

CBBS Today



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Table of Contents

President's Message12
Board Of Directors15
Committee Chairs16
2005 CBBS Institutional Members .....	.18
Treasurer's Report .....	.19
Special Acknowledgements .....	.20
Award Nominations .....	.21
Patient-Donor Reunions .....	.23
Back to Basics in Donor Recruitment .....	.27
Educational Designing .....	.31
Emergency Preparedness:	
The Network and the Drills .....	.35
A Reminder:	
All LANS are Not Created Equal .....	.41
Lean Manufacturing 102 .....	.47
Novel Uses of Recombinant factor VII:	
A new Bright Star in Coagulation Therapy? .....	.53
How do Hospital Transfusion Service Laboratories	
Perform Quality Control (QC) Testing for Reagent Red Cells	
That are Part of an Antibody Identification Panel? .....	.61
4:1 The Challenges of Four Collections	
Training Specialists to 1 Curriculum .....	.65
52 ND Annual Meeting and Business	
Meeting Recap69
Post Test Questionnaire74

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Educational Designing

I enjoy watching home improvement shows on television. These programs have been around for years, and the trend has caught on. Now entire networks are devoted to them. I have learned from watching these shows that you can transform a home into a beautiful place to live with proper planning. While that is all well and good, there is nothing like Trading Spaces' for pure entertainment. Giving your keys to a neighbor with permission to redecorate a room in your house with only a vague idea, no real plan, and only 48 hours to accomplish everything, you know someone isn't going to be happy in the end. OK, so some people do like pink and chartreuse together in the same room. My point is that without a clear plan, you will always end up with something; it just may not be what you planned.

Instructional Design for training and educational programs is just like building a house. With the proper planning, you will end up with a great outcome. When starting to design a plan, there are four questions you need to ask:

1. Why is this learning necessary in the first place? (Needs assessment)
2. What will be learned? (Objectives)
3. What procedures and resources will work best to reach the desired learning?
(Activities)
4. How will you know the required learning has taken place? (Evaluation and outcome)

How do you start? With a need, or more precisely, you need to perform a **Needs Assessment**. CBBS is an accredited provider of continuing education units. There are several accrediting entities to which we belong, and each has a listing of standards that need to be met to be compliant and continue offering CEUs to our members. One of these accrediting bodies is the Institute for Medical Quality (IMQ), a division of the California Medical Association (CMA). This agency is responsible for the continuing education of practicing physicians within

California. The IMQ is under the guidance of the Accreditation Council for Continuing Medical Education (ACCME). This structure is similar to the relationship between CBBS and the AABB. Recently, the IMQ adopted new standards similar to those of the ACCME. These new standards will not be apparent to the recipients of CME. However, providers of CME will see some paperwork and process changes. The IMQ has identified three types of needs:

1. Expressed (staff requests, ongoing conferences, etc.)
2. Demonstrated (quality assurance, risk management, etc.)
3. Presumed (new product/skill/procedure/treatment strategy, etc.).

Needs Assessments can be developed in many different ways. Using the checklist below, you will see four categories listed (this breaks out the three types of needs identified by the IMQ). Examples listed under Expert Needs could be a result of departmental committees or new FDA requirements. Participant Needs could be from focus groups or requests made by staff. Observed needs are derived from specific guidelines – JCAHO, AHRQ – or hospital-based trends. Environmental scanning is based upon a review of societal trends, lay press, consumer ads, and what other CEU providers are offering. Various sources can initiate a needs assessment: requests made by staff, a recent article published in a trade journal, committee meeting discussions, or paper and pencil survey forms to focus groups. Helping to make documenting identified needs a more manageable process, create a checklist form with the needs broken into the previously listed categories. Using this form, you place a checkmark in the box that identifies how you assessed your program need. Keep this form and any supporting documentation on the development of your needs assessment in your program files.

This checklist is relatively comprehensive to the many ways needs may be identified. Within the framework of needs assessment is an idea called “Transformative Learning” This is an adult learning theory pioneered by Jack Mezirow (Mezirow, 1994). Adult learning is very different

from childhood education. As an adult, you already have your base learning along with years of life experience. Now that you are working in your field, you still seek learning experiences, but the whole process for seeking them out and what you expect of them has changed.

Transformative Learning suggests that you have a **Perspective Transformation**, after which self-examination you have feelings of discomfort. To most people, this could be a moment where you realize, “Oh no! I need to know that!” You would then decide to seek out training to meet this specific need. Potential learners who are not yet invested in change require a catalyst for awareness and intention for change. Recent theories of motivation and change provide a guide to creating educational activities that meet these goals (Fazio-Griffith & Ballard, 2016).

