# Online Course Development

# "Accessing Single Family Housing Guaranteed Loan Program Online Applications"

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**Individual Project**

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## Table of Contents



***For ease of formatting and publication all project artifacts are attached to this report as separate documents.

**Abstract**

USDA Rural Development administers a loan program that aids single families in obtaining housing in rural areas of the United States. In its current form the loan program involves a large amount of "paperwork" and ongoing teacher-led training for lending institution staff. Both of these elements lead to inefficiency and mistakes as information is exchanged between USDA and lending institutions. USDA Rural Development recently obtained funding to develop an online curriculum to teach lending institution staff how to fully utilize a series of online "applications" available to administer the loan program. The effort is intended to reduce paperwork and provide easy-to-access, up-to-date training to lending institution staff.

This project highlights the instructional design process used to develop one of the E-courses included in the online curriculum. This course teaches staff how to complete the steps necessary for accessing the online loan program applications from USDA. The instructional design process ends with the development of a "storyboard" which computer programmers use to create a functional "online" course. Creating an E-course storyboard is an iterative process that involves an instructional designer working with a group of subject matter experts from USDA. Key steps in the instructional design process include: development of course learning objectives; creating a detailed outline of content to "teach"; sequencing media and learning activities for the course; and synthesizing an examination to measure learning. Each element builds upon the next until a final set of storyboards are complete.

The instructional design process outlined here concluded with a final storyboard for the initial course in the online curriculum. The course storyboard is being used by computer programmers to develop the functional course. Once programming is complete this course will be test piloted, revised, and then made available to lending institution staff.

## Project Artifacts Narrative

Various artifacts produced throughout this project are referenced in this summative report. The artifacts referenced are final documents produced and used in the development of the E-Learning Course. This brief narrative is provided in an effort to establish some context around the various products mentioned throughout the paper.

<u>Artifact A – Critical Tasks and Course Learning Objectives</u>
This document provides a matrix that outlines the critical tasks expected of learners who complete this course. Each critical task is then decomposed into terminal learning objectives and enabling learning objectives. This is the initial document created in the instructional design process for an E-learning course.

<u>Artifact B – Detailed Course Content Outline and Instructional Media Plan</u>
This document provides a matrix that connects detailed course content with each of the terminal and enabling learning objectives. The instructional media plan then provides an outline of what the student will "do" and "see" as they interact with the specific "chunks" of content.

Artifact C – Course Storyboards
This is a PowerPoint document that provides a visual example of the actual online course. Additionally, it provides instructions for the programming team who will actually "program" the online course.

Artifact D – Project Timeline
This is a PDF of the master project timeline for the entire project. The project timeline is essential to the administration of the overall project.

Artifact E – Personal Project Timesheet
This Excel file provides my personal timesheet kept as a log of my work on the project.

Artifact F – Course Examination Package
The course examination package is a document that provides a "bank" of questions to be asked of learners after completion of the course. The examination is provided as part of the overall evaluation of student learning.

## Part 1 - Content, Context and Audience

Content

The content of any educational program forms the true substance of the intervention. This section is provided as a brief overview of the content guiding the development of the online courses for lending staff who work with the USDA to administer the single family guaranteed loan program. USDA Rural Development staff maintains that to serve borrowers effectively, the lending staff must master three things. First, they must thoroughly understand the loan program and the regulations that govern it. Second, they must know what procedures and documentation are required. Finally, they must understand the systems and tools that enable them to submit materials and process transactions. The course I am developing will provide learners with an overview of the online applications available to lenders and the content is organized with these three objectives in mind.

There are three specific content topics addressed in this first course for lenders. First, lenders will interact with very general information that outlines the online applications necessary for administering the guaranteed loan programs, the steps involved in obtaining access to the applications, and the people involved. The specific online applications discussed in this section include: the Guaranteed Underwriting System (GUS), the loan closing system, the loss claims mitigation system and the Electronic Data Interchange (EDI). Second, lenders will obtain information regarding the process necessary for obtaining an eAuthentication account from the USDA. All lenders must have a level 1 USDA eAuthentication account in order to access the online applications available for administering the guaranteed loan program. Obtaining these credentials occurs through an online portal sponsored by the USDA. Finally, the course will provide a group of selected lending officials with the information necessary to perform their role as a security administrator in their local bank branch. Each bank selects one or two individuals to serve in the role of security administrator. These individuals must be able to navigate a system called the Application Authorization System Manager in order to carry out their stated duties.

## Context

Caffarella (2002) defines context as the “human, organizational, and environmental factors that affect decisions planners make about programs” (p. 59). These three elements are discussed here as an overview of the context for the online course under development. With regard to this particular educational intervention it is important to consider the fact that two cultures, USDA and Lending Institutions, are interacting as this course is developed and delivered. The issues faced by staff in each of these unique cultures will influence the decisions that are made throughout the development process.

With regard to people issues there are several key contextual factors related to both USDA and Lending institutions that will influence the program planning process. For example, the USDA program staff has typically delivered this training and has immense content knowledge about the “inner-workings” of the online applications. Much of the tacit knowledge possessed by these subject matter experts is rarely made explicit in writing. In creating the course it will be important to extract as much of the tacit knowledge these experts carry “in their head” and use it to develop a useful course for the end users. The USDA staff will rely on these courses to replace the in-person training they previously offered so the staff is paying close attention to all aspects of the program development. A small team of staff have been assigned to represent the entire USDA group in providing feedback related to these issues throughout the development of the online courses.

With regard to people issues there are also facets of the lending institution that will impact the decisions made throughout the development of this course. First, it is important to consider that the lending institution staff is not only dedicated to administering this one program from the USDA. Each staff member has multiple responsibilities and roles at their lending institution. A second issue to consider is that there will be a certain level of investment in using the courses from the lending institutions. Officials at the bank had to go through a process to be able to administer this particular loan program to bank customers. Thus, the course developed must meet expectations from officials who have already invested by dedicating time for staff to complete the program.

## Organization Setting Elements

Caffarella (2002) outlines that there are three key elements to the organizational setting including: structural, political, and cultural. With regard to structural elements of the setting it is important to consider the technology available at each lending institution. All lending staff will need to access the World Wide Web to participate in this training. It is also important to consider the experience level learners will have using technology. Given the nature of banking it is likely that staff at each site will, at least, be very familiar with using personal computers. It is also important to consider that the decision to participate in the program will likely be a mandatory part of the staff member’s job. Since the staff must eventually use the online applications in order to conduct business with USDA the courses are vital to the bank’s ongoing participation as a provider of this particular loan opportunity.

Political elements of the setting are also important to consider and will impact the planning process. In this particular situation, the USDA has a considerable amount of “power” in the setting. After a period of time, unless you utilize the online applications you cannot transact business associated with the single family guaranteed loan programs. Thus, the online training is “politically” important for institutions to complete. Additionally, it is worth considering that the entire program concept is driven by a “political” effort. The Rural Development agency’s attempt at "going paperless" is a reaction to a congressional mandate to reduce "paperwork" among all government agencies. Thus, the political elements of this setting are impacting the choice to use an online mechanism to deliver the courses.

Assessing the wider environment also provides additional information regarding the organizational setting. One issue in the wider environment that may impact the ongoing development of this course is funding. Although funding for the course development is provided through an existing grant the funding for the actual loan program is set by Congress on an annual basis. If the congress fails to establish necessary funding for continuation of the loan program then the online courses are relatively useless. Thus, decisions by congress may influence this two year project. (This, however, will not influence my particular course currently under development.) A second issue is that the online courses are currently funded by a grant to the government agency. The agency had to "compete" for the money awarded and must demonstrate a clear and measurable return on investment through the online courseware developed. This affects how we as consultants develop several aspects of the course including objectives, examination, certification, and course content.

One last element of the setting is the larger psychological environment in which the courses will be completed. With respect to "thinking" the participants are likely to be very busy throughout the day. Completing the courses may be just another "task" on their daily task-list. Thus, the course must have some elements that draw the learner in and make them an active participant in the learning. Otherwise there may be a tendency to "click and get" as they simply move from one slide in the presentation to the next. One positive aspect of the psychological environment to note; previously participants had to take time off work to go to an actual conference to get this information. Now, learners do not have to leave work and thus may enter the program with less stress about leaving behind their other duties for an entire day to get the information during a teacher-led training. Additionally, the online delivery approach provides more flexibility for learners to pace the course material as fast or slow as they desire.

## Philosophical Basis

According to the class lecture on major philosophies, theories, and models of adult education Elias and Merriam outline five philosophical bases for learning in adulthood. The project described above has a strong basis in the philosophy of behaviorism. Generally this philosophy holds that the purpose of learning is to divide knowledge into fragments and then teach those fragments to learners in a highly controlled and structured environment. This is reflected in the online courses in that the focus is on producing observable behaviors rather than internal thought. As well, the behaviorist notion of contiguity as outlined by Merriam, Caffarella & Baumgartner (2007) is reflected in the online course development as we are using a program called Captivate™ which allows us to simulate the actual online environment in the course thus developing an environment that very closely mirrors exactly what the learner will encounter when they have to demonstrate the behaviors on their own.

The theoretical orientation also flows directly from the philosophical basis in that it reflects a Behaviorist theory of learning. Theoretical assumptions from behaviorist theory focus on breaking down tasks into smaller chunks that can be rehearsing and mastered through operant conditioning (Merriam, Caffarella, & Baumgartner, 2007). The objectives of this program and the overall design of each online lesson are focused on rehearsal of specific behaviors. For example, my first step in lesson planning was to do a task analysis to outline the critical behaviors necessary to "operate" the online application that learners must use. From there I develop a list of specific terminal learning objectives focused on the outcome behaviors we want to see in a learner after completing the course. Lastly, those terminal learning objectives are broken apart into several smaller chunks of learning called enabling learning objectives. This example is provided to emphasize the highly structured approach behind the Behaviorists assumptions about learning. The result of this process is a highly structured learning experience where learners are focused on rehearsal of specific tasks.

Finally, Knowles assumptions regarding adult learners is a widely talked about model for adult education interventions. E-Learning approaches, such as the online courses for lenders administering the loan program, reflect several of the assumptions Merriam, Caffarella, and Baumgartner (2007) outline for Knowles notion of Adragogy. For example, each of the courses will provide lenders with information that has immediate application in their everyday work. Knowles' assumptions suggest that adults move from a future application of knowledge to immediate application which supports approaches that emphasize the immediacy of E-Learning approaches. As well, Knowles posits that the readiness of an adult to learn is related to his or her role at work. Another key aspect of the courseware supported by Knowles' assumptions regards the voluntary nature of the courseware. The lenders are not required to complete these courses. They are provided in addition to print materials to enhance understanding. This approach to course delivery is supported by three of Knowles' assumptions. First, adult learners are more self-directing in their learning. Second, adults who know why they need to learn something are more prone to seek out a learning experience. Finally, the most potent motivation for learning is internal rather than external. Thus, the course reflects a basis in Knowles adult learning model.

Audience/ Participants

The end user of this program will include a variety of individuals at lending institutions across the country. The people involved include bank officials (i.e. a vice-president or president), loan officers and administrative assistant personnel at each lending institution. All institutions participating will have prior approval to administer the single family guaranteed loan program. Because the guaranteed loan programs are geographically driven the lending institutions tend to be in rural areas of the country. (To qualify for a loan through this program the client must demonstrate a certain level of financial need and the property being purchased must be in a designated rural area.) According to the Rural Policy Research Institute (RUPRI) citizens in rural America are proportionately older than metropolitan areas. According to data shared during a start of work meeting over 55% of the staff projected to complete the online coursework will likely be female. Education level for the end user will likely be dependent upon the role the staff has in the lending organization. For example, loan officers typically have a college degree or some college coursework completed. On the other hand the individuals at the institution who fulfill the role of security administrators are commonly administrative staff who has a high school diploma. However, some of these staff may have completed additional education through associate degrees or college coursework after high school.

The audience may be further defined by considering the specific entry behaviors they should possess before completing the course. First, the lending staff is expected to have a general understanding of the purpose of the loan program. There are information sheets available from the USDA that outline the guaranteed loan program. All learners should have a general understanding of the program purpose before they participate in one of the online courses. Additionally, the learner is expected to have a clear understanding of their role in administering the loan program before they complete the online courses. Each course is divided into multiple modules. Depending upon the role the particular staff plays in administering the program they will need to complete different modules within a course. For example, in my course the third module is only for those staff who will play the role of security administrators. Thus, the lending staff must know if they play that role before they can complete the appropriate modules within the course. Finally, lending institution staff is expected to have a basic understanding of the lending process and finance in general. My course does not have a large proportion of technical finance terms. However, one of the other four courses in this particular set will deal with helping lending staff understand how the online underwriting system makes calculations to determine the amount of the guaranteed loan. This particular course has a number of terms that are commonly used in the lending practice and staff is expected to know what those terms mean before completing this course.

To stay “in touch” with the audience throughout the development of the course I have been assigned a small team of five staff from USDA. This small team serves as subject matter experts in two ways. First, the individuals provide content knowledge regarding the inner workings of the online applications. Second, this group has a deep understanding of the actual audience of learners. Some of the USDA staff were lenders at one time, and others work with the lending institution staff on a daily basis. This group is responsible for reviewing and providing feedback at each “step” in the course planning process. For example, after the course objectives are written this group will review the product and provide feedback to ensure the end result meets the audience’s needs. Knowing and understanding the audience is essential in developing an online course. As the “facilitator” I do not have the luxury of adjusting my instruction after meeting the audience and getting to know them personally.

## Part 2 – Needs and Objectives

<u>Needs Assessment</u>

Caffarella (2002) outlines both formal and informal approaches to conducting a needs assessment. She outlines that formal needs assessments are most pertinent in situations when little is known or documented about the audience for which the training is being prepared. Given that the USDA staff knows quite a lot about the lending institution staff who will be using the online modules a less structured approach to needs assessment was chosen to determine the audience needs for this project. Additionally, the scope and budget for the project do not allow for a full scale formal needs assessment.

There are two primary sources for information about the audience’s needs. First, a start of work conference with USDA staff who regularly interact with the lending institution officials provided an initial layer of information. During this start of work meeting the USDA staff shared common issues the lenders have with accessing the online applications. For example, the lending institutions often have a hard time getting the security administrators prepared to conduct their responsibilities prior to other individuals at the banking site trying to log on. Thus, there is a need to prepare a special lesson in the program for lending institution officials to help them understand the sequence of steps necessary to get their bank up and running. A second source of needs information came from conducting a task analysis using the online software from the perspective of the banking institution user. This source generated a list of the critical steps necessary for completing the desired tasks outlined by the USDA staff. I personally conducted this task analysis and compared notes with a second colleague working on the project to ensure I did not miss any required steps. The results are shown in the matrix of objectives later in this document.

Objectives

According to Caffarella (2002) there are three levels at which program objectives may be focused: individual, organizational, and community. Given the program purpose the objectives written are at an individual level. The program objectives are organized into a matrix (shown on the following four pages) to ensure all critical tasks were addressed throughout the program.

As mentioned before, this learning intervention is rooted largely in behaviorist notions of learning. Thus, the objectives seek to break down larger behaviors into manageable learning tasks. The critical tasks were identified through the needs analysis. Those tasks were attached to one or more terminal learning objectives. Terminal learning objectives (TLOs) are the intended individual level result for anyone who completes the course. The enabling learning objectives (ELOs) are provided in an effort to break the TLOs and critical tasks into specific and measurable chunks of learning. Artifact A shows the actual learning objectives for this course.

Rationale for Program Setting and Content

The nature of the critical tasks and objectives identified for this program further support the delivery of this course through an online medium. The tasks identified through the needs analysis are very basic steps that require a one time demonstration. The online medium chosen will allow the steps to be clearly demonstrated for the user as they follow along online. Additionally, the objectives call for learners to demonstrate understanding of the task in a hypothetical environment. The online medium can provide this experience for multiple people at one time rather than students sitting in a classroom, watching someone else demonstrate the steps on an overhead screen, and then trying to replicate it once they arrive back home. Finally, the notion of situated learning provides further credence to using this setting for delivering the content. Lave and Wenger (1991) suggest that procedural learning is best facilitated within the specific context in which the procedure is to be applied using the same tools the individual will have available when asked to repeat the steps in the future. Thus, learning the procedure outlined is best facilitated by learning the steps at the same station where the user will be expected to repeat the actions in the future.

## Part 3 – Process, Design, Methods

Process and Methods

The process and methods of instruction for this project are outlined in a document called the Detailed Content Outline and Instructional Media Plan (Artifact B). Like most other documents created for this project a matrix design was chosen. This design allows me, the instructional designer, to ensure I am meeting the core terminal learning objectives set forth for the project. The first column in the matrix provides the terminal learning objectives for the course and thus reflects the most important objectives that must be met by the course.

The Detailed Content Outline provides the instructional content that will be “taught” to the learner as they experience the online course. This column is organized by “learning topics.” The learning topics are directly tied to the enabling learning objectives outlined in the previous section of this course.

Finally, the third column provides a “skeleton” framework of the activities and methods by which learners will be interacting with the information in the detailed content outline column. Since the course is delivered online there are no specific instructions for an instructor. However this column documents the student experience and outlines the specific online “tactics” that will be used to deliver the content.

This document is shared with key stakeholders involved on the project. This particular juncture in the project is essential as the next step – assembling the media and learning materials becomes a “point of no return.” The detailed content outline and the sequencing issues need to be addressed at this point in the project prior to assembling the actual storyboards which will be used by the programming team to make a workable product.

Media, Materials and Rationale

The next step in the instructional design process for this particular online course is the development of storyboards. The storyboards provide a tool with dual purposes. First the storyboards provide a way to communicate a visual representation of the approved detailed course outline and instructional media plan to the client.  Second, the storyboards provide a way to translate the course content into programmable pieces. This is an important transformation point in the development of the online course.

The storyboards presented in Artifact C of this document serve as a representation of the online course as the user would experience it. The storyboards outline the following key approaches to delivering information: text on screen for the user, audio narration text, animations on the screen, and instructions for interactive screens with layered information (i.e. a student rolls their cursor over a box and reads additional information in a pop-up). Given the budget constraints, timeline and scope of this particular course these are the four primary learning devices chosen. There are more sophisticated learning devices available, but they would require more time in programming than is available and ultimately that means more budget dollars. Thus, the nature of the learning devices meets the project requirements while staying within the limitations provided for this particular section of the overall USDA project.

## Part 4 – Administration

Administrative Issues

In planning for any adult education experience there are several issues associated with the administration of the program. With regard to this particular project there are several administrative issues related to the management of the development process that warrant additional consideration. The following table summarizes five key issues related to administration of a large development project such as this one.

**Table 1 – Administrative Issues and Resolutions**

| Issue | Resolution |
|---|---|
| **Internal Project Team Scheduling –** Members of the internal project team include project staff from Vivayic (the group I work with), ABG Inc., and Vertex. These individuals are each working on multiple projects beyond the one for USDA within each of their respective organizations. As well, the project staff members are working on various aspects of the USDA project. Thus, there could be | To address this issue, the project team utilizes Microsoft Project, a project management tool, to do the following:<br>▪ Communicate a master list of tasks including each task’s due date, the duration the task is expected to last (i.e. 1 day or 2 hours), and the individuals responsible for the task.<br>▪ Provide real-time updates as activities |

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| issues related to coordinating human resources available to complete the USDA project. | and/or key due dates are updated by the project leadership at USDA.<br>▪ Provide real-time updates regarding the completion of activities by all project members. Thus, one can literally see the project "coming together" as tasks are completed. |
| **Internal Project Team Coordination and Communication –** Facilitating regular coordination and communication among the internal project team is a large issue that must be addressed. This is an issue for three reasons. First, there are multiple courses under development at one time in this project. Additionally, many individuals may need additional help in completing a particular task or milestone in the project. Finally, some project tasks are dependent upon tasks that precede them in the project plan. Thus, all members must be aware of what is done and how it was done so that future tasks may flow seamlessly from the work that is already completed. | To address this issue, the project team meets once weekly on Fridays via teleconference and web cast meeting. All internal project team members are expected to attend and share a summary of what they have been working on and where they are at in the development process. Members may ask questions of each other and get answers to key questions so that they may complete their respective part of the project. The meetings also become a place for negotiating needed changes in the project timeline or brainstorming solutions to a particular problem everyone is facing. This time also provides members with an opportunity to seek help in areas where it is needed. |
| **Infusing Subject Matter Expertise with Instructional Design Expertise –** USDA staff have a great deal of subject matter expertise regarding the loan programs and the users of the e-Learning courses. The consultants working on the project have a deep understanding of instructional design and e-Learning programming. One issue that is vital to the project's success is finding creative ways to ensure both groups have an active role in the development of each course. | To address this issue course project teams were created to couple individuals with instructional design knowledge with individuals who have subject matter expertise. Each course has a team of subject matter experts (SMEs) representing both USDA and instructional design perspectives. The instructional designer's role is to ensure sound instructional design principles and templates are used while creating the course. The group of SMEs ensure that the course material produced by the instructional designer meets the needs of the intended course user and that the material is accurate. |
| **Ensuring Quality Control Throughout the Process –** There are multiple documents created for this project. Each document must reflect a particularly high level of quality. In the end, the courses developed will be a reflection of the USDA in the eyes of the internal and external learners who participate in the online curriculum. | To address this issue a detailed approval process for each milestone in the project was identified at the start of work conference. Each milestone reflects a document or product that moves the group one step closer to a completed e-Learning course. The full approval process is addressed in more detail in the following section of this paper. |
| **Data Management –** Throughout the | To address these issues two data resource |

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| development of each key document there are multiple versions created by the instructional designer. For example, my particular one hour course had a total of 26 different versions of various project milestone documents. In addition, the approval and feedback gathering process involves multiple checkpoints and individuals in multiple locations around the country. It is essential that a consistent and secure method for sharing documents be implemented. In addition, the system must be able to facilitate sharing among multiple individuals who have different schedules and working locations. | solutions have been employed. First, a product management system called the Product Presentation System, or PPS, will be used. This particular program allows for the instructional designer to "post" a project milestone document on a secure project site. From there anyone involved in the project can access the document and review each page. Additionally, each reviewer can log page specific comments and feedback for the instructional designer to consider in the next "version" of the document. PPS allows the instructional designer to sort feedback by type, page, and or reviewer. In addition, the instructional designer can ask for clarification from the reviewer electronically with a simple, point and click e-mail feature. Lastly, the instructional designer can notify others when the feedback is incorporated and a new version of the document is available for a final review by the project leaders. Second, a secure FTP site was established to manage the documents for each course. This site is available for only the internal project team and each course is organized using the same file structure and file naming conventions. For example, each file has a version number and a particular way the file name is constructed. This allows any project leader to go directly to the documents for a specific course and find the most recent version of any file created for that course at any time throughout the development process. |

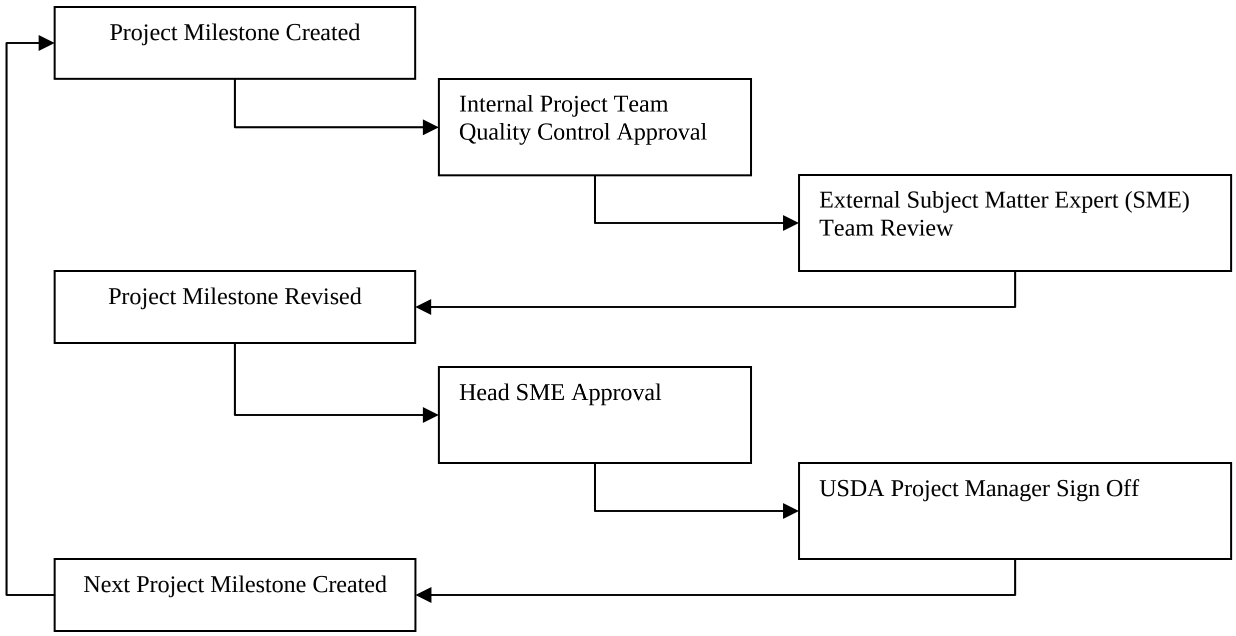
Approval Process

As part of the "start of work" conference with USDA the consultants and the client outlined a formal approval process for each of the courses included in this project. The approval process is intended to enhance the overall quality of the final product as well as ensure the product meets the client's specific needs. For consistency, each electronic course created follows the same instructional design approach. Instructional designers create four key documents, or milestones, for each course. The milestones are as follows:

- Critical Task Matrix/ Terminal Learning Objectives/ Enabling Learning Objectives
- Detailed Course Outline & Instructional Media Plan
- Course Examination Package
- Course Storyboards

After each milestone is created a rigorous approval process ensues. This process engages both internal and external project staff. In general, the approval process for each milestone is summarized in the following flowchart.

**Figure 1 – Flowchart of Project Milestone Approval Process**




As shown in the chart, the approval process occurs at two levels: internally and externally. Internal processes are the first step in producing a quality product. Internally, the project team collaborates to ensure an initial level of quality. Each document that is produced must go through the following before delivery to the client:

- A cover letter detailing what the document is and key questions the client should use in evaluating the document must be attached.
- The document must be reviewed by at least two internal project team members. The first team member must be someone who is also working on materials for the same topic. The second team member must be someone who knows very little about the specific topic addressed in the document. These individuals are to look for:
  - Is the content accurate?
  - Is the document free of errors related to grammar and/or writing conventions?
  - Does the content make sense to someone who knows very little about the topic?
  - Was the document template created for this particular product used appropriately?
- The document must be formatted by the internal media and graphics team to ensure consistency.

The document creator is responsible for ensuring this internal process happens on his or her project documents. Once the document goes through the internal review process the approval process shifts to an external review of the particular product/document created.

USDA Staff were organized into teams of subject matter experts (SMEs). Each team of SMEs were then assigned to work with various internal project liaisons. The internal liaison is the primary point of contact between the SME group and the project team. For example, I worked with one internal project liaison from the consulting company as the instructional designer for this particular course. This person was responsible for communicating with the head SME for this particular course at the client's headquarters in Washington D.C. The SMEs assigned to each course provide comments and feedback through an electronic system called the Product Presentation System (PPS). Through this system a user is able to see an image of each page of the document. The user then logs feedback through an electronic bulletin board type system while they are looking at each page. The idea is that the SMEs may review at any time, but the feedback ends up looking like an ongoing conversation between the entire course project team.

After comments from the SME group are logged in the PPS program the instructional designer reviews all comments and logs responses to each SME comment. If the comment warrants changes to the document those "fixes" are made and the comments are tagged as "fixed." Each requested "fix" is then verified by the internal project liaison for the course. The revised milestone document is then re-posted to the PPS program for a final round of approval.

The head SME for the course reviews the revised document and provides an electronic "sign off" for the document in the PPS program. This "sign off" sends an E-Mail alert to the USDA project leader signaling that they may now review the milestone document and provide final approval. Once the USDA project leader provides final approval the instructional designer begins to create the next project milestone.

Detailed Budget

Budgeting within a large project like this one is essential to the overall project's success. When thinking about budgeting one likely thinks of the dollars involved in budgeting for the course. However, budgeting for the course also involves budgeting human resources to maximize production and end product quality. Due to the nature of the overall project I am not allowed to share the specific dollar budget for the development of all the courses. Budget files have been marked as confidential due to the sensitivity of the stakeholders involved in the project. However, I can speak about the issues related to budgeting human resources related to the development of each course. There are two aspects I will address. First, this section addresses budgeting time and resources for the project by providing an overview of the elements considered in the creation of a detailed project timeline. Second, this section provides an overview of how my time as a subcontractor was budgeted and tracked throughout the development of the initial courses.

Time is money! Each person working on this project invests time and expertise that equates to monetary costs. Thus, in thinking about budgeting, it is quite appropriate to think about the time each human resource spends on each piece of the project. When a project like this is negotiated the "price" is negotiated based upon the number of course hours the client expects to have at the end of the project. Roughly, from an instructional design perspective (not including any of the technical programming to make the E-course functional), a one hour course requires approximately 80 hours of development time. Thus, my one hour course was budgeted as 80 hours of the total development time in the original contract with USDA. The total project will involve development of 200 hours of worth of e-Course material which equates to about 16,000 hours of development time. Based upon the estimated hours of development time the initial consulting group identified a project team of four full-time internal instructional designers and two external sub-contracted instructional designers (I am one of the two external instructional designers) to complete the entire project. A master project timeline was created to allocate both the human resources and the "contracted" project time required for completing each course. In the end the project timeline spans a period of over two years. Artifact D provides an example showing how the total course load is distributed over this two year span of time. It also demonstrates the careful budgeting of human resources on this particular project. This document is updated weekly (sometimes daily) and helps to ensure the project does not exceed the resources available.

As subcontractors, the company I work with agreed to complete 10 hours of the 200 hours of course work for the overall project. This equates to approximately 800 hours of development time. To ensure accountability in the process I keep a timesheet using Excel. The timesheet shows the number of hours I work on each course in the project. This timesheet allows me to communicate the amount of contracted time utilized in the development of each course. In addition, it provides for accurate billing of my time against the appropriate course budget. Artifact E is an example of my project timesheet as of March 1, 2007. This shows the number of development hours I have invested in the project after completing the first one hour course.

Transfer of Learning

Caffarella (2002) discusses transfer of learning as one of several aspects regarding the administration of effective adult learning programs. In particular, she challenges program planners to consider planning for transfer of learning as part of the actual course development process. Caffarella suggests that program planners consider how to facilitate transfer of learning for the learners before, during and after the program. Following in this same framework I have outlined how transfer of learning has been planned for with the one hour course I developed.

**Before the Course…**

- Learners will all sign up to take the courses offered through a central learning management system. Once a learner signs up to take the course they will receive an e-mail confirming that they may access the course. This e-mail will identify the specific objectives for the course they have elected to take.

**During the Course…**

- The examination package for each course provides one avenue to assure transfer of learning. Each exam package must include at least three real-world scenarios where learners demonstrate how to apply the steps and tasks learned in a "simulated" operating environment. For example, learners who complete the course I developed must demonstrate the actual keystrokes and mouse clicks required to navigate through the process involved in obtaining their eAuthentication credentials. They do this through a series of static "webpages" that look exactly like the pages they will encounter when they do this process after completing this module.
- In addition to the real-world scenarios in the examination package; the summaries included at the end of each module encourage learners to take the next 10-15 minutes to complete, or practice, the tasks outlined in that particular module using the real online applications available from USDA.

**Following the Course…**

- Learners will be required to utilize the online applications to conduct business with the USDA. Thus, they must use the knowledge and skills acquired through the courses to function within the online system available for administering the loan programs.

- Learners will receive a confirmation e-mail that the course is complete. This e-mail will also be sent to the security administrator at each banking location. The idea is that the security administrators will hold the lending representatives accountable for appropriate use of the online applications.
- Learners may also access additional help online for any of the online applications using the USDA Lender Interactive Network Connection website. They may also take the course again if they would like as they are offered free of charge.

## Part 5 – Evaluation

Introduction

Ongoing evaluation is a priority with this particular project. Both formative and summative evaluation will be utilized to evaluate the quality of the program and ultimately the return on investment (ROI) for the government. Caffarella (2002) notes that programming for systematic program evaluation is essential to program success. However, she also notes that evaluation cannot be an “afterthought.” Systematic evaluation is woven into a successful adult education experience’s fabric throughout the planning process.

As an instructional designer on this particular project I am not a part of the larger conversations on ongoing and program level evaluation related to all of the courses under development. However, in this section of the report I will elaborate on what I think could be done to evaluate the program with a systematic approach. The primary examples of evaluation I do share will be from the evaluation of learning which is within the scope of my role in the project.

Approach to Evaluation

Caffarella (2002) presents several approaches to evaluation. The program I am working with is rooted in behavioral models of teaching and learning. According to Caffarella (2002) Kirkpatrick’s (1998) “Levels of Evaluation” provides an approach that best matches with a program that is primarily built around a set of behavioral objectives. Kirkpatrick’s approach focuses on developing evaluation tools and methods designed to measure behavior at four different levels for the project. The first level involves measuring participant reactions to the program. This is similar to the “smiley face” evaluations we see at the end of many programs we attend. The goal is to obtain a quick snapshot of key stakeholder reactions to the program.

The second level involves measuring participant learning. This level is often measured by delivering a standardized test related to the learning objectives. This level is based upon the specific learning objectives set for each learning session. The goal is to capture a picture of how well students understood or retained the information taught. Evaluating learning like evaluating reactions are both feasibly accomplished at the end of the actual program (or throughout).

The third level involves measuring participant behavioral change. To me, this level is based upon the program’s terminal learning objectives. The goal is to determine whether or not student’s behavior or more or less consistent with the behaviors the program is intended to encourage or develop. This form of evaluation usually occurs after students have returned home.

The fourth level involves measuring program level outcomes within an organization. The key question addressed at this level is, “What overall impact has the program had on the client or customers of the organization?” In this case, we are interested in knowing, “How has the program influenced a bank’s ability to administer the Single Family Guaranteed Rural Housing Loan Program?” This form of evaluation usually occurs quite some time after students have returned home from the program. Often times these results are not obtained until a full year after the implementation of a particular program.

Other approaches to program evaluation were considered such as a systems evaluation or case study methods. With a systems evaluation the focus of the evaluation would be on the actual online delivery of the program. This approach seems to be too limited and takes the focus from the behavioral objectives the whole program is built around to the "package" in which the behavioral objectives are delivered. Since the USDA is already using a well established Learning Management System (LMS) to deliver courses similar to this one to lending institutions a systems evaluation would provide little information related to the substance of this program. The systems evaluation would be more relevant for those who develop and/or maintain the USDA's LMS. Additionally, a case study method would likely reveal some important considerations for the overall program. However, this method does not fit within the budget or time constraints provided. Thus, I believe the Kirkpatrick (1998) model presented earlier provides the approach and methods for an evaluation that best matches the overall program.

The following table elaborates on elements of my proposal for evaluating the overall project using Kirkpatrick's (1998) model. The first two levels measured have further been split into formative and summative approaches. To clarify my thinking, formative approaches can be implemented as the student is completing each module in the course. In this case there are three modules in the course. Summative approaches shown below happen after this particular course is over. In reality, formative approaches may occur as one user completes multiple courses throughout the entire online curriculum under development. However, for the purposes of this summary report I will limit my discussion to the particular course under development at this time. Further, I have not split the last two levels in Kirkpatrick's model into formative and summative approaches. This would seem redundant since both of these levels are so closely focused on summative evaluation.

**Table 2 – Plan for Evaluation: Applying Kirkpatrick's Four-Level Model**

| Level | Criteria to be Evaluated | Proposed Method(s) to Collect Data | How Data are Collected & Interpreted | Sample Question(s) |
|---|---|---|---|---|
| **Participant Reactions** | **Criteria for Formative Evaluation of Reactions**<br>▪ Topic Relevancy<br>▪ Participant Expectations<br>▪ Module Length<br>▪ Appropriateness of Learning Activities | **Method for Formative Evaluation of Reactions**<br>▪ Online Questionnaire at the end of each module (4 questions) | **For Both Formative and Summative Evaluation of Participant Reactions…**<br>Students respond to a series of 10 or fewer statements using a Likert-type scale. Data can be analyzed to determine if a significant proportion of respondents responded either positively or negatively to each of the items presented. | **The following questions are sample questions for formative or summative evaluation of participant reactions…**<br>Evaluate your reaction to each of the following statements using a scale between 1 and 5 where 1 is strongly disagree and 5 is strongly agree.<br>▪ This learning module met my expectations<br>▪ The course was an appropriate length given the time I |
| | **Criteria for Summative Evaluation of Reactions**<br>▪ Participant Expectations<br>▪ Course Relevancy<br>▪ Course Length<br>▪ Appropriateness of Learning Activities<br>▪ Ease of Use | **Method for Summative Evaluation of Reactions**<br>▪ Online Questionnaire at the end of the course (6-10 questions | | |

