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Subject: Project Excel Training Design Concept

We are pleased that QED has asked us to further explore the development of the Project: Excel instructional product that we described during our System Specification presentation last month. Based on your feedback from that meeting, we are submitting the Design Concept that follows for your review and comment.

Overview

To streamline the work of Project Managers at ABC Company, Project: Excel will be a computer Based Training (CBT) product consisting of about eight hours of instruction that builds on learners' existing knowledge of Microsoft Excel so that it can be used as a simple, yet robust project management tool. Project managers at ABC Company have been seeking a way to track a variety of projects with timelines, milestones, budgets and master project plans.

While a number of the learners have used Microsoft Project for this purpose, most feel that it is too cumbersome with its steep learning curve and limited ability to share information with those who do not have the program. From a corporate perspective, MS Project is expensive to purchase as well as implement. The proposed instructional product will show users how they can create sophisticated project plans using software that is installed on virtually all of the corporation's computers and that most of the managers understand on at least a basic level. Table 1 details constraints and enablers for both the users and delivery system.

ABC Corporation has more than 3,000 project managers with operations in 23 states. The company has an extensive Intranet-based Learning Management System (LMS) with which all employees are familiar. Although employees only have access to the LMS while at work, this has not proved to be a problem for other training programs. The Project Managers themselves are a highly motivated group, 85% of whom are college graduates and all are computer literate, although their familiarity with Excel varies. These learners are incited to increase productivity and receptive to training that will simplify their work. Table 1 provides an overview of the constraints and enablers for both the learners and the delivery system.

The instructional goals are to enable learners to:

- Plan and manage projects using Excel
- Create project calendars and budgets
- Understand master project plans and their functionality

Because ABC Company has organizational needs similar to a many other companies, we also feel that once developed, this instructional product could have a much broader appeal that makes it a good candidate for development.

TABLE 1. Project: Excel Constraints and Enablers

	Constraints	Enablers
Learners	<p>Spending time on training instead of tasks that pertain to immediate needs within the workplace.</p> <p>Indifference to using Excel for project planning instead of MS Project which is perceived as the “Cadillac” of project planning.</p> <p>Background knowledge of Excel could interfere with the pacing of the course</p> <p>Learners can only log on at work to access courses</p> <p>Problems may arise due to varying degrees of computer proficiency</p>	<p>High literacy rate and ability to learn based on a high percentage of college graduates (85% hold a degree)</p> <p>Young average age and college degree translates into computer literacy</p> <p>Motivated to use their time more wisely so that they can move ahead in the company, receive bonuses, and have time for fun outside of work</p>
Delivery System	<p>General Web Development</p> <p>Could be expensive to develop depending on how elaborate the lesson</p> <p>Requires user to have internet access</p> <p>Intranet Implementation for Specific Client</p> <p>Requires access to corporate Intranet</p> <p>Cannot use at home or while traveling</p> <p>Future Internet Development for Broader Audience</p> <p>Requires password/security in order to charge for training product</p> <p>May require cost for web space or vendor hosting</p>	<p>General Web Development</p> <p>Can incorporate interactivity and feedback</p> <p>Can easily include sample files, templates & support documents</p> <p>Intranet Implementation for Specific Client</p> <p>Available throughout the organization</p> <p>Compatible with existing training infrastructure & tracking capabilities</p> <p>Easy to include company/department specific job aids & samples</p> <p>Future Internet Development for Broader Audience</p> <p>Available anywhere any time</p>

Project: Excel Objectives

We have identified four primary content areas for this Project: Excel instruction module, each of which has a corresponding instructional objective that will be addressed by one lesson. This Design Concept addresses Lesson 2 below.

1. **Project Tracking Lesson:** Given an already populated project plan, learners will demonstrate their understanding of the Track Changes Tool by tracking the following updates to the project plan: current date, their name, and changing all open tasks to complete.
2. **Project Calendar, Timeline and Milestone Lesson:** Given a project task list & utilizing the guidelines in the instructional product, the learner will be able to create a project calendar with due dates & milestones.
3. **Master Project Planning Lesson:** Given 2 sub-project task lists & utilizing the guidelines for developing a master project plan, the learner will be able to construct one master project plan out of the two sub-project task lists.
4. **Project-Related Budgeting Lesson:** Given a project scenario and a lump sum of money, the learner will be able to create a budget to accomplish the necessary tasks.