Once you have the “Why you need this training” question answered, you can begin work on the “What” and “How.” These steps will help identify your **Learning Objective**.

Expert Needs	Participant Needs	Observed Needs	Environmental Scanning
<input type="checkbox"/> Planning committee <input type="checkbox"/> Departmental chair <input type="checkbox"/> Activity faculty <input type="checkbox"/> Expert panels <input type="checkbox"/> Peer-reviewed literature <input type="checkbox"/> Research findings <input type="checkbox"/> Required by a medical school authority <input type="checkbox"/> Required by governmental authority / regulation / law	<input type="checkbox"/> Previous related evaluation summary <input type="checkbox"/> Focus panel discussions / interviews <input type="checkbox"/> CBBS Needs Assessment survey <input type="checkbox"/> Indicated in learning stage analysis <input type="checkbox"/> Other requests from physicians / RNs / CLS / MT <input type="checkbox"/> Requested by affiliated institutions or physicians' groups	<input type="checkbox"/> Hospital / clinic/ QA analysis <input type="checkbox"/> Other clinical observances <input type="checkbox"/> Mortality / morbidity data <input type="checkbox"/> Epidemiologic data <input type="checkbox"/> National clinical guidance (NIH, NCI, AHRQ, etc.) <input type="checkbox"/> Specialty society guidelines <input type="checkbox"/> Database analysis (e.g. Rx changes, diagnosis trends, etc.)	<input type="checkbox"/> Evidence of offerings from other CE providers <input type="checkbox"/> Lay press <input type="checkbox"/> Direct-to-consumer ads <input type="checkbox"/> Other societal trends

An **objective** is a description of a performance or outcome you want learners to exhibit before considering them competent. An objective describes an intended result of training or instruction rather than the process of the training or instruction itself. Stating an objective clearly

at the beginning of a training program is the only way to measure if the training was successful for the learner and the desired outcome has been met. Learning objectives must contain three parts:

1. Conditions (Statement that describes the conditions under which the behavior is to be performed).
2. Behavioral Verb (Action word that connotes an observable, measurable behavior).
3. Criteria (Statement that specifies how well the behavior be performed).

Objectives are written using a behavioral verb that can then be measured upon completion of the training program. The criteria are the basis upon which the action verb will be measured. A few examples of learning objectives would be: “At the end of this training program, the learner will be able to **explain** in writing the advancement of transfusion therapy.” **Explain** would be the behavioral verb in this objective. During a post-test, the learner could write a few sentences to demonstrate their comprehension of the topic (condition).

Another example might be: “At the end of this training program, the learner will be able to **perform** a phlebotomy on a fellow class participant by competently demonstrating one venous withdrawal for the instructors’ observation.” **Perform** would be the behavioral verb in this objective. At the end of the training program, the participant would demonstrate actual phlebotomy to the instructor or preceptor into a vein and venous blood withdrawal (condition).

Another example would be: “At the end of this training program, the learner will be able to **recognize** the correct SOP when given three similar SOPs for a specific task. **Recognize** would be the behavioral verb in this objective. During the post-test, the learner might be shown two or three SOPs and check a box corresponding to the task for which it was written (condition).

When writing your learning objectives, there are some things to keep in mind. The objectives must be **measurable**. Always think about how you will measure the outcome of your training program; while it need not be a pencil and paper test, it might well be demonstrated. When writing objectives, some words should be avoided, such as not being measurable or open to several interpretations. Some examples of these words are *know*, *understand*, *learn*, *appreciate*, and *improve*. How can you measure if someone *knows* something? Or *understands* and *appreciates*? Do you appreciate classical music or modern music? These are not specific and fall under other interpretations and are best avoided (Mager, 1997).

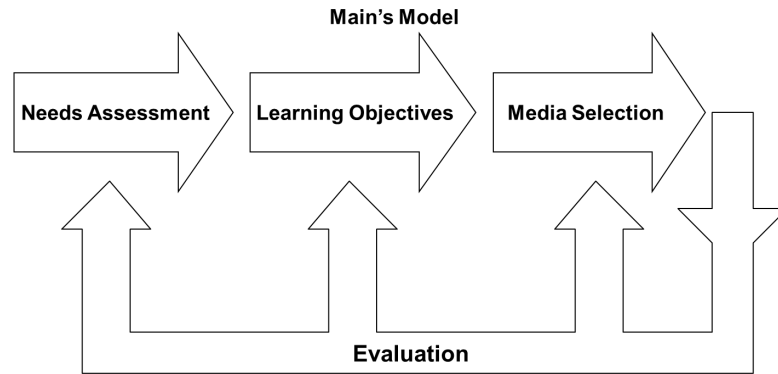
Some good websites for listings of behavioral verbs and additional information on the development of learning objectives are listed here:

https://www.apu.edu/live_data/files/333/blooms_taxonomy_action_verbs.pdf

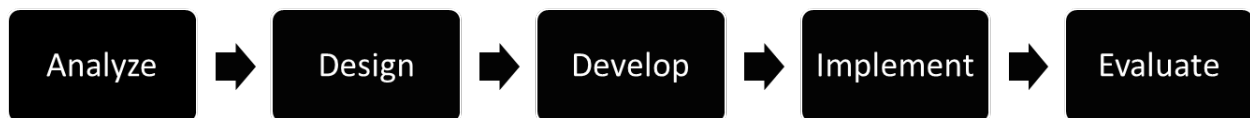
<https://www.celt.iastate.edu/wp-content/uploads/2015/09/RevisedBloomsHandout-1.pdf>

Once you have your learning objectives written, you can proceed with the development of your training program. Resources for training have come far in the past decade. No longer are you limited to a flip chart and overhead projector. Now the instructor has a laptop computer connected to a video projector, VCR, DVDs, web-based and computer-based instruction, along with audio and video conferencing to remote locations.

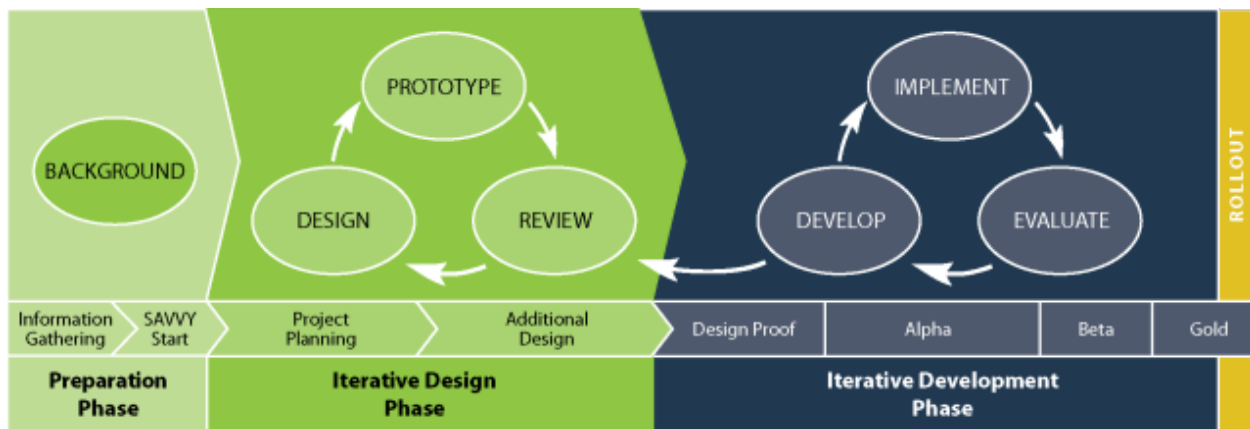
Lastly, we come to the evaluation and learning outcomes. In the diagram, “Main’s Model,” the needs assessment flows into the So just as the name implies, Instructional from the development of learning objectives, which flows into media selection for the training program. At the end, the arrow turns down and back, which is the evaluation phase.



Instructional Design models have progressed in recent years. The ADDIE (Analyze, Design, Develop, Implement, and Evaluate) model became popular due to its greater detail in steps.



And more recently with the advancement of eLearning, the SAM model (Successive, Approximation Model) which is more iterative and is in line with how courses are developed.



Evaluation needs to take place throughout the entire development process of the training program. You should evaluate your needs assessment and your learning objectives before the full-scale implementation of any training program. The evaluation points up to each category listed. A final program evaluation may range from pencil and paper questionnaires to demonstrations of recently learned skills. Remember that whatever means of assessment is used,

it must be linked back to the learning objectives. Within your learning objectives, you should have defined the condition, action, and evaluation criteria.

Outcomes are another way of evaluating a training program. Outcomes typically fall at the higher-level learning measurements and may need data collected from other departments within your company or even from your hospital partners. An example of an outcome might be a training program developed on West Nile Virus (WNV) detection. By utilizing your blood center's lab and quality departments, you will have awareness, training, and skill to detect WNV. Ultimately this will decrease the transmission of WNV by transfusