Instructional Evaluation Plan
Arrhythmia Recognition and Intervention

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EDT 693

March 30, 2008

Excellent. I have added a few comments below.
365 of 365 points

Introduction

Instructional evaluation, as defined by Worthen and Sanders (1987) is the gathering of data in order to determine the quality, effectiveness, or value of a program. This data, if retrieved during the development cycle of the program, with the objective of taking action to revise and improve the instruction prior to release, is formative evaluation. Effective formative evaluation should be an "…ongoing, fluid process used to gauge overall progress and areas needing attention or change" (Manwaring & Calverly, 1998, p. 9).

The ultimate goal of formative evaluation is to refine and improve the educational offering to assure effectiveness in meeting its identified aims, or, in other words, its fitness for purpose (Jackson, 1998). Any project could hardly be described as being successful if the question "Does it work?" cannot be answered, and in planning the formative evaluation, systems for gathering data about effectiveness, efficiency, acceptability, participant interest and motivation can provide the answer. It must be kept in mind, however, that the identified aims of the project be carefully considered in order to direct the evaluation accurately. (Your description is very detailed – appropriately I believe. That detail is combined with a relatively complex sentence structure. Graduate academics love this. In the future, if you are writing for a different audience, I suggest you consider more of a business writing style - simple, relatively short, and direct sentences.)

The educational offering under consideration is titled "Arrhythmia Recognition and Intervention", the first in a series of courses focused on nursing care of the patient with adult heart disease. The target learner for the course is a nurse entering practice in the field of cardiac care.

Instructional Goal

Upon completion of this course the participant will be able to:

- Describe the anatomy and physiology of the heart including the cardiac cycle.
- Relate the parameters of cardiac output to clinical condition.
- Describe the electrophysiology of the heart.
- Accurately identify cardiac arrhythmias.
- Analyze the 12 lead ECG to detect cardiac ischemia and infarction.
- Utilize ECG findings along with patient clinical condition to choose appropriate interventional strategies.

Evaluators of Instructional Material

Evaluators for this project will come from several disciplines in order to gather information from multiple viewpoints.

- Sherri Goldsmith, CCRN
  Critical Care Instructor

SME-Currently teaches Basic Cardiac Arrhythmia

- Kathy Barnes
Instructional Designer
Western Kentucky University, Mass Media and Technology
- Dawn Slaughter, RN
Staff nurse, Coronary Care Unit
SME-preceptor for nurses beginning work in coronary care

- The remaining evaluators will be novice learners with backgrounds similar to those of the target audience.

Evaluations

In all probability, the most difficult element in developing a plan for formative instructional evaluation is in determining the appropriate models and methods to be used. The literature is extensive and varied in its approaches to this subject. Therefore, for purposes of this plan, an eclectic mix is used in order to glean maximum information from a small population of reviewers.

Kirkpatrick Level 1- Reaction

[transition needed – why this model and why level 1 (only? – no, further reading indicates consideration of other levels. The section needs an overview of the Kirkpatrick model, why it has been selected, and which levels of evaluation you will employ. Then discuss each level.] In Kirkpatrick's four level evaluation model, level one is learner reaction or a measure of customer satisfaction. The product is evaluated to determine the level of positive or negative reaction. As Kirkpatrick (1998) puts it, "Positive reaction may not ensure learning, but negative reaction almost certainly reduces the possibility of its occurring"(p. 20). Markus and Ruvulo (as cited in Clark, 1995) also discuss learner reaction as it relates to motivation. The learner may like the program, but must perceive the material as important and relevant to be motivated to engage in it. Accordingly, several instruments will be used to perform a thorough evaluation. Clarebout, Elen, Lowyck, Van den Ende, & Van den Enden (2004) propose that the use of different evaluation instruments provides more information and Hegarty (2003) states the evaluator using multiple types would be less likely to miss factors not thought of. The following section is devoted to describing the instruments used [with learner review.?]

Think Aloud Protocol with recording

In the think aloud method of evaluation, the participant (a novice learner) is encouraged to verbalize actions and thought processes while completing the course module. A screen recorder and microphone will used to simultaneously record the session and obtain information about how the user actually uses the product. The goal is to gain detailed quantitative and qualitative information and gain insight into the reasoning process of the learner. This hopefully iterative process can begin mid development of … and continue as revisions are implemented and more modules are completed. An *introductory script*, *consent to record*, and a *think aloud*

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protocol script are provided (see Appendices A, B and C) to ensure continuity with each participant.

