor found that the smallish screen shots along the right margins were confusing and not too useful. According to the instructor the reason for this was that the screen shot did not correspond to where he was in the lesson and was thus confusing. Also, it had to do with the visual appearance of the screen shot which showed 100% of the page, whereas the computer monitor only showed 33% of the page. Finally, print materials may not be able to keep up with more frequent changes to the associated website. Perhaps a "PowerPoint" type appendix for each lesson could have portions of the site index, with selected site areas illustrated with a screen shot in a column to the left. Then in a right column (PowerPoint like format) would be open space for instructor notes (to annotate changes that they see to screen shots). This appendix would have some standard icon on its cover. Then in the lesson itself, there would be a picture of the cover (with identifiable icon) of the screen shot appendix and page number. This might be too complicated and even more confusing. In general I like visual icons illustrating something, but they may not be able to stay sufficiently fresh in print materials to be effective.

Five goals for lesson 4 could be arranged more hierarchically. That is, "exploring health topics" would *subsume* navigating table of contents, or opening images.

As I watch the lessons being taught, I think fewer readings/activities and longer interactions might be better. That is, rather than explore 5 topics, students should explore only 2 topics but with more interaction built in. Related to this, instructors should be more careful to note for the students how much time they are allocating for an activity by stressing (in bold font for example) that they have **10 minutes** for an activity (which is actually a fairly long time). I would suggest that wherever 10 minutes is allocated for an activity, that the 10 minutes is not just reading time, but writing responses, answering some questions, discussing with a partner. That is done throughout the lessons, but I'm not sure if it is always done.

As mentioned by Debby during the debrief, some kind of “Where are we?” or “You are here” sidebars would also help anchor the instructors. In this regard these sidebars could be keyed to the 4 or 5 goals/objectives outlined at the beginning of the lesson.

John suggested keeping the entire 12 lessons to 9 hours. One way to do that would be to weight the lessons relative to the experience level of the class. For example for an experienced class one or two of the earlier lessons would be skipped, and for a less experienced class some of the later classes could be skipped. Also, in the Instructor’s Tips one might run a couple of suggested “navigation paths” through the 12 lessons so that some lessons might be skipped while maintaining the integrity of the curriculum.

Use of “locator tips” for the instructors. On page 13 the guide says “*Let students answer the question before they click on the corresponding link.*” When the instructor gets to that sentence they may not be sure if the question(s) are above or below. Thus a simple locator would alert the instructors on where the questions are: “*Let students answer the questions below before they click on the corresponding link.*”

Page 14 script box: change *see* to *seen*.

According to John it is now Firefly as an alternative browser not Netscape.

Page 19 says in the script box: “*I’m going to give you some time to find answers to the questions you raised at the beginning of class ...*” yet it was not clear to me what questions were raised at the beginning of the class. This is an excellent point in the lesson to tie together something at the beginning of the class with something towards the end. The way to tie them together is to make sure to emphasize at the beginning that questions are going to be generated. Furthermore these questions could be “solidified” by writing them on a flip chart or white board, then put aside until the end of the lesson. Also it is important to use the same language “... *the questions*” or “... *the concerns*”.

At the end of the debrief there were a variety of dissemination suggestions – via pdf, on a cd, via ads in a newsletter, ads on the web. One idea I liked was creating example downloadable lessons that prospective organizations or instructors could download and use, complete with tips, content, glossary, screen dumps and homework. This bears further discussion.

**SECTION 5: May 2006 Curriculum Review Session.** On May 25<sup>th</sup>, 2006 Dr. Ann Benbow participated in a second curriculum review session at the National Institute on Aging with Stephanie Dailey and Doug Coulson. The purpose of this session was to review the development and changes to the *Guide* as it developed and evolved during the five months of pilot testing. This was a “tweaking” session, an opportunity to make the materials better in a small increment. The first review session and series of classroom pilot tests had resulted in a number of major improvements.

During this meeting the high utility of the first lesson, Web Basics, was discussed. This new first lesson was well received and ensured that seniors went forward into later lessons with the necessary navigation and mouse skills.

Several comments about the length of the lessons emerged. It was generally felt that the lessons, even though they had already been reduced in size, could be reduced even further. It was pointed out that activities which involved class discussion generally took longer than allotted times.

The main outcome of this session was to reinforce the hands-on, active nature of the lessons. The importance of active learning was stressed during the meeting. Furthermore the revised *Guide* materials generally employed activities that required hands-on work such as searching a web site for information to answer a question.

The format had been much improved since the January curriculum review. The pages were more consistently laid out from lesson-to-lesson. Also within each lesson the number of icons in use had been reduced. The impact of this was to create a less busy look to the overall page layout.

Finally with the reduction from 12 lessons to 9 lessons, the inclusion of “Web Basics” and “Instructor Tips” the *Guide* was more concise, focused and usable than earlier drafts.

**SECTION 6: Online Survey and Lesson Review.** The last phase of the pilot test evaluation of NIA’s *Internet Guide* involved two web surveys. The first survey examined the potential use and distribution of the *Guide*. The second survey asked respondents to complete an online review of a selected lesson (i.e., either lesson 2 or lesson 6) and then fill-out an Internet survey about the reviewed lesson. Individuals involved in training within three separate communities were solicited: 1) senior centers; 2) libraries; 3) retirement communities. Nine individuals were solicited from each of these three populations. Appendix C contains the full list of the web survey participants, the surveys as well as the data.

There were 21 respondents for an overall return rate of 78%. Thirty three percent (i.e., 7) were from senior centers, another 38% responded from libraries. The final 29% were from retirement communities. Table 4 shows this distribution by estimated number of seniors served per day.

Table 4  
Population Counts by Size

# served/day	Senior Center	Library	Retirement Community
0 to 50	1	1	2
51 to 100	1	3	0
101 to 150	2	0	0
151 to 200	1	0	0
201 to 300	1	0	0
> 300	1	4	4

The second set of survey questions asked yes/no questions about the computer facilities available on site. The three questions were: 1) Does your site have a computer lab with Internet connections? 2) In your computer lab, is there a way to project a computer screen? 3) Does your place of work have photocopy capabilities? Table 5 summarizes this data.

Table 5  
Computer Facilities Percentages

Facilities	Senior Center	Library	Retirement Community
Internet?	100%	100%	100%
Projection?	71%	100%	40%
Photo copying?	100%	100%	100%

Next the survey asked respondents about usage. The three usage questions were: 1) Approximately how many hours a month does you site sponsor computer training for older adults? 2) What kind of curriculum materials do your computer instructors use? 3)

How often do you use curriculum materials that are NOT self-generated? Tables 6 through 8 below summarize the responses to these questions.

Table 6  
Site Sponsored Computer Training Hours

	Senior Center	Library	Retirement Community
0 hours	0	1	0
1 – 15 hours	0	2	4
16 – 25 hours	6	0	1
> 25 hours	1	5	1

Table 7 shows the type of the curriculum materials that are used: 1) self-generated materials; 2) commercially developed materials; 3) government developed materials.

Table 7  
Type of Curriculum Materials

	Senior Center	Library	Retirement Community
Self-generated	5	7	6
Commercial	4	5	2
Government	2	3	1

Note that in Table 7 above, respondents could check more than one type of curriculum material used. Table 8 below shows the frequency of NOT using self-generated curriculum materials.

Table 8  
Frequency of NOT Using Self-Generated Materials

	Senior Center	Library	Retirement Community
Frequently (4 or more times per month)	1 (14%)	2 (25%)	1 (17%)
Occasionally (2 to 3 times per month)	2 (28%)	4 (50%)	1 (17%)
Infrequently (once a month or less)	2 (28%)	2 (25%)	4 (67%)
Never	2 (28%)	0	0

The final section of this survey contained five distribution questions. Table 9 provides the data on how respondents learned about new curriculum materials.

Table 9  
Learning About New Curriculum Material

	Senior Center	Library	Retirement Community
Word of mouth	5 (71%)	4 (50%)	5 (83%)
Ads on web	2 (29%)	2 (25%)	4 (67%)
Ads in mags	2 (29%)	1 (13%)	1 (17%)
Profssnl mtgs	1 (14%)	3 (38%)	5 (83%)
Solicitations	0 (0%)	1 (13%)	1 (17%)
Other	2 (29%)	3 (38%)	1 (17%)

The other category included:

*“Instructors”; “Library Listserv (i.e., Seniorserv)”; “SeniorNet”; “We start looking for things that meet a need we know we have, for example looking for mouse tutorials”; “We identify a need and then research products to meet that need, for example mouse tutorials or practice”; “corporate office”.*

The percentages in Table 9 exceed 100% because respondents could check more than one distribution category. Clearly *word-of-mouth* is the main way that the organizations surveyed learn about new curriculum material. Retirement communities have the most varied ways of learning about materials, which also include *ads on web* (67%) and *professional meetings* (83%). Libraries also used *professional meetings* (38%) and *other* which includes *Library Listservs* such as *Seniorserv*.

Table 10 provides data on how the surveyed organizations select their curriculum materials from *formal review* to *other*.

Table 10  
Selection Process for New Curriculum Material

	Senior Center	Library	Retirement Community
Formal review	1 (14%)	5 (63%)	1 (17%)
External mandate	0	0	0
Internet searches	0	3 (38%)	2 (33%)
Word of mouth	1 (14%)	0	3 (50%)
Not applicable	4 (57%)	4 (50%)	3 (50%)
Other	1 (14%)	2 (25%)	1 (17%)

With the exception of libraries Table 10 shows that there is generally a lack of any formal review process for selecting curriculum materials. *Internet searches* was one way curriculum was selected. The *other* category included *SeniorNet* and *suggestions by corporate offices*.

Organizations received their materials in a variety of ways. Table 11 shows the frequencies and percentages for the different formats for receiving instructional material.

Table 11  
Formats for Receiving New Curriculum Material

	Senior Center	Library	Retirement Community
Print	2 (29%)	6 (75%)	6 (100%)
CD or DVD	3 (43%)	2 (25%)	3 (50%)
Downloads	4 (57%)	4 (50%)	3 (50%)
Not applicable	3 (43%)	2 (25%)	0
Other	0	2 (25%)	0

With the exception of senior centers, *print* still is the dominant format for receiving curriculum materials. However, it is interesting to note that *internet downloads* is a close second, and ahead of *CD or DVD*. Although a couple of respondents checked *other*, they did not elaborate.

Table 12 shows the percentage for format preferences. Clearly organizations want to move away from print.

Table 12  
*Preferred* Formats for Receiving New Curriculum Material

	Senior Center	Library	Retirement Community
Print	0	1	2
CD or DVD	1	3	0
Downloads	3	3	4
Not applicable	2	0	0
Other	0	1	0

Instead of *print*, the dominant preference for **all** organizations is *internet downloads*. This preference (i.e., *internet downloads*) as it relates to current practice (i.e., *print*) has interesting implications for developing curriculum materials, a point discussed below.

The last question on the distribution portion of the survey concerned the convenience for an organization to photocopy handouts for students. Table 13 gives the percentage that each organization said *yes* it would be convenient.

Table 13  
Convenience of Photocopying Handouts

	Senior Center	Library	Retirement Community
Convenient?	Yes: 4 (57%)	Yes: 8 (100%)	Yes: 6 (100%)

Clearly Table 13 illustrates that for the most part photocopying facilities are generally available at the responding organizations.

In the “Additional Comments” section of the usage and distribution survey respondents made a variety of remarks. Two respondents mentioned the dynamic, changing nature of the curricula for older adults.

*Curriculum is continually changing based on real time classroom experience with seniors.”*

One respondent mentioned that they usually “beta test” new curricula before implementing while another respondent said that they rely on volunteers.

*“We have a very informal program, largely dependent on volunteers.”*

One respondent said that they have developed an extensive curriculum for their residents. One from the library sector mentioned that libraries share their curriculum with other libraries. Finally one mentioned that they use materials from Web Wise Senior.

After respondents completed the usage and distribution survey they were prompted to click a link to go to the online lesson review. Lesson 2 (*Introduction to NIHSeniorHealth*) and Lesson 6 (*Introduction to MedlinePlus*) were selected for the online review because they touched on the two main health web sites within the *Guide*, and because lesson six was more advanced in its requirements than lesson two. Fifteen people out of the original 21 (i.e., 71%) completed the online lesson review (i.e., six reviewed lesson two, and nine reviewed lesson six). Table 14 below summarizes the quantitative responses to the online lesson review survey. This Table is not divided among the three sample groups because the N is too low.

Table 14  
Online Lesson Review Survey Responses

	Lesson Two Introduction to NIH Senior Health <i>[Percent responding YES]</i>	Lesson Six Introduction to MedlinePlus <i>[Percent responding YES]</i>
Does the lesson appear easy to use?	80%	100%
Do the handouts appear useful?	100%	100%
Do the screen shots appear useful?	67%	100%
Each lesson in the Guide is about 90 minutes. Is this time frame realistic ... ?	50%	63%
Would you use this lesson in your computer classes?	80%	78%
Would you or your colleagues consider attending a one day train-the-trainer session for this Internet Guide?	80%	100%

Lessons two and six were viewed very favorably relative to the questions in Table 14 above. Lessons appeared easy to use, and the handouts were seen by **all** of the respondents as *useful*. Lesson two screen shots were seen by some (i.e., 33%) as not useful. The main concern shown in Table 14 is that the perceived length of time to teach the lesson is too long. This perception was corroborated during the actual classroom pilot testing. It is worth noting the strong interest in professional development.

Lesson Two's layout was generally positive. It was viewed as "*clear*" and "*concise*". Reviewers found it organized and easy to navigate. For Lesson Two reviewers liked the handouts. From an instructor's perspective they organize the training. One reviewer mentioned the importance of "printing on demand" (i.e., only print out handouts that are needed). The glossary got very high marks:

*"Helpful. Some terms may not be familiar to all users. In this case more is better."*

*"A great tool to keep on hand. This [the glossary] was what I used most of all when referring back with questions."*

The glossary was seen as useful, and easy to use and understand. Hesitation to use Lesson Two in their classes stemmed from the length and complexity of the lesson. Comments reflected the need to go slowly with older adults new to the computer to make sure they understand the rules of navigation and how to use the mouse.

*"Again, getting seniors to sit down at a computer for the first time is the problem. Our computer club helped our members with the Medicare sign-*

*up and they needed just as much help in learning and understanding the navigation (links) and using the mouse.”*

As far as changes to Lesson Two, the main (and only) suggested change was to shorten the lesson. One reviewer liked it the way it was, but recognized that other trainers might want to change some things. The additional comments on Lesson Two were all positive and emphasized the importance of these kinds of curricula for older adults.

*“If we are going to access or recommend the Guide we should be trained. Programs like this are wonderful for our seniors and population in general. Keep them coming.*

This final comment relates back to the importance of “train-the-trainer” components to new curriculum.

For Lesson Six overall the respondents thought highly of the lesson. Specifically, reviewers liked the font size and bold print. The lesson was logical, thorough, well thought out and easy to follow.

*“Goals are plainly stated and activities are multi-functional, i.e., they introduce content and develop computer skills concurrently.”*

One reviewer objected to the didactic nature, but this comment was clearly in the minority. Another viewer commented that the time estimates may be a bit optimistic. Overall, the lesson was “*very user friendly*”. Lesson Six was seen as easy to use (survey question two), although a bit too long.

*“... easy, just a bit long. It may not really be – it may just be all that 21 pages initially looked daunting.”*

Another reviewer liked how things were divided.

*“Good separation into smaller parts, and good redundancy.”*

The lesson strategy had broader applicability.

*“It [lesson six] takes you step by step on how to use the Medline information, but it also makes it easy to use the same strategies when using the web to look up any information.”*

In terms of the plusses and minuses of Lesson Six, the weakest cited factor concerned the glossary definition of “Internet” and the “Web”.

*“Minuses include the blurry definition of the Internet and the Web. More could be made of the fact that ‘Internet’ is a shortened version of ‘international network’ as a point of remembering. The rest of the*

*definition is accurate, except the 'The Web' is not a secondary name for the Internet, but one of the several ways of accessing the Internet(Usenet, FTP, Gopher, Telnet, IRC, etc.), as well as the most popular way to do so."*

Most of the responses to question three (*plusses and minuses*) were plusses, although the long length was cited once as a potential problem.

*"User friendly. Simple instructions. I didn't find any minuses."*

*"It seemed to flow well."*

Two respondents commented positively on the colors used in Lesson Six handouts. Although one respondent thought that the amount of information on the handout may be overwhelming, generally respondents found the handouts easy to read, excellent specificity and good reinforcement of the lessons. The Lesson Six reviewers also found the glossary to be terrific.

*"This was my favorite part – in fact I printed it out."*

*"The glossary is fantastic. It is simple and uses every day terms that everyone should be familiar with."*

One person liked the included pictures. Except for the length, generally reviewers would use the lesson in their computer classes. One reviewer was negative about Lesson Six as written and wrote, *"It sounds like it was written for a robot."* Others thought it was a bit too long saying that 90 minutes would be too long for the group being instructed. One suggested breaking it up into three 30 minute classes. Three suggested changes to encourage trainers to use the *Guide* were:

1. *Authority to copy*
2. *Offer a bookmark or pen to remind folks to use web sites*
3. *Consider adding self guided audio*

In the final comments section on Lesson Six one respondent reiterated that the curriculum seemed a bit stiff. This person wanted more room for seniors to work on different levels and not, for example, be confined to deal with a single example (i.e., hip replacement). Generally, however, most of the respondents were very enthusiastic about the *Guide*.

*"Let me know when we may be able to participate in this program."*

*"Overall, it's a great idea and well done."*

Finally, because reviewers were seeing only a single lesson, some wanted to see more on the basics of navigation and mouse use, content which is covered in earlier lessons.

## **SUMMARY AND RECOMMENDATIONS**

There were three main parts to the pilot test evaluation of NIA's Internet *Guide*: 1) classroom pilot testing; 2) material reviews with a curriculum specialist; 3) internet survey and online reviews of two lessons.

The general impact of this pilot work was to improve the format, shorten the overall curriculum from twelve lessons to nine lessons and balance the material in terms of "scripted" sections versus "descriptive guidance". Numerous small adjustments have been made to improve the color scheme, readability of the font, page layout and tighten focus on content in the lessons themselves as well as the handouts. All the data, including the internet survey and online reviews has been put into three appendices which accompany this report.

Recommendations at this stage of curriculum development are largely based on the most recent data collection effort via the web survey and online review as well as rooted in extensive participation in the pilot test process (i.e., classroom observations). Furthermore the recommendations follow the original six goals and six components laid out in Table 3 on page four. Specifically each of the six components will be briefly considered relative to the six goals of the curriculum (see Table 3).

### **Content**

- The content has high utility for trainers. Throughout the data record reviewers, instructors and students thought the content to be important to study.
- Content is senior friendly. The large and appropriate fonts worked. Color schemes were vivid. The main area that might not be senior friendly would be the length of the lessons. In this regard it is recommended that the NIA writing team consider placing markers within the lessons that naturally divide the material into halves or thirds.
- Given the high interest in the content (i.e., senior health) the likelihood of use is very high.

### **Pedagogy**

- Throughout the pilot test period there has been mixed reaction to the pedagogy of the curriculum. In this regard the pedagogy has evolved to include a good balance between scripted and descriptive material. While some may find it "a bit stiff", generally the pedagogy will have high utility for trainers. This is particularly the case if the trainers actually use the material as written. This observation is strongly supported by the data collected during the classroom pilot tests (e.g., see "tip" on the middle of page 23).
- The pedagogy is senior friendly in its pace and mildly repetitive nature. That is, redundancies built into the lessons were seen by students as reinforcing and

- helpful. Furthermore the active, hands-on nature of many of the exercises had high education value for instructors and students.
- The distribution strategies should include some explanation of the pedagogy, lest the recipients view the pedagogy as “stiff”. That is, when the materials are distributed the marketing materials should have some explanation of the rationale behind the pedagogy.
  - There may be some resistance to use the material due to the perceived nature of the pedagogy. See previous bullet.

### Format

- Current format will have a high utility for trainers. The pages are consistently organized and are not busy with too many icons. The scripted areas are clearly marked as “anchor points” every couple of pages. The descriptive guidance is sufficient for beginning instructors and helpful for more experienced trainers.
- Format of handouts is senior friendly. The handouts have a large, easy to read font. The handouts are not too long nor are they too dense with text.
- The improved format will increase the likelihood of use. That is, the existence of a concise glossary, reasonably sized handouts and a balanced, relatively uncluttered page layout will attract users.
- Related to format of the guide itself, several points emerged regarding the format of the classroom. First projecting the instructor’s screen was very important, yet as Table 5 shows on page 27, “projectors” was the most frequently missing item at a facility. Therefore it is recommended that a strategy be recommended for classrooms that do not have access to projectors. Second, the ideal classroom arrangement would permit instructors to be able to get behind students to view their screens. Even better would be an arrangement that kept the instructor in front of the students, with an assistant checking screens. It is recommended that these strategies be mentioned in the *Guide*.

### Usage and Distribution

- Print is currently the dominant way that trainers get and implement curriculum. However, according to the web survey the dominant *preference* for getting materials is through **downloads**.
- To improve utility to trainers it is strongly recommended that various aspects of this curriculum be downloadable. For example, handouts could be downloadable on an as needed basis as instructors prepared for class. Furthermore instructors could download particular lessons only when needed.
- From a seniors perspective the downloadability of some of the curriculum materials (e.g., handouts) would reinforce their web surfing skills as well as help them learn about NIHSeniorHealth and MedlinePlus. It is recommended that strategies for seniors for downloading materials be incorporated into the curriculum.
- An easy downloading capability will increase likelihood of use and frequency of use.

- Reviewers mentioned SeniorNet, Web Wise Seniors and Senior Serv. It is recommended that the possibility of linking to these other services be investigated for the purpose of increasing usage and distribution of the *Guide*.
- It is recommended that in addition to print, CD and DVD as methods for distribution, that a “downloading” distribution capability be added to the distribution plans.
- As Table 9 shows on page 29, *word-of-mouth* is the most frequent way that organizations learn about new curriculum materials. It is recommended that any distribution strategy incorporate word-of-mouth tactics.
- Also shown in Table 9 is that professional meetings can be an important component of a distribution strategy. In this regard it is recommended that professional meetings for retirement communities and libraries be identified for distribution of the *Guide*.

### Feedback

- Currently the *Guide* lacks an evaluation component. It is recommended that evaluation feedback surveys be included to provide students an opportunity to comment on the lessons and provide instructors with suggestions.

### Professional Development

- Currently the *Guide* does not include train-the-trainer materials. In the web survey and online review the need for providing for professional development was mentioned several times. In this regard it is recommended that NIA consider developing a train-the-trainer supplement that could be used in half day or full day workshops. This would be particularly useful to illustrate the effectiveness of the mixed pedagogical strategy of the *Guide*.