

Comprehensive Analysis Recommendation for Project Team:
Professional Development Program for K-6 Teachers in Rural Areas

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Comprehensive Analysis Recommendation for Project Team:
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Introduction

The Central Curriculum office of the State of New South Wales Department of Education is committed to the professional development of teachers. A performance support tool, *321 Countdown*, is a new CD-ROM which will be used by teachers for instruction and assessment of K-6 math students. The Central Curriculum office is assigned to craft a professional development program to meet the needs of rural teachers. What are the essential components for conducting an analysis in support of an effective professional development program intended for teachers located in rural areas? This report focuses on strategies and recommendations for conducting a front-end analysis to systematically distinguish the components necessary so effective learning can be achieved. As stated by Hodell (2006), “*Analysis* is the data-gathering element of instructional design” (p.13). Moreover, analysis involves determining the targeted learners and contextual environment where the learning takes place (Virginia Tech).

Overview of Professional Development Problem

The key members of the project team include Terri Lee, Don Garthon, Susan Harper and Chris Green. Terri has informed Don of the problem and challenges involved. The problem, as described by Terri, is to develop a program which aids rural teachers learn the use of a newly produced CD-ROM performance based support tool. The known challenges include remote locations, limited opportunities to attend professional development courses, lack of relief teachers, unstable Internet connections, and a school network with limited bandwidth. Don has employed the partnership of Susan to assist with the project. Additionally, Terri is working with Chris regarding technical issues and participant interest (Ertmer & Quinn, 2007).

When formulating strategies to develop resolutions for a professional development problem, it is important to analyze the following components: needs, goals and objectives, learner, performance and learning context, content and task, delivery of training, potential barriers regarding challenges and constraints, gathering, data, resources, budget, timeline, and specific instructional issues. The team can also formulate tangible actions which supply a working foundation for analyzing the instructional design process. In order to accomplish this, the team should consider utilizing the metadata concept which provides a solid starting point. As stated by Reiser and Dempsey (2007), “Information about learning objectives, intended audience, level of difficulty, and other instructionally oriented information” and critical technical information pertaining to “platform requirements, software requirements, and structural information” may be gleaned (p. 302). Equally important is distinguishing instructional and noninstructional issues. This guides the process of addressing the particular issues relating to instructional design which is to be analyzed (Hodell, 2006). Once the problem(s) and challenge(s) have been identified, the team should proceed with an analysis of each component.

Analysis

Needs

According to the National Employee Development Center (NEDC), a need is “a gap separating what people know, do or feel from what they should know, do or feel to perform competently” (ISD). The information regarding needs, CD-ROM, support materials, and a list of proposed sites for piloting the program were provided to the team by Terri. Needs assessment specifically focuses on the final outcome of the training process (Witkin & Altschuld, 1955). The team should review the information and determine how to fill the gap with training. Therefore, a careful thought process from several perspectives is required for a successful instructional design.

Goals and Objectives

How will the team produce the desired learning and instructional outcome?

Clarifying the goal should reflect the result of learning and instruction expectations. It should also equip teachers better for instructing students and managing their progress. According to Reiser and Dempsey (2007), the learning objective is a universal element included in instructional design systems, is a central focus, and is highly influential on all other components in the process. To meet the goals and objectives, the project team needs to discern, define, and determine the necessary steps for the best possible analysis and outcome.

Learner Analysis

There are many questions to ask when determining who the intended learner is and what their needs are in order to create individual learning experiences which transfer to on the job behavior. Here is a list to consider: diversity, characteristics of the target population, general entry behavior, previous experience and prior knowledge of the topic, perceptions and attitude of the learner, general learning preferences, and technology skills (Virginia Tech). Reiser & Dempsey (2007) describe a “learner centered” focus and the “empirical, iterative, and self-correcting” nature of instructional design (pp. 13-14). It is for these reasons that a learner analysis is necessary.

Context Analysis

There are two essential areas of context analysis to consider, performance and learning. The team should collect information in both areas because it assists in filling the gap between where the learners are and where they should be at the end of the training program.

Performance Context:

Analysis of the performance context pertains to managerial support, physical environment, social aspects, and its relevance of skills to the workplace (Virginia Tech).

Learning Context:

Analysis of the learning context pertains to the learning environment. Things to consider include: amount of learning sites, nature of learning sites, site compatibility with instructional requirements and learner needs, and feasibility (Virginia Tech). Reiser and Dempsey (2007) refer to this as “context evaluation” (p.96).

Content and Task Analysis

As mentioned earlier, the CD-ROM and supporting materials have already been produced and warrants an analysis of the content and task involved. In other words, analyzing the information which will be included (Tennyson, 1999). Therefore the team must review the information to formulate an effective training.

Delivery of Training

What would be the most effective way to deliver training? This is a component of the analysis process that must be addressed. The team should consider potential barriers when designing the instruction; particularly the issues with Internet connection, low bandwidth, and rural locations. Since the CD-ROM and support materials have already been produced, the team should consider compatibility and capabilities of each computer and network connections which will help determine the learning system and what to integrate. Compiling the information will determine whether using printed or web-based materials in a synchronous or asynchronous environment is applicable. In addition, effective communication is critical to understand possible resistance and to facilitate implementation (Reiser& Dempsey, 2007, pp. 106-116).

Gather Data

As stated by Hodell (2006), data gathering is another essential component of the analysis process (p.14). Each part of analysis requires information. Since information is required, tools for collecting and compiling the data must be considered. We know some of

the constraints at this point regarding Internet connection, limited bandwidth, and difficulty reaching rural areas. Terri has requested to meet with Don in two weeks which also places a time constraint. Due to these challenges, I recommend a survey which can be conducted online and via telephone interview.

Resources

As stated by Reiser and Dempsey (2007), “resources are those assets essential to engaging in a training project” (p. 124). Resources include personnel, time, and money. Defining resources assist with planning an effective design. Analyzing the functions of these resources provide a clear picture of how resources enhance or challenge the design process.

Budget and Timeline

Analyzing a budget and timeline involves estimating cost, development hours, project constraints, personnel availability, and work schedules. Hodell (2006) lists drafting a budget and timeline as one of the nine elements of analysis (p. 14). Once resources are determined, a budget and timeline can be mapped out.

Summary

The last two elements of analysis as presented by Hodell (2006) include “obtain sign-off from manager or client, if appropriate” and “evaluate all analysis elements” (Hodell, p.14). Verifying client approval is necessary and with all instructional design, evaluation is an ongoing process at every phase. Since the CD-ROM and support materials are task oriented and reflect real-world scenarios, I suggest the team consider M. David Merrill’s task centered instructional strategy concept for ideas (Merrill, 2007). Finally, as the project team focuses on the learner, contextual environment, content and task, instructional delivery, gathered data, resources, budget, timeline, and effective communication, a successful design of instruction will be achieved. Thus, goals and objectives will be met to satisfy the learner, instructor, and client.

Analysis Tools

e-Prep Express

See [reference](#) and [link](#). This front-end analysis tool assists the team by asking specific questions to define needs and organizes the information in a systematic pattern. It is a good starting point and is helpful when time constraints are a challenge (Seward, 2008).

Learner and Context Analysis Worksheet

See [Appendix](#). This sample worksheet may serve several data gathering purposes. The team may use this as a basis for generating more detailed questions in a survey, conduct telephone and online interviews with the survey, and compiling data used for analyzing learner and context information (Justice, 2003). If available, Adobe Professional software will distribute and track the forms allowing easy management and compilation of data. The teachers with Internet access will need Adobe Reader installed on their computers. Otherwise, the form can be completed by the team while performing telephone interviews.

Training Costs Worksheet

See [reference](#) and [link](#). This worksheet is provided by Big Dog and Little Dog's website. It serves as a template for estimating costs and time during the analysis phase of instructional design. The worksheet tool is located toward the bottom of the page.

Suggested Reading

The following is a list of suggested reading which may assist in your analysis. *See references page for details:*

- [Reasons](#) Why Training & Development Fails... And What You Can Do About It (Phillips & Phillips, 2002).
- The [Key To Successful](#) E-learning: Front-End Analysis (Sales, 2009).
- [Multimedia CD-ROM](#)-Based Training Solutions (Computer Industry Report, 2008).
- [Training At A Distance](#) - Technology Options (2001)

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Witkin, B. R., & Altschuld, J. W. (1995). Chapter 1: A three-phase model of needs assessment. In *Planning and conducting needs assessments*. Retrieved from

https://laulima.hawaii.edu/access/content/group/MAN.1245.201113/readings/Witkin_Ch1.pdf.

Appendix

Learner and Context Analysis Worksheet

Analysis	Basis of Information	Characteristics	Implication(s) for Instruction
<i>Learner</i>			
Target Population			
Entry Behavior			
Perceptions/Attitudes			
Academic Motivation			
Educational Levels			
Ability Levels			
Learning Preference(s)			
<i>Context: Performance</i>			
Managerial Support			
Physical Aspects			
Social Aspects			
Relevance			
<i>Context: Learning</i>			
Number of Sites			
Nature of Sites			
Requirements Compatibility			
Adaptability			
Design Constraints			
Delivery Constraints			

**Sample Analysis Worksheet is a modified version of Learner/Context Analysis as referenced below.

Justice, L. K. (2003). Learner/Context Analysis, from http://www.personal.kent.edu/~lkjusti1/objectivelyspeaking/learner_context_analysis.htm