15 December 2009

Memorandum

TO: Development team for K-6 Teachers
From: John Coney, Instructional Designer

Subject: Recommendation for a comprehensive analysis

Enclosed for your review is the final report for a comprehensive analysis. This report will put you and your team back on the fast track to providing important professional development opportunities for K-6 grade teachers in your community. Thank you for this opportunity, I applaud the work you have done and I think we will both agree that after you have reviewed this report I have outlined will put your work to a good use as well most importantly providing for our K-6 teachers in rural communities and the students they teach. Please contact me if you have any questions.
Recommendation for a Comprehensive Analysis Plan for K-6 Teachers in Rural Locations

John Coney
OTEC - 2009
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# Index

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUMMARY OF WHAT WE KNOW</td>
<td>1</td>
</tr>
<tr>
<td>MOVING FORWARD WITH RECOMMENDATIONS</td>
<td>2</td>
</tr>
<tr>
<td>ASSESSMENT OF CURRENT ANALYSIS</td>
<td>2</td>
</tr>
<tr>
<td>LEARNER OBSERVATIONS</td>
<td>4</td>
</tr>
<tr>
<td>GOALS AND OBJECTIVES</td>
<td>4</td>
</tr>
<tr>
<td>CONCLUSION</td>
<td>5</td>
</tr>
<tr>
<td>ADDITIONAL TOOLS</td>
<td>8</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>9</td>
</tr>
</tbody>
</table>
Introduction

Instructional design (ID), while not a new concept (Reiser 2001) has made vast strides in education in the last few years. We start by reminding ourselves of the definition of ID by Reiser, (Trends and Issues 2007, p. 6), in that ID is to facilitate learning using appropriate technologies and resources. In this case a majority of tools have been created to help teachers develop and fine tune specific modules in the K-6 grade class rooms. Specifically, “321 Countdown” is the name of the CD-ROM based performance support tool for teaching and assessing Math skills in the K-6 grade levels for teachers. While much of this product has been developed, we need to remind our self of the importance of instructional design and the ADDIE model and more specifically the first part of the “analysis” portion in creating a final product. The purpose of this report is to provide tools and recommendations for an analysis stage to allow the team to move forward with the rest of an DDIE (design, develop, implement and evaluate) type model. The suggestions in this report will allow the team to move forward in creating a strong affective product in “321 Countdown”, and overall supporting important educational math skills in rural communities across the state for teachers and more so for the children in K-6 grades.

Summary of what we know

We start by reviewing what we know of the current status of “321 Countdown”. This product is to be used by teachers in remote or rural communities to better utilize newer curriculum materials and allow teachers to better target student specific math needs or short comings. Also, as an added benefit this will allow rural teachers to gain new training as well as professional development opportunities while introducing new up-to-date curriculum materials. Susan Harper and Don Garthon, instructional designers have been working with Terri Lee of the department of Education to create this product. Chris Green is the part time consultant and SME who has developed the CD-ROM with Terri. A room
full of these CD-ROM's have been developed along with a teacher’s resource kit and a set of graduated learning activities. Some previous undetermined work with rural teachers was made in creating the existing educational product “321 Countdown”.

**Moving forward with recommendations**

*Analysis is the study we do in order to figure out what to do - Allison Rosset, Kendra Sheldon (2001, p. 31).* If we refer to our standard ADDIE models as defined in Reiser (2007, p.12), the analysis portion sets the stage for the quality of the end product. My recommendations at this point are to include a reassessment of analysis to build on what we know. From this new assessment we will outline goals as well as a delivery vehicle for this project to continue to success.

**Assessment of current analysis**

Initial assessment of any current analysis on hand should be reviewed by Terri, Doug and Susan to bring everyone up to speed and on the same page. Using the limited analysis that the “321 Countdown” materials has been created from, Doug & Susan should now be able to pull from these materials to conduct a reassessment of analysis, so they can move forward and not duplicate any previous analysis.

From what we have learned about the current project, I would still suggest a front end analysis to be conducted to make sure existing materials are appropriate. Regardless of what has been created for the teachers, it is important that a complete assessment is completed. Let us look at some of these options as many of the teacher’s resources have already been created. Front end analysis is broken into four distinct areas (George Mason University);
1) Performance analysis. A performance analysis is usually used to determine where the performance problem is found. For example is it the students, teachers or the resources available that are the cause of the low math scores. What discrepancies exist between current knowledge and what really needs to be taught to the teacher’s? What are the perceived reasons for providing this training for the teacher’s?

2) Environmental Analysis. An Environmental analysis should still be conducted to look at socio-cultural factors. Are the majority of children from rural farms, where historically education takes a back seat to farming? Is education a low priority at home?

3) Learner Analysis. The learner’s analysis can look at teacher training, and attitudes of the school districts. What do we know about these teachers, what is their skill level with computers and the subject matter? Do they have certain expectations by completing this professional development?

4) Needs assessment. Finally a needs assessment should be completed as well. A focus group should include some of the teachers to asses the needs. Questions such as why is this needed, and what do you want to accomplish from this are important questions to be answered.

A needs analysis worksheet can be created if you are still uncertain of these four areas of a front end analysis. With key questions completed, let us look at our teachers. A teacher survey has been included with this report.
Learner observations

Key observations (Network Learning design Ltd, 2005) can be made by conducting at least two classroom evaluations of different teachers. I would recommend Susan Harper, as she is trained as an ID, but has minimal experience with this grade level. This would help her understand more from the teacher’s point of view, and the limits of her time and resources. Also, I would recommend Chris Green the CD-ROM developer joins Susan to ascertain the needs of the teachers as well as to better understand some of the current constraints currently imposed on the teacher’s time.

In conducting learner observations the Learner and Context Analysis by Dick, Carey and Carey model is best suited for our needs (figure 1). The key idea is that we are not teaching to “groups” but to individuals. Also by learning more about our teachers, we can better understand and help them. Key components we should learn about our teachers are from Dick and Carey chapter 5, what motivates them, personal learning styles and previous experiences of the teacher. For example, the teachers might misconstrue this as “yet another mandate from the board of education, just like the last five things that didn’t work”. It should be made clear, that this will also provide professional development time for the teachers, something most teachers either require professionally, or personally. See attached guidelines under “learner observation tool.doc”

Goals and Objectives

Along the way, it should be determined what are we trying to accomplish? The audience is the teachers, but the true audience is the support and development of the K-6 students. To better determine audience, goals and objectives, I would suggest using the ABCD model for writing objectives per Hodell (pg 50).

The main questions to ask are;
1) Audience, is this the student or the teacher that we are trying to help?

2) Behavior, as stated by Hodell is the culmination of all the analysis and purpose of evaluation. What will they be able to do, such as “Teachers will be able to better determine the specific modules the students need to focus on.”

3) Condition or given the tools, the teachers will be able to use new materials for their students.

4) The Degree of success or in three hours of training, the teacher will be able to use the basic software provided in “321 Countdown”. All these help determine the objectives needed to complete the task at hand.

**Conclusion**

This document is a recommendation for analysis to strengthen K-6 Teachers in rural locations. Overall we are reminded that the overall target is an analysis of this case for K-6 grade classroom children via the teachers as well as professional development opportunities for teachers. To move forward I would recommend one of two models to complete this project. Let us review our options before we make a choice in our models to complete this project.

![Figure 1; The Dick, Carey and Carey (DCC) Model as shown below.](image-url)
The first model is the Dick, Carey and Carey (DCC) model. The benefit of the DCC model allows for using the analysis as we have recommended in this report to create a strong product. As you will agree, the summative evaluation and ability to break many of the design and development steps into bite size pieces give it strength in this case over the standard ADDIE model. It might be favored due to the linear approach and consideration of a more time consuming approach. But in this current project, we have gotten off to a leap frog start by skipping over much of the important analysis section. The DCC model will force a more linear approach, keeping everyone on track.

Our second model is the Rapid Prototyping model or RPM. From the Coney & Gumayagay paper on Rapid Prototyping We can see several advantages.

The RPM offers advantages as well as disadvantages in our particular situation. In this case, the product has already been mostly completed, so rapid prototyping is better suited for our needs to move the project along with minimal interruption.. Final product creation would be moved to a quicker final product as well, but could be hurt by inadequate initial analysis of the project. I would still recommend an analysis be done as previously discussed in the analysis portion of this paper. The other benefit of RPM in this case, is the ability to test the product and evaluate it as it progresses. This would fill in some of the missing needs analysis, and more closely utilize the existing “321 countdown” product.

The recommendation I am making in this case has two choices to move forward with, but regardless an initial analysis still needs to be completed. The DCC model would keep people on track better, but take longer to see the project to completion. My personal suggestion would be the RPM as the direction to move forward with. As an evaluations of needs could be done during the design and prototype phases,
minimizing lost time, as well as moving forward with the current materials developed. Also with Susan and Don’s extensive ID experience, I don’t see how things would get off track now.
Additional Tools

1. Attachment: Teacher Survey 1.doc
2. Learner observation tool.doc (Patrick Dunn, Guidelines for learner observation)
3. Coney J. & Gumayagay M paper on Rapid prototyping
4. The ABCD model for writing objectives
References

Coney, J & Gumayagay M (2009), Rapid Prototyping (Rapid_prototyping_final_doc Coney & Gumayagay 2009.doc) paper for OTEC600


Hodel, C. (2006), ISD from the Ground Up, A No-Nonsense Approach to Instructional Design, ASTD

Maryland Faculty Online, The ABCD model for writing objectives, Retrieved 15 December 2009 from www.mdfaconline.org/presentations/ABCDmodel.doc