| | | | | |
|---|---|---|---|---|
| | | | | have available for completing this program at work |
| **Level** | **Criteria to be Evaluated** | **Proposed Method(s) to Collect Data** | **How Data are Collected & Interpreted** | **Sample Question(s)** |
| **Participant Learning** | **Criteria for Formative Evaluation of Learning**<br>▪ Enabling Learning Objectives | **Method for Formative Evaluation of Learning**<br>▪ Learning check questions presented throughout the online modules. Participants experience immediate feedback regarding their answer and the correct answer as they respond.<br>▪ The actual learning check questions for this course are located in **Artifact C.** | **Regarding Formative Evaluation of Learning…**<br>No specific data is planned to be collected as students complete the course. The notion here is to provide students with sample questions similar to those from the bank of questions on the course exam, have the student respond, and provide students with feedback based upon their response. | **Example Learning Check Question from the Course…**<br><br>Which of the following is one of the four roles that may be assigned to a representative?<br>a. Security administrator<br>b. Branch administrator<br>c. **Administering loans**<br>d. Lender user agent |
| | **Criteria for Summative Evaluation of Learning**<br>▪ Terminal Learning Objectives | **Method for Summative Evaluation of Learning**<br>▪ Online test generated from the testing software that is part of the USDA Learning Management System. Questions are drawn from a "bank" of available questions according to a specified test blueprint.<br>▪ See Figure 2 below for this course's test blueprint.<br>▪ The full bank of questions used for this particular course is located in **Artifact F.** | **Regarding Summative Evaluation of Learning…**<br>Students complete an online "exam" after each module. Students must answer 70% of all the questions asked at the end of the module. | **Example Test Question from the Course…**<br>You have encountered the following page as you try to access the system for assigning lender roles. Which of the following choices represents the link you will click in order to continue accessing AASM?<br>(Picture of Page Inserted Here)<br>a.Loan Claim Administration<br>b. Application Authorization under Community Facilities<br>c.Electronic Data Interchange (EDI)<br>**d. Application Authorization** |

| | | | | |
|---|---|---|---|---|
| | | | | **under Single Family Guaranteed Rural Housing** |
| **NOTE: My involvement in the actual project involved creating formative and summative evaluations related to the students' actual learning. The formative evaluation questions as outlined here are located in Artifact C at the end of each module in the course. The course test blueprint is represented as Figure 1 at the end of this paper and the actual "bank of questions" for summative evaluation can be found in Artifact F.** | | | | |
| **Level** | **Criteria to be Evaluated** | **Possible Method(s) to Collect Data** | **How Data are Collected & Interpreted** | **Sample Question(s)** |
| **Behavioral Change** | ▪ Frequency of eAuthentication Login's for each user that completes the course<br>▪ Frequency of online application use with users that have completed the course<br>▪ Number of User Agreements between USDA and Lending Institutions completed after bank official completes the course<br>▪ Frequency of lending institutions with a fully functioning security administrator on site | ▪ Website and LMS usage tracking software<br>▪ Identify a random sample of lending institutions from the population who administer the loan program and conduct a systems analysis on their processing of the loan applications. Compare the systems analysis results collected at institutions who have completed the courses similar institutions who have not.<br>▪ Online questionnaires | ▪ Statistics regarding website use can be monitored using the tracking software<br>▪ The systems analysis would probably be best conducted by a third party evaluator who sets up a formal study in the spirit of capturing the information discussed in the previous column.<br>▪ A short online questionnaire (i.e. 2 questions) could be added as a "pop-up" after any user does one of the desired tasks in the online system. (For example, when a user logs in using the eAuthentication account they might be presented with a couple quick questions about where they learned to do that task.) | The following questions could be used if the online questionnaire method were implemented.<br><br>After anyone logs in to his or her eAuthentication account…<br>▪ Did you learn how to obtain your eAuthentication credentials by completing the online course available to lending institutions regarding eAuthentication?<br><br>After someone hits "submit" on any one of the online applications available at USDA LINC…<br>▪ Where did you learn to use this particular online application?<br>a. Using an online course available from USDA<br>b. By attending a teacher-led workshop offered by USDA<br>c. Other |

| | | | | |
|---|---|---|---|---|
| **Organization Change** | ▪ Number of lending institutions who administer the loan program using "paperless" methods<br>▪ Length of time from application to loan closing<br>▪ Estimate cost per hour of time spent on an application by the lending institution and USDA | ▪ Paper based or online census of lending institutions | Data could be represented graphically for analysis by key stakeholders.<br>If statistical assumptions are met as data is collected some inferential techniques could be used to review the data collected. | An example census question might be…<br><br>To what extent does your institution administer the loan program using "paperless" methods?<br>▪ 100% paperless<br>▪ 70-99% paperless<br>▪ 40-69% paperless<br>▪ 0-39% paperless |

Proposed Reporting of Summative Data

The data collected from the summative evaluation identified at each of the four levels will be reported to multiple key stakeholders. The information should first be shared with project leadership so that they can evaluate the project's success internally. Additionally, I would propose that this information be shared with the lending institutions who administer the loan program as well as the government agency granting the funds for the overall project. Sharing the information with all lending institutions and the funding agency will help hold the USDA accountable for achieving the results set forth by this large initiative with both key stakeholders. If I were to develop an outline for this report I would suggest it include the following elements:

Purpose of Project
- Intended Outcomes for Key Stakeholders Involved

Program Description
- Courses Available To Date
- Future Courses Available (and expected launch date)
- Demographic Information on Individuals Who Have Currently Completed Courses Online

Part 1 – Participant Reactions to the Online Courses
Questions to address using the data available…
- How well did the courses completed meet course-taker's expectations?
- How relevant to the learner's daily job was each course perceived?
- How well did the course length match the time users had available to complete the online courses?
- To what extent were the learning activities included in the programs considered appropriate?
- How did participants perceive the online courses' ease of use?

Part 2 – Participant Learning
Questions to address using the data available…
- What percentage of course completers were able to pass the summative exam for each course with a score of 70% or more?

- To what extent were users able to "accomplish" each of the terminal learning objectives set forth in the online curriculum?

Part 3 – Behavioral Change
Questions to address using the data available…**

- How often do users who have completed the course utilize their eAuthentication Login to conduct business with USDA?
- How often do users completing the course utilize one of the four online applications discussed in the course?
- How many bank officials completed the User Agreement forms after completing the online course?
- How many lending institutions currently have a designated Security Administrator on site?

Part 4 – Organization Change
Questions to address using the data available…

- How has the number of lending institutions conducting business using "paperless" methods changed since implementation of the online curriculum?
- How has the length of time a bank customer experiences from loan application to loan closing changed since implementation of the online curriculum?
- How have the costs associated with bank and USDA staff processing of a loan application changed since implementation of the online curriculum?

Part 5 – Conclusions

- What conclusions can be drawn from analysis of the data at each of the four levels?
- What recommendations will be addressed in future revisions of the online curriculum?

** The questions posed in this section only relate to behavioral changes expected after completion of the course I am currently developing. Other questions would need to be posed based upon the critical tasks addressed by the other courses in the online curriculum.

<u>Conclusion</u>

Thorough evaluation is an essential component of the program planning process. As mentioned by Caffarella (2002), evaluation is something to be considered throughout the development of the adult learning experience. This section of the project summary has identified an approach for evaluating the online courses under development for the USDA. The approach is based upon Kirkpatrick's Four Level Model of evaluation. The end result of this process is a report that can be shared with key stakeholders. By planning for evaluation, program planners are really thinking about building a strong and sustainable program that will last far into the future.

**Figure 2 – Test Blueprint (Summative Evaluation of Learning)**

CLIN 0001 AA-AD Course - E-Authorization and Lender Roles Examination Blueprint

**Taxonomy Level**

| **Terminal Learning Objective** | **Knowledge/ Comprehension** | **Application/ Analysis** | **Total Questions** | **Percent by TLO** |
|---|---|---|---|---|
| Identify the steps and stakeholders involved in obtaining access to the online applications available from USDA. | 4 | | 4 | 25% |
| Demonstrate how to navigate to the eAuthentication login page from the USDA LINC website. | | 1 | 1 | 6% |
| Correctly demonstrate steps in completing complete the self-registration process for an eAuthentication account. | | 2 | 2 | 13% |
| Correctly complete all sections of the user agreement form for one of the online applications available. | 3 | | 3 | 19% |
| Correctly compare and contrast the various lender roles and user Security Levels utilized in the Application Authorization System Management (AASM) software. | 3 | | 3 | 19% |
| Correctly demonstrate how to add, delete, and modify a lender user for employees using AASM, the online system provided by USDA. | | 3 | 3 | 19% |
| Total Questions | 10 | 6 | 16 | 100% |
| | 63% | 38% | 100% | |

Before creating the actual test questions the instructional designer must first create a test blueprint. The blueprint helps to organize the test and assists in delegating the “types” of questions to be asked at each level of Blooms Taxonomy. For most tests, each level of Blooms Taxonomy is shown as a separate column. Because of the short nature of this particular exam (16 questions in total) and the nature of the verbs used in the terminal learning objectives I chose to truncate the Taxonomy to two levels (excluding evaluation). The actual questions created for this blueprint can be found in Artifact F.

**Application of Adult Learning Principles**

The completed project and instructional design approach reflect aspects of key discussions in the adult learning literature base. The discussions represented include: use of behaviorist learning theory; use of assumptions from Knowles' Andragogy model; and application of Grow's (1991) model for self-directed learning. The artifacts produced throughout the project reflect specific aspects of each of these discussions. This section of the paper is provided to draw specific links between the principles derived from the ongoing discussions in the literature to the actual products created in this project.

With regard to learning theory; the notion of training individuals to use particular systems and tools is rooted in behaviorist assumptions regarding learning. Behaviorist approaches to learning focus on creating highly structured learning environments where learners are focused on rehearsing and mastering certain specific tasks (Merriam, Caffarella, & Baumgartner, 2007). The entire E-Learning experience outlined flows from this perspective. Perhaps the behaviorist notions are most evident in the fact that the initial planning document begins with identification of the "critical tasks" or target behaviors the course is supposed to teach the students. From there the entire instructional design process is centered on practice and repetition of these specific tasks. In addition to a behaviorist learning tradition the courseware produced reflects Knowles' assumptions for Adragogy.

As outlined by Merriam, Caffarella, & Baumgatner (2007) there are six assumptions Knowles outlined for his quasi-theory of Adult Learning. These six assumptions seem evident in the course documents outlined during the project. For example, the course storyboards demonstrate an emphasis on providing lenders with information that has immediate application in their everyday work. In fact, each lesson ends with a summary of "to-do" items to encourage application of the learning immediately. This is supported by Knowles' assumption that adults move from a future application of knowledge to immediate application. As well, Knowles posits that the readiness of an adult to learn is related to his or her role at work. Another key aspect of the courseware supported by Knowles' assumptions regards the voluntary nature of the courseware. The lenders are not required to complete these courses. They are provided in addition to print materials to enhance understanding. This approach to course delivery is supported by three of Knowles' assumptions. First, adult learners are more self-directing in their learning. Second, adults who know why they need to learn something are more prone to seek out a learning experience. In addition to Knowles' model of Adragogy the Staged Self-Direction Model proposed by Grow (1991) is a theme that runs throughout the end products presented.

Grow (1991) outlines four possible roles for the teacher and four responses the learner is likely to give. The idea is to move toward teacher as a delegator and the learner as self-directed discoverer. While there is not a "teacher" present during each of the online lessons the concept is still the same. The "teacher" in this case *is* the online program. The lessons and learning activities are designed and sequenced to encourage the learner to move toward the role of self-directed learner throughout the rest of the courses. The course design assumes the learner will start out as a "dependent learner." Thus the beginning provides more lecture and "showing." As the learner progresses he or she is involved more and more in the content through the unique learning activities, animation sequences, and learning "check-points." The idea is that the learner moves from being dependent to being more self-directed in his or her learning. Following this course, students will have an array of other courses available on similar topics. Having self-directed learners who are interested in completing the other courses is essential to the program's success.

In conclusion, the products created during this project reflect several principles derived from ongoing discussions in the adult learning literature. Making a course that reflects such principles helps to ensure that the course will accomplish its intended purpose with an adult audience. As program planners and instructional designers we must be cognizant of the needs this particular audience brings to the “classroom” each time we begin the planning process.

## References

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**APPENDIX A**

## Individual Project Proposal

### Purpose Statement and Rationale

The United States Department of Agriculture (USDA) administers multiple programs intended to improve the general welfare of all citizens. One particular program administered by USDA and established with federal funding is the rural housing guaranteed loan program. These loans are guaranteed by the government and are intended to assist low- and very low-income households obtain homeownership in rural areas of the United States. Applicants to this program may obtain 100 percent financing to purchase an existing home, purchase a site for constructing a home, or purchase a newly constructed home in a particular rural area. The loans are commonly referred to as Section 502 Direct Loans and are administered by USDA Rural Development staff.

USDA Rural Development staff work directly with lending institutions to serve borrowers who qualify for the guaranteed loan program. Lenders must meet certain criteria and obtain a special contract with the USDA Rural Development staff to administer the loans. Once approved, USDA Rural Development dedicates a considerable amount of resources toward training the lending institution's staff. Recently, USDA Rural Development obtained funding approval to develop online courseware to enhance and eventually replace the cost prohibitive teacher led instruction they currently implement with approved lending institutions. The online courseware will also facilitate training during a planned nationwide launch for several online "applications" that are available to assist local lending institution staff in administering the rural development guaranteed loan programs.

To serve borrowers effectively, the lending staff must master three things: they must thoroughly understand the loan program and the regulations that govern it; they must know what procedures and documentation are required; and they must understand the systems and tools that enable them to submit materials and process transactions. The third objective outlined here is the essence of the project I am proposing to complete in partial fulfillment of the requirements for YDAE/EDCI 565. In the winter of 2006, I was independently subcontracted by a firm in Indianapolis, to develop courses intended to facilitate lenders' understanding of the systems and tools that enable them to administer the USDA single family housing guaranteed loan program electronically. In dividing up the project requirements I was assigned to develop an E-course that introduces the local lender to the online applications available from USDA for administering the program and assists lenders in establishing the necessary credentials to access the applications.

My rationale for choosing to submit this for the individual project in YDAE/EDCI 565 is two-fold. First, I believe the e-course I am assigned to develop will afford a number of opportunities to apply the principles discussed in a semester long study of Adult Learning Principles. Application of these principles will improve the product I am able to deliver to the client. Second, I have recently been contracted to work on other E-Learning projects and I believe working on this project in direct relationships with YDAE/EDCI 565 is a tremendous opportunity to refine and improve my practice as an instructional designer for these and future E-Learning efforts.

### Final Product

There are several products that will be produced for review by USDA Rural Development staff as I create this course. I propose submitting these products as a portfolio for the final project product. The following final-version products created for this E-Learning course will be included in the portfolio:

- Critical Task and Learning Objective Matrix – this matrix will outline, based upon a task analysis, the critical tasks associated with obtaining access to the online applications from USDA.
- Instructional Media Plan and Detailed Content Outline – this matrix is an extension of the learning objectives and provides a detailed outline of the content for the course as well as a general outline of the instructional sequence for the online course.
- Course Examination Package – this product outlines the specific examination questions to administer as formative and summative evaluation of learning in the course.
- Course Storyboards – this product translates all the previous documents mentioned into a rough outline that visually shows what the final E-Course will look like. This product, once revised, will provide the computer programmers clear direction for developing the final course for delivery to USDA.
- Online Link to Working Courseware – this product will be a working version of the online course and is created by the E-Learning partner using the previously described products.

Finally, as evidence of integration of the course content into the project; I propose writing a final project report as outlined in the class syllabus.

**Project Framework**

The proposed project and the approach I outline in the timeline are supported by three strong literatures including: behaviorist learning theory; Knowles' assumptions about adult learners; and instructional systems design. For example, with regard to learning theory; the notion of training individuals to use particular systems and tools is rooted in behaviorist assumptions regarding learning. Behaviorist approaches to learning focus on creating highly structured learning environments where learners are focused on rehearsing and mastering certain specific tasks (Merriam, Caffarella, & Baumgartner, 2007). The entire E-Learning experience proposed flows from this perspective by providing learners a highly structured learning environment where they will rehearse specific tasks that are required of them in order to use the online applications available from USDA. In addition to a behaviorist learning tradition this proposed courseware is rooted in Knowles' assumptions for Adragogy.

As outlined by Merriam, Caffarella, & Baumgartner (2007) there are six assumptions Knowles outlined for his quasi-theory of Adult Learning. These six assumptions seem closely associated with the way that the E-Learning courses will be offered. For example, each of the courses will provide lenders with information that has immediate application in their everyday work. This is supported by Knowles' assumption that adults move from a future application of knowledge to immediate application. As well, Knowles posits that the readiness of an adult to learn is related to his or her role at work. Another key aspect of the courseware supported by Knowles' assumptions regards the voluntary nature of the courseware. The lenders are not required to complete these courses. They are provided in addition to print materials to enhance understanding. This approach to course delivery is supported by three of Knowles' assumptions. First, adult learners are more self-directing in their learning. Second, adults who know why they need to learn something are more prone to seek out a learning experience. Finally, the most potent motivation for learning is internal rather than external. Thus, the courseware delivery is well supported by the literature on the nature of adult learners.

From an instructional design and project management perspective the proposed products produced for this project and the process for gathering feedback from the client are based upon the widely recognized ADDIE model for instructional design. The ADDIE model stands for Analysis, Development, Design, Implementation and Evaluation (Molenda, 2003). The ADDIE model is based upon the notion of Instructional Systems Development as discussed by Graffinger (1988) and Andrews and Goodson (1980). ADDIE provides an iterative and systematic process that instructional designers use in developing courses. Based in behaviorist views of learning the process begins with the analysis of a particular job or role in an organization. In this case, what critical tasks must lenders complete to be able to gain access the online applications available from USDA? A task list is the major product of this phase in the instructional design process. The design phase involves developing and sequencing learning objectives (both terminal and enabling) in an effort to break down the critical tasks into a "teachable" learning sequence. The detailed content outline, instructional media plan, examination package and storyboards are all products from the development phase of this model. As each product is developed the client reviews and provides feedback which sets into motion the iterative nature of the model (Molenda, 2003). My role in the project ends in the middle of the development process as the storyboards and previous products are handed off to computer programmers who complete making the concept operational. Finally, the course is implemented to actual lenders and ongoing evaluation efforts put in place to determine the effectiveness of the courseware. Thus the ADDIE model provides support for the proposed products outlined and iterative approach to developing this course.

In conclusion, the project, as proposed, is supported by three existing literatures. The essence of the project – workplace training – is supported by behaviorist notions of learning. Additionally, Knowles' assumptions about adult learners support the proposed delivery of the courses through an E-Learning model. Lastly, the products proposed for development are supported by the ongoing use of the ADDIE model as outlined in the instructional design literature.

**Procedures and Timeline**

The following is a timeline of events for the development of the course titled: **Accessing Online Applications for Single Family Housing Guaranteed Loan Programs.**

| Dates | Task |
|---|---|
| 11/2/06 | Start of Work Conference with USDA Staff and Project Consultants |
| 11/2/06 - 11/15/06 | Development of Critical Task Matrix and Identification of Learning Objectives |
| 11/16/06 – 11/20/06 | Client Review and Comment in online Product Presentation System (PPS) – this system allows clients and consultants to see a document and post comments regarding the document. |
| 11/27/06 – 12/1/06 | Revisions to Critical Tasks and Learning Objectives |
| 12/1/06 | Final Version of Critical Tasks and Learning Objectives for Course Posted for Clients in PPS |

| | |
|---|---|
| 12/2/06 – 12/8/06 | Development of Detailed Content Outline |
| 12/9/06 – 12/15/06 | Development of Instructional Media Plan |
| 12/16/06 – 12/21/06 | Client Review and Comment on the Instructional Media Plan and Course Content in online Product Presentation System |
| 12/27/06 – 1/5/07 | Revisions to Instructional Media Plan and Detailed Content Outline |
| 12/16/06 – 12/21/06 | Development of Examination Package for Course |
| 1/5/07 – 1/10/07 | Client Review and Comment on the Examination Packet in online Product Presentation System |
| 1/10/07 – 1/12/07 | Revisions to Examination Package for Course |
| 1/12/07 – 1/31/07 | Development of Course Storyboards and Assembling Media Assets (i.e. pictures, screen captures from the online applications, etc.) |
| 2/1/07 – 2/12/07 | Client Review and Comment on the Course Storyboards in online Product Presentation System |
| 2/1/07 – 2/12/07 | EDCI 565 Project Proposal Development |
| 2/12/07 – 2/16/07 | Revisions to Storyboards for Course |
| 2/17/07 – 2/28/07 | Programming and Testing by E-Learning Partner – making the storyboards into a functional online program |
| 2/12/07 – 2/26/07 | EDCI 565 Project Draft for Part 1 – Content, Context, and Audience |
| 3/1/07 – 3/15/07 | Client review of Functional Online Course |
| 2/26/07 – 3/19/07 | EDCI 565 Project Draft for Part 2 – Needs and Objectives |
| 3/15/07 – 3/23/07 | Revisions to Functional Online Course by E-Learning Partner |
| 3/19/07 – 3/26/07 | EDCI 565 Project Draft for Part 3 – Process, Design, and Methods |
| 3/26/07 – 3/30/07 | Final testing and Delivery of Final Course to Client through USDA's Learning Management System called AgLearn |
| 3/26/07 – 4/9/07 | EDCI 565 Project Draft for Part 4 – Administration |
| 4/9/07 – 4/16/07 | EDCI 565 Project Draft for Part 5 – Evaluation |
| 4/16/07 – 4/30/07 | EDCI 565 Project Abstract Development, Final Report Revisions & Development of Oral Report |

## Criteria

The following is a list of criterion which should be used to evaluate the quality of the completed project products.

- **Were each of the products delivered for client review on time?** In a large project with multiple steps and multiple client reviewers it is essential that the products promised are available for review at the specified times in the timeline.
- **Were all "open" comments the client logged about each product "closed" by either "fixing" the issue or providing adequate rationale to keep the product the way it is?** In

order to comply with the iterative nature of this project it is essential that the client's feedback is responded to and appropriate action is taken with the products.

- **Did the end product provide adequate training related to each of the critical tasks identified for the lenders?** The ultimate goal is behavioral change related to the tasks outlined and agreed upon in the very first product produced. The training provided should directly address these tasks.
- **How many learners complete the course modules?** Since it is voluntary the number of learners completing the courses offered may be an indication of the value they find in the online learning opportunities.
- **How many learners answer 70% or more of the examination questions asked in the course correctly?** The USDA AgLearn standard is a score of 70% or better on any examination provided.
- **Were adult education principles applied throughout the development of this course?** The end users for this course are all adult learners. It is paramount that the course reflects principles associated with adult learners.
- **Was the report/presentation created to explain this project clear?** If a colleague were interested in replicating this process to develop a similar course then the report/presentation created to summarize the experience should clearly communicate the necessary steps.

## References

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Merriam, S. B., Caffarella, R.S., & Baumgartner, L. M., (2007). *Learning in adulthood: a comprehensive guide.* (3rd ed.). San Francisco: Jossey-Bass.

Molenda, M. (2003). The ADDIE model. In A. Kovalchick & K. Dawson (Eds.), *Educational Technology: An Encyclopedia.* 201-215. Santa Barbara, CA: ABC- CLIO.