Outline

1. **Overview:** The first lesson worked with an already completed plan, showing how to make changes and track progress. Now that learners have gotten a feel for how the project planning documents work, they will learn to develop their own documents from scratch. Figure 1 shows a flow chart of the lesson.

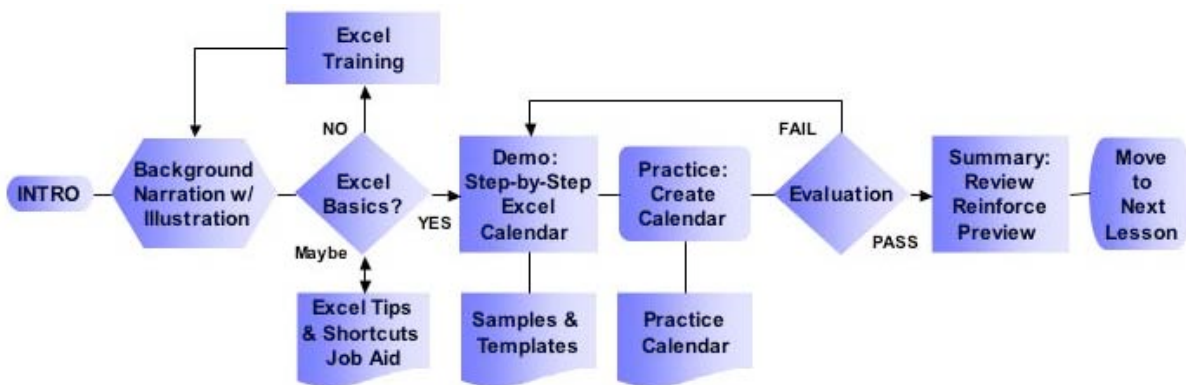


Figure 1. Calendar/Timeline Lesson Flow Chart

2. Introduction

- a. **Importance:** As project managers, learners know the importance of establishing due dates and meeting deadlines to accomplish milestones. Without a useful calendar, it would be nearly impossible to complete projects in a timely manner. Complex project plans require more than a paper calendar, yet most agree that using dedicated

project management tools like MS Project, can be overkill. Harnessing the power of Excel can to create and manage project calendars can simplify that task and contribute to increased productivity as well as improvements in on-time performance.

- b. **Content:** This lesson builds on a basic understanding of Excel by discussion, demonstration and practice of specific features of the program that relate to structuring a project-specific calendar
- c. **Objective:** Upon completion of this lesson, the learner will be able to take an existing list of typical project-related tasks — similar to those they manage in their jobs — and develop a calendar sheet in Excel that includes start and end dates as well as key milestones for each task on the list.

Criteria: The completed calendar sheet will include all of the tasks on the provided list as well as start and end dates for each task. Due dates for dependent tasks must reflect those dependencies. Timelines for at least three of the tasks must include intermediate milestone dates with descriptive text.

3. Knowledge-Needed

- a. **Concept Review:** Basic capabilities of spreadsheets and how that structure can be an ideal tool for more than just performing calculations.
- b. **Fact Displays:** Printable job aid containing Excel shortcuts and commands related to calendar and time functions.
- c. **Process Displays:** A flow chart showing an overview of typical project management functions and where the calendar/timeline component fits in.

4. Lesson Tasks

- a. **Procedural Task Display:** Presentation of 2-3 project calendars typical of ABC Company's activities with call-outs showing key components of the completed document.
- b. **Demonstration:** Step-by-step guided simulation of how to create each of the required components.
- c. **Practice:** Opportunity for learners to create their own spreadsheets using tasks that they select to practice all of the components covered.

5. Lesson Summary:

- a. **Review** all of the steps necessary to create a complete project management timeline calendar.

- b. **Reinforce** items from the first lesson regarding making updates and tracking changes to a calendar once it has been created.
- c. **Preview** the idea to be presented in the next lesson that once a calendar is created, it can either represent a complete, standalone project or it can be a sub-project that can then be "rolled into" a larger master project that incorporates several related projects.

Utilization Scenario

The scenario presented below highlights how users and potential users might react to this training opportunity.

A group of Project Managers at ABC Company sits around a conference table waiting for a scheduled meeting to begin. As they chat casually, one of the group members complained about the difficulty of coordinating her tasks with other employees involved with her projects. "Aside from many of the Project Managers, no one else here uses Microsoft Project. Whenever I want to provide updates on project status, I have to make a PDF of the files. Then when our colleagues have changes or updates, I'm the one who has to do the admin on the master file since no one else can access it. Of course the other managers don't want to buy Project for everyone and even if they did, it was enough of a pain for us to learn that program."

She was surprised when another member of the group joined in to explain, "Yeah, I always had the same problems, but I've started using Excel to manage all of my projects. I noticed a training module on the LMS about using Excel to manage projects and once I checked it out, I was sold. Since all of the company's computers come standard with Excel and most people know how to use at least the basic functions, it was a no-brainer to make the switch. The LMS module was about 8 hours total, but I was able to get started after finishing the first couple of lessons. Of course it didn't hurt that we get our 'brownie points' for the training hours."

Her colleague continued, "It was definitely a worthwhile module. I always knew that Excel had more powerful capabilities than just 'number crunching' but I never really knew how to tap into them. One of the cool things about this module is that it includes templates and samples just like some of the typical projects we manage around here. It's even got a 'cheat sheet' with shortcuts that I've taped inside my notebook."

Other members of the group joined in on the discussion and universally agreed that MS Project had its place, but that it could actually be more hindrance than help when dealing with groups that did not have access to the program. They asked their co-worker about the new training module. "Was it as dull as that safety training?" one of them queried.

"No, it wasn't bad at all. Since it gave me some good ideas about streamlining the tedious parts of my job, I almost enjoyed it," he said slyly. "It started with a little review of how we manage our projects and then there was a section with some multiple choice questions that made sure we knew enough of the basics of Excel to

get going. I didn't have to do it, but I think there was a link to that Excel Basics module for those who bombed on that part. Since I'm pretty comfortable with Excel, I spent about an hour a day right after lunch and went through the thing in a little over a week. The computer had some audio narration of the overview stuff and then sample screens with animation showing how to do the formatting. The downloadable templates were especially helpful as they were pretty easy to adapt to what I was working on. For the practice exercises, I actually filled in a template with the tasks from a project that I was about to start, so I was actually getting some real work done while I was doing the training."

The others wanted to know how soon he was able to start using what he had learned. "Since I actually started plugging in tasks from my next project for the evaluation assignment, I was able to save that file and started using it almost immediately. The department that I was working with was really receptive, especially when I showed them how they could make notes and track changes on their copy of the file and how the project could be broken into sub-projects and still be rolled back into the master file. I even got some of them to do the training."

Justification

The design concept for the Project: Excel instruction is based on several commonly accepted theories of learning and instruction.

The demonstration component of the lesson relies on Clark's description of guided simulation that recommends a step-by-step approach to procedural learning that provides "relevant information interspersed with frequent practice exercises." (Clark, 1999 p. 60) Using this approach reinforces the application of knowledge rather than simply remembering steps.

An emphasis on reference and practice that uses examples typical of their actual work is derived from Sticht's Functional Context Theory as well as Lave's Situated Learning Theory (Theory-into-Practice Database, 2003) that stress workplace relevance and social context when teaching technical content to adults. In particular, the need for relevance of training to workplace activities has been supported in programs sponsored by the US Departments of Defense, Labor and Education. The nature of the course content lends itself to support from the Situated Learning Theory because its goal is to instruct learners how to make better use of a tool that is more broadly available and will help them communicate more successfully with their peers.

Finally, Knowles Theory of Andragogy applies to this course in particular because it is not a "required" course. It offers training that will help the learners to simplify their jobs, increase their productivity, improve communications with peers, enhance their value to ABC Company and advance their career paths. Because Androgogy supposes that adult learners want to know why they are learning a subject, need experiential learning, and "learn best when the topic is of immediate value;" these aspects have been emphasized in the lesson design.

Formative Evaluation Questions

1. Are similarities between examples and the learners’ real work obvious to the learners?
2. Does the lesson address possible variations in how learners’ real-world projects might differ from “typical” projects?
3. Does this format involve sufficient feedback to ensure that the learners understand enough information to make their own calendars?

References

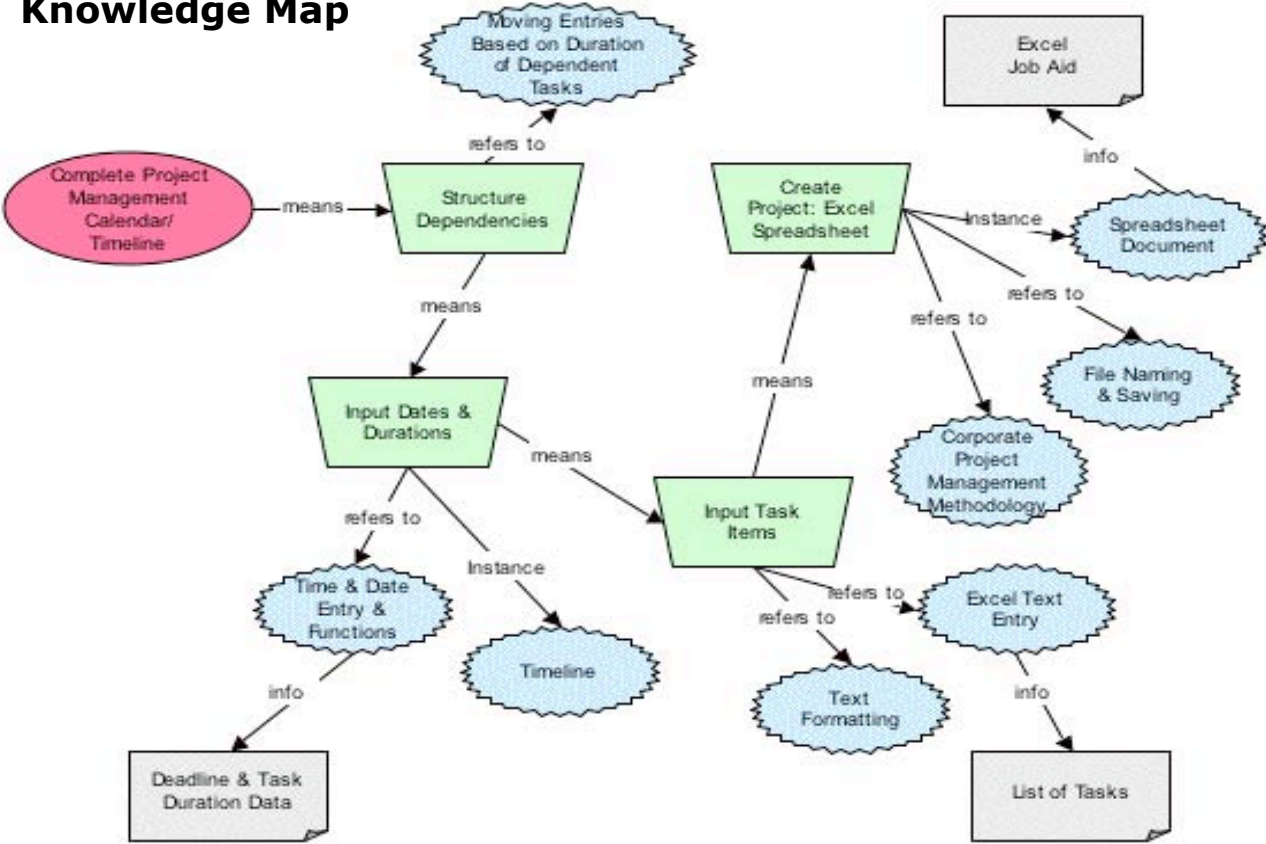
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Appendix A: Cognitive Task Analysis Project: Excel Knowledge Map



Appendix B: Component Display Theory Outline

CDT Descriptor	Instructional Component
EGp	Overview — About Project Management
mo	Introduction — Importance of easy-to-use, accurate calendars to successful project management
EG	Content — About using Excel for this purpose
out	Objective — Complete a project calendar/timeline in Excel
EGp	Excel concept review
Ieg	Excel concept quiz
EF	Excel job aid
Eeg	Step-by-step demonstration
Eeg	Samples and templates
Ieg	Learner creates calendar/timeline
IG	Summary - Review and reinforce lessons
ntk	Preview next lesson