Participant Evaluation Questionnaire

The participant reviewer will also be asked to complete an evaluation questionnaire (Appendix D) with a Likert scale in order to elicit quantitative information about the quality of course content, design, structure and delivery.

Anecdotal Record Form

An anecdotal record form with instructions (Appendix E) is provided in order to record and interpret unsolicited statements or unexpected events.

Online Evaluation Forum

Due to the small number of learner participants, it is highly unlikely that a group could be formed for discussion purposes. It is felt that the interactivity may elicit different types of qualitative information about the product and stimulate previously undiscovered ideas. A discussion forum site will be arranged on the organization intranet and individuals who have participated in the evaluation process will be invited to enter the discussion. It is unknown whether this will prove to be an effective data gathering technique, but requires few resources and may be worth the effort. See Appendix F for an Evaluation Forum Dialogue.

Good selection of tools – you could improve the discussion by giving the reader some additional comments about why each tool is appropriate for your particular needs. – Same for the following discussion.]

Kirkpatrick Level 2- Learning

Knowledge surveys

Kirkpatrick (1998) defines learning as the extent to which a learner is able to change attitude, improve knowledge, or increase skill as a result of completing an instructional product. In the formative evaluation the method of measuring the success of the course at stimulating learning is the pre and post test assessment (Clark, 1995). For the purposes of this evaluation plan, knowledge surveys will serve as pre and post course evaluation of learning. Nuhfer (1998) describes knowledge surveys as excellent formative evaluation tools in that they can demonstrate prior knowledge as well as any subsequent learning. Examples of knowledge surveys aligned with course objectives are found in Appendix G.

Heuristic Evaluation

Kirkpatrick (1998) and Dick and Carey (1996) focus their evaluation strategies on response from actual learners, and undoubtedly the learner is the ultimate recipient of the benefits of evaluation and improvement of the educational offering. However, though the learner is able to discover a problem, the expert is needed to diagnose the cause and suggest the treatment. Saroyan (as cited in Brown & Gerhardt, 2002) suggests experts in the subject matter

domain as well as instructional designers should be involved in course evaluation, "as each is expected to provide different kind of feedback" (p. 15).

Instructional Designer Evaluation

The instructional designer is asked to review the course early in the design phase, and at least one more time during development. An experienced instructional designer has agreed to perform a formative evaluation of this course. Course and learner information is provided along with a heuristic evaluation checklist (see Appendix H).

Subject Matter Expert Evaluation

The subject matter experts (SME) will be asked to review course objectives, content and structure early in the design phase. At this stage the SME will make judgments regarding alignment of content with objectives, content accuracy, and completeness. The initial evaluation will occur with a paper prototype in a one-to-one meeting with the designer. As the project progresses, the SMEs will again be asked to review the online version and complete an exit questionnaire (Appendix I).

Study Limitations

- Technical – There are no immediate technical concerns which would limit the study as it is designed. Computer availability and location are adequate. Screen recording equipment and software are already in place.
- Human – This is probably the area of greatest limitation. Few of the suitable novice learner participants will available at any given time and the single designer, observer, evaluator has limited availability as well. Therefore, the study is designed to utilize one-on-one methods exclusively. The addition of an experienced instructional designer is a valuable asset to the study.
- Financial – There is no budget for this type of evaluation, but the manager has agreed to allow the hours as productive.
- Time – Time does present some difficulties, but, since the study is designed to be effective as possible with minimal numbers of participants, this may be alleviated somewhat.

References

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Appendix A

Welcome and explanation script

Hi, _____. My name is [   ], and I'm going to be walking you through this session.
You probably already know, but let me explain why we've asked you to come here today: We're testing a computer based course that we're working on to see what it's like for actual people to use it. What you will be seeing is not the finished product; you will be helping us to find out what works and what areas need improvement.
I want to make it clear right away that we're testing the *course*, not you. You can't do anything wrong here. In fact, this is probably the one place today where you don't have to worry about making mistakes.
We want to hear exactly what you think, so please don't worry that you're going to hurt our feelings. We want to improve it, so we need to know honestly what you think.
As we go along, I'm going to ask you to think out loud, to tell me what's going through your mind. This will help us.
If you have questions, just ask. I may not be able to answer them right away, since we're interested in how people do when they don't have someone sitting next to them, but I will try to answer any questions you still have when we're done.
You may have noticed the microphone. With your permission, we're going to record what happens on the computer screen and what you have to say. The recording will be used only to help us figure out how to improve the site, and it won't be seen by anyone except the people working on the project. It also helps me, because I don't have to take as many notes.
If you would, I'm going to ask you to sign something for us. It simply says that we have your permission to record you, but that it will only be seen by the people working on the project. Do you have any questions before we begin?

Adapted from Steve Krug, Advanced Common Sense @ http://www.sensible.com/index.html

Appendix B

Consent to Record

Purpose

   The purpose of this document is to obtain you consent to record today's testing session. This will consist of a record of all activity on the computer screen and your voice as you discuss your reactions. We want to record the session in order to analyze, in depth at a later time, the information we get today. The recording will be used only internally within the Medical Center Education Department. It will not be broadcast or used for any other purpose.

   If you are comfortable with this, please sign where indicated.

Consent

   I, the undersigned, hereby give my permission for today's evaluation session to be recorded for the purposes described above.

   Name_____

   Signature_____ Date_____

Appendix C

Think aloud protocol script

First I would like to gather some information from you.
1) How would you rate your computer skills? _____
   0 = no computer experience
   5 = expert

2) How long have you been employed here? _____

3) What is your job? _____

4) (If not a new hire) Have you used NetLearning to take online courses? _____
5) Have you taken courses from other sources? _____
6) How do feel about taking computer based courses?
   0 – really dislike them
   5 – really like them
7) Would you tell me about your likes? dislikes?

Thank you very much. Remember, we are testing the design and usefulness of the course, not you.

   As we go through the course, I will be asking you to complete some tasks and I want you to think aloud while you are working. You might talk about what you are looking at or something you are looking for. Why you are clicking. Anything you find confusing or helpful. You might also talk about what you like or dislike. Please be honest, you won't be hurting anyone's feelings. Do you have any questions before we start?

- Please take a few moments to look over this first page without doing anything.
  o What is your general reaction to this page?
  o Can you tell what this course is about?
  o What did you notice first about this page?
  o What do you think you are supposed to do first?

- o What do you want to do first?
- Please go ahead and do what you want to do first. Remember to think aloud about what you are doing and why.
  - o As you are moving along – is what you expected to happen actually happening?
  - o Are you able to determine where you are in the course by looking at the page you are on?
  - o What do you think this page is about?
- Please return to the home page. (Ask user to look away from screen for a few moments.)
  - o Now return to the page you were on before returning to the home page.
  - o Encourage thinking aloud about ease or difficulty of this task.
- As you are going through the course, you find a word or concept you don't understand. Show me what you would do.
- Do you recognize the areas to click to go to other parts of the course?
  - o When you click on these tabs, do you go where you expected to?
- Choose a subject you want to know more about. How would you find that subject in this course?
- Please look away from the screen a moment. I am going to navigate to another page.
  - o What section is page in?
  - o What is the page about?
  - o How would you return to where you were?
  - o How would return to the home page?
- You are unable to complete the course in one session and you don't want to lose your place. Show me what you would do.
- You want to print portion of the course. Is this possible? Show me how you would do this.
- How can you find help while you are using this course?
  - o Is the help documentation understandable?
  - o Could you get live help?
- For the last task, please go to lesson #1, complete the lesson, then complete the quiz for that lesson.

1) What do you think of this course in general?
2) Please tell me about any problem areas.
3) What did you like? Dislike?
4) Did you require help with anything?
5) If you had an error, describe the solution.
6) Is there anything else you would like to comment on?
7) Do you have any questions?

Thank you so much for your help. If you would, please complete this short survey before you leave.

Appendix D

PARTICIPANT EVALUATION QUESTIONNAIRE

Course Name: Arrhythmia Recognition and Intervention

Participant Name (optional): _____ Date: _____

Job Title: _____Years in present position? <1   1-3   3-5   5+

INSTRUCTIONS
Please circle your response to the items. Rate aspects of the course on a 1 to 5 scale. 1 equals "strongly disagree" and 5 equals "strongly agree." 1 represents the lowest and most negative impression on the scale, 3 represents an adequate impression, and 5 represents the highest and most positive impression. Choose N/A if the item is not appropriate or not applicable to this course. Your feedback is sincerely appreciated. Thank you.

COURSE CONTENT   (Circle your response to each item.)
NA=Not applicable 1=Strongly disagree 2=Disagree 3=Neither agree/nor disagree 4=Agree 5=Strongly agree

1.   Generally the content was clearly and logically organized.   N/A   1   2   3   4   5

2.   Important information or key concepts were easy
       to identify.   N/A   1   2   3   4   5

3.   I was well informed about the objectives   N/A   1   2   3   4   5
       of this course.

4.   The course content helped me to achieve the objectives.   N/A   1   2   3   4   5

5.   The content of this course was too complicated.   N/A   1   2   3   4   5

6.   The amount of information presented in each lesson   N/A   1   2   3   4   5
       was about right.

7.   The content of this course was too basic.   N/A   1   2   3   4   5

8.   This course lived up to my expectations.   N/A   1   2   3   4   5

9.   The content is relevant to my job.   N/A   1   2   3   4   5

10. The content was interesting and kept my attention.   N/A   1   2   3   4   5

COURSE DESIGN   (Circle your response to each item.)
NA=Not applicable 1=Strongly disagree 2=Disagree 3=Neither agree/nor disagree 4=Agree   5=Strongly agree

11. The course objectives are clear to me.   N/A   1   2   3   4   5

12. The course activities stimulated my learning.   N/A   1   2   3   4   5

13. Interactive multimedia was essential in the course.   N/A   1   2   3   4   5

14. The activities in this course gave me sufficient   N/A   1   2   3   4   5
     practice and feedback.

15. The test(s) in this course were accurate and fair.   N/A   1   2   3   4   5

16. The difficulty level of this course is appropriate.   N/A   1   2   3   4   5

17. The pace of this course is appropriate.   N/A   1   2   3   4   5

COURSE RESULTS   (Circle your response to each item.)

18. I accomplished the objectives of this course.   N/A   1   2   3   4   5

19. I will be able to use what I learned in this course.   N/A   1   2   3   4   5

COURSE STRUCTURE (Circle your response to each item.)

20. From the start it was clear what I was going to do in N/A   1   2   3   4   5
     course.

21. Directions were clear and easy to follow.   N/A   1   2   3   4   5

SELF-PACED DELIVERY   (Circle your response to each item.)

22. This was a good way for me to learn this content.   N/A   1   2   3   4   5

23. Video is an important aspect of the course.   N/A   1   2   3   4   5

24. How would you improve this course?   (Check all that apply.)

___ Provide better information before course.   ___ Clarify the course objectives.
___Reduce content covered in course.   ___Increase content covered in course.
___Update content covered in course.   ___ Improve the instructional methods.
___ Make course activities more stimulating.   ___ Improve course organization.
___ Make the course less difficult.   ___ Make the course more difficult.
___ Slow down the pace of the course.   ___ Speed up the pace of the course.
___ A lot more time for the course.   ___ Shorten the time for the course.
___Improve the tests used in the course.   ___ Add more video to the course.

22. What other improvements would you recommend in this course?

23. What is least valuable about this course?

24. What is most valuable about this course?

Adapted from Thomas C. Reeves, University of Ga. Evaluation Tools Retrieved from
http://it.coe.uga.edu/~treeves/edit8350/tools.html

Appendix E

Anecdotal Record Form

Instructions:

1.   As an observer in an interactive multimedia design project, you will observe incidents or listen to reports of incidents which relate to the development and impact of the program. It is important that this kind of anecdotal information be systematically recorded so that the story of the development and outcomes of this project can be understood. Therefore, you should complete an Anecdotal Record Form whenever you witness or hear of a significant incident relating to the progress and accomplishments of project. An anecdotal record is a verbal account which exhibits these characteristics:

a.   Each anecdote should be limited to a single incident.
b.   It should contain a factual, non-inferential description of the observed or reported incident. (For example, "The trainees said 'I've never enjoyed using a computer before.' " instead of "The trainee expressed satisfaction with the training system.")
c.   It should include a description of the situation in which the incident occurs so that the meaning of the behavior can be understood.
d.   It should be written as soon as possible after witnessing or hearing about the incident so that all important details can be included.
e.   It should include a separate section describing your interpretation of or feelings about the anecdote. Your personal evaluation is important because your judgments about the project are valued highly.

2. A copy of a blank Anecdotal Record Form appears below.

Appendix E (1)

BLANK ANECDOTAL RECORD FORM

DATE: _____ PLACE: _____

NAME OF OBSERVER: _____

Description of the incident:

Interpretation:

Adapted from Thomas C. Reeves, University of Ga. Evaluation tools Retrieved from
http://it.coe.uga.edu/~treeves/edit8350/tools.html

Appendix F

EVALUATION FORUM DIALOGUE

Welcome to the discussion group for evaluating the Arrhythmia Recognition and Intervention course. First I want to thank each of you for assisting in the development of this course. You have all been extremely helpful. This forum is designed for you to join in further discussion of the course and your reactions to it. If you have any thoughts or comments not previously addressed, or if you want to respond to a comment or idea someone else might have, this is the place.

Some areas you might want to discuss:
- What is your opinion of the system used to deliver the course?
- Was it interesting and motivating?
- Did the ECG practice and/case based scenarios help or hinder you?
- What could be done to improve this course?

Please feel free to comment on **any** aspect of the program. Your comments are needed and appreciated.

If you're the first to enter the Discussion, there will only be a Respond button. Otherwise, you will see others' postings below. Click on the + Expand All button to view all of the entries made by your fellow learners or click each one, one at a time

Appendix G

Pre and Post Course Knowledge Survey

Instructions: Please read each question and answer as described below. Remember, this is not a graded test, it simply a measure of the amount of knowledge you have about this subject and how much learning took place as a result of completing this course.

- Circle A if you feel confident you could answer the question completely for test purposes.
- Circle B if you can truly answer at least 50% of the question or know precisely where you could quickly (30 minutes or less) get the information.
- Circle C if you do not know the answer or are not confident you could find the information to answer it completely.

1. Given a model of the heart, identify the primary structures,   **A   B   C**
    including the coronary arteries.

2. Describe the electrical conduction pathway of the heart.   **A   B   C**

3. Relate the effect of a third degree heart block to patient clinical   **A   B   C**
    condition.

4. Given a 12 lead ECG with ST elevation in lead 6, infer the cause   **A   B   C**
    and location of the abnormality.

5. Create a plan of care for a patient with repeated episodes of   **A   B   C**
    supraventricular tachycardia.

6. Analyze this 12 lead ECG (graphic inserted) and, using the following   **A   B   C**
    patient assessment (information given), recommend an appropriate
    treatment strategy.

An identical survey would be given after the participant completed the course.

Appendix H

Heuristic Evaluation Instrument for Instructional Designer

Introduction

Thank you for agreeing to review this multimedia training product for usability and design. Background course information is listed below to help you better evaluate this program.

1. <u>Target audience and learner characteristics</u>: The target audience for the course is nurses entering into the field of cardiac nursing.
     i. Education level: College educated with associates or bachelor's degree
     ii. Age and gender: variable
     iii. Prior knowledge: Will have received generalized cardiovascular study as part of nursing education.
     iv. Computer expertise: variable
2. <u>Instructional goals and objectives</u>: The participant should be able to describe the anatomy and physiology of the heart, interpret ECG results, identify abnormal heart rhythms, and, using this knowledge, select appropriate interventions for the patient.
3. <u>Typical context for using this program</u>: This program will be utilized at scheduled intervals in the computer lab(s) within the organization during the employee's orientation period. The employee may also access the program from home if the appropriate computer requirements can be met.
4. <u>The status of the program's development and possibilities for change</u>: This program is currently in (early) (mid) (late) development, and, as such, is eligible for change.
5. Please make note of every usability problem found. For each problem, identify the heuristic it violates, and then give it a severity rating using the severity scale below.

Severity Scale

1) cosmetic problem only; need not be fixed unless extra time is available
2) minor usability problem; fixing this should be given low priority
3) major usability problem; important to fix; so should be given a high priority
4) usability catastrophe; imperative to fix before this product is released

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Heuristics Review

Please answer the following questions by circling Yes, No or N/A.

1. <u>*Visibility of system status*</u>: *The e-learning program keeps the learner informed about what is happening, through appropriate feedback within reasonable time.*

a. Does the learner know where they are at all times, how they got there, and how to get back to the point from which they started?

      Yes No N/A

b. When modules and other components of the e-learning (e.g., streaming video) are loading, is the status of the upload communicated clearly?

      Yes No N/A

c. Does the learner have confidence that the e-learning program is operating the way it was designed to operate?

      Yes No N/A

Additional comments:

2. <u>*Match between system and the real world*</u>: *The e-learning program's interface employs words, phrases and concepts familiar to the learner, rather than system-oriented terms. Wherever possible, the e-learning program utilizes real-world conventions that make information appear in a natural and logical order.*

a. Does the e-learning program's navigation and interactive design utilize metaphors that are familiar to the learner either in terms of traditional learning environments (e.g., lectures, quizzes, etc.) or in terms related to the specific content of the program?

      Yes No N/A

b. Is the cognitive load of the interface as low as possible to enable learners to engage with the content, tasks, and problems as quickly as possible?

      Yes No N/A

c. Does the e-learning program adhere to good principles of human information processing?

      Yes No N/A

Additional comments:

3. <u>*User control and freedom*</u>: *The e-learning program allows the learner to recover from input mistakes and provides a clearly marked "emergency exit" to leave an unwanted state without having to go through an extended dialogue.*

a. Does the e-learning program allow the learner to move around in the program in an unambiguous manner, including the capability to go back and review previous sections?

      Yes No N/A

b. Does the e-learning program allow the learner to leave whenever desired, but easily return to the closest logical point in the program?

      Yes No N/A

c. Does the e-learning program distinguish between input errors and cognitive errors, allowing easy recovery from the former always, and from the latter when it is pedagogically appropriate?
	Yes No N/A
Additional comments:

4. _Consistency and standards_: The e-learning program is consistent in its use of different words, situations, or actions and it adheres to general software and platform conventions.

a. Does the e-learning program function properly as long as the computer's screen resolution, memory allocations, bandwidth, browsers, plug-ins, and other technical aspects meet the required specifications?
	Yes No N/A
b. Does the e-learning program include interactions that are counter-intuitive with respect to common software conventions?
	Yes No N/A
c. Does the e-learning product adhere to widely recognized standards for interactions (e.g., going back in a Web browser)?
	Yes No N/A

Additional comments:

5. _Error prevention_: The e-learning program is carefully designed to prevent common problems from occurring in the first place.

a. Is the e-learning program designed so that the learner recognizes when he/she has made a mistake related to input rather than content?
	Yes No N/A
b. Is the e-learning program designed to take advantage of screen design conventions and guidelines that clarify meaning?
	Yes No N/A
c. Is the e-learning program designed to provide a second chance when unexpected input is received (e.g., "You typed "bat" in response to the question. Did you mean "tab?")?
	Yes No N/A

Additional comments:

6. _Recognition rather than recall_: The e-learning program makes objects, actions, and options visible so that the user does not have to remember information from one part of the program to another. Instructions for use of the program are visible or easily retrievable.

a. Does the interface of the e-learning program speak for itself so that extensive consultation of a manual or other documentation does not interfere with learning?

Yes   No   N/A

b. Are icons and other screen elements designed so that they are as intuitive as possible?

Yes   No   N/A

c. Does the e-learning program provide user-friendly hints and/or clear directions when the learner requests assistance?

Yes   No   N/A

Additional comments:

7. *Flexibility and efficiency of use*: The e-learning program is designed to speed up interactions for the experienced learner, but also cater to the needs of the inexperienced learner.

a. Is the e-learning program designed to make the best use of useful graphics and other media elements that download as quickly as possible?

Yes   No   N/A

b. Is the e-learning program designed to allow large media files to be downloaded in advance so that learner wait time is minimized?

Yes   No   N/A

c. Does the program allow keyboard short cuts that make frequent interactions as efficient as possible?

Yes   No   N/A

Additional comments:

8. *Aesthetic and minimalist design*: Screen displays do not contain information that is irrelevant, and "bells and whistles" are not gratuitously added to the e-learning program.

a. Are the font choices, colors, and sizes consistent with good screen design recommendations for e-learning programs?

Yes   No   N/A

b. Are extra media features (e.g., streaming video) in the e-learning program supportive of learning, motivation, content, or other goals?

Yes   No   N/A

c. Does the e-learning program utilize white space and other screen design conventions appropriately?

Yes   No   N/A

Additional comments:

9. _Help users recognize, diagnose, and recover from errors_: _The e-learning program expresses error messages in plain language (without programmer codes), precisely indicates the problem, and constructively suggests a solution._

a. Does the learner receive meaningful feedback concerning the nature of any input they make into the program?

     Yes No N/A

b. If the learner answers a question incorrectly, is he/she told the correct answer and why the answer given was wrong, if this is instructionally appropriate?

     Yes No N/A

c. When feedback is provided, is it given in a clear, direct, and friendly (non-condescending) manner?

     Yes No N/A

Additional comments:

10. _Help and documentation_: _When it is absolutely necessary to provide help and documentation, the e-learning program provides any such information in a manner that is easy to search. Any help provided is focused on the learner's task, lists concrete steps to be carried out, and is not be too large._

a. Is help provided that is screen or context specific?

     Yes No N/A

b. Is help and documentation available from any logical part of the e-learning program?

     Yes No N/A

c. Does the e-learning program include a map or table of contents that allows you to see what you have seen and not seen?

     Yes No N/A

Additional comments:

11. _Interactivity_: _The e-learning program provides content-related interactions and tasks that support meaningful learning._

a. Does the e-learning program provide too many long sections of text to read without meaningful interactions?

     Yes No N/A

b. Does the e-learning engage the learner in content-specific tasks to complete and problems to solve that take advantage of the state-of-the-art of e-learning design?

     Yes No N/A

c. Does the e-learning program provide a level of experiential learning congruent with the content and capabilities of the target audience?

     Yes No N/A

Additional comments:

12. _Message Design_: The e-learning program presents information in accord with sound principles of information-processing theory.

a. Is the most important information on the screen placed in the areas most likely to attract the learner's attention?
      Yes No N/A
b. Does the e-learning program follow good information presentation guidelines with respect to organization and layout?
      Yes No N/A
c. Are graphics in the e-learning program used to clarify content, motivate, or serve other pedagogical goals?
      Yes No N/A

Additional comments:

13. _Learning Design_: The interactions in the e-learning program have been designed in accord with sound principles of learning theory.

a. Does the e-learning program provide for instructional interactions that reflect sound learning theory?
      Yes No N/A
b. Does the e-learning program engage learners in tasks that are closely aligned with the learning goals and objectives?
      Yes No N/A
c. Does the e-learning program inform learners of the objectives of the program and remind them of prior learning?
      Yes No N/A

Additional comments:

14. _Assessment_: The e-learning program provides assessment opportunities that are aligned with the program objectives and content.

a. Does the e-learning program provide opportunities for self-assessments that advance learner achievement?
      Yes No N/A
b. If appropriate to the context, do assessments provide sufficient feedback to the learner to provide remedial directions?
      Yes No N/A
c. Are higher order assessments (e.g., analysis, synthesis, and evaluation) provided wherever appropriate rather than lower order assessments (e.g., recall and recognition)?
      Yes No N/A
Additional comments:

15. _Media Integration_: The inclusion of media in the e-learning program serves clear pedagogical and/or motivational purposes.

a. Is media included that is obviously superfluous, i.e., lacking a strong connection to the objectives and design of the program?

     Yes   No   N/A

b. Is the most appropriate media selected to match message design guidelines or to support specific instructional design principles?

     Yes   No   N/A

c. If appropriate to the context, are various forms media included for remediation and/or enrichment?

     Yes   No   N/A

Additional comments:

16. _Resources_: The e-learning program provides access to all the resources necessary to support effective learning.

a. Does the e-learning program provide access to a range of resources (e.g., examples or real data archives) appropriate to the learning context?

     Yes   No   N/A

b. If the e-learning program includes links to external World Wide Web or Intranet resources, are the links kept up-to-date?

     Yes   No   N/A

c. Are resources provided in a manner that replicates as closely as possible their availability and use in the real world?

     Yes   No   N/A

Additional comments:

17. _Performance Support Tool_s: The e-learning program provides access to performance support tools that are relevant to the content and objectives.

a. Are performance support tools provided that mimic their access in the real world?

     Yes   No   N/A

b. Provided the context is appropriate, does the e-learning program provide sufficient search capabilities?

     Yes   No   N/A

c. Provided the context is appropriate, does the e-learning program provide access to peers, experts, instructors, and other human resources?

     Yes   No   N/A

Additional comments:

18. <u>Learning Management</u>: The e-learning program enables learners to monitor their progress through the material.

a. Does the learner know what he/she is doing and how he/she is doing within various parts of the e-learning program?

  Yes No N/A

b. Does the learner perceive options for additional guidance, instruction, or other forms of assistance when it is needed?

  Yes No N/A

c. Does the learner possess an adequate understanding of what he/she has completed and what remains to be done within any specific unit (e.g., a course) of e-learning?

  Yes No N/A

Additional comments:

19. <u>Feedback</u>: The e-learning program provides feedback that is contextual and relevant to the problem or task in which the learner is engaged.

a. Is the feedback given at any specific time tailored to the content being studied, problem being solved, or task being completed by the learner?

  Yes No N/A

b. Does feedback provide the learner with information concerning his/her current level of achievement within the program?

  Yes No N/A

c. Does the e-learning program provide learners with opportunities to access extended feedback from instructors, experts, peers, or others through e-mail or other Internet communications?

  Yes No N/A

Additional comments:

20. <u>Content</u>: The content of the e-learning program is organized in a manner than is clear to the learner.

a. Is the content organized in manageable modules or other types of units?

  Yes No N/A

b. Is the content broken to appropriate chunks so that learners can process them without too much cognitive load?

  Yes No N/A

c. Does the e-learning program provide advanced organizers, summaries, and other components that foster more efficient and effective learning?

  Yes No N/A

Additional comments:

Please provide any additional comments or suggestions for this program.

Adapted from Thomas C. Reeves, University of Ga. Evaluation Tools Retrieved from
http://it.coe.uga.edu/~treeves/edit8350/tools.html

Appendix I

EVALUATION INSTRUMENT FOR SUBJECT MATTER EXPERT

Introduction

Thank you for participating in the evaluation of this program. Please keep in mind that the design and development of the course is not completed and that you are being asked to make judgments and suggestions about the content to help improve the quality of the course. Background course information is listed below to help you better evaluate this program.

6. Target audience and learner characteristics: The target audience for the course is nurses entering into the field of cardiac nursing.

7. Instructional goals and objectives: Upon completion of this course the participant will be able to:

   - Describe the anatomy and physiology of the heart including the cardiac cycle.
   - Relate the parameters of cardiac output to clinical condition.
   - Describe the electrophysiology of the heart.
   - Accurately identify cardiac arrhythmias.
   - Analyze the 12 lead ECG to detect cardiac ischemia and infarction.
   - Utilize ECG findings along with patient clinical condition to choose appropriate interventional strategies.

8. Typical context for using this program: This program will be utilized at scheduled intervals in the computer lab(s) within the organization during the employee's orientation period. The employee may also access the program from home if the appropriate computer requirements can be met.

SUBJECT MATTER REVIEW

Name_____

Date_____

Please answer the following questions by circling Yes, No or N/A.
1. **Introductory Objectives and Directions:**
   a. Do you feel the objectives of the course are clear?
      Yes   No   N/A
   b. Are students given enough information about what the course will cover?
      Yes   No   N/A
   Additional comments:

2. **Course Structure**
   a. Is the content clearly and logically organized?
      Yes   No   N/A
   b. Is the sequence of information within each lesson logical?
      Yes   No   N/A
   Additional comments:

3. **Course Content**
   a. Is the course content accurate?
      Yes   No   N/A
   b. Is the information comprehensive?
      Yes   No   N/A
   c. Is the amount of information consistent with the objectives?
      Yes   No   N/A
   d. Is the content presented at the appropriate level?
      Yes   No   N/A
   e. Does the course content help to achieve the objectives?
      Yes   No   N/A
   f. Are examples meaningful and helpful?
      Yes   No   N/A
   g. Are important points emphasized?
      Yes   No   N/A
   h. Are questions presented clearly?
      Yes   No   N/A
   i. Does answering the questions help achieve the objectives?
      Yes   No   N/A
   j. Is there any unnecessary information included in the lessons?
      Yes   No   N/A

k.   Are there sufficient numbers of examples and practice items included in the lessons?
     Yes   No   N/A
l.   Does the course content reflect what the participant is expected to know in the
     workplace?
     Yes   No   N/A
Additional Comments:

Please provide any additional comments or suggestions for this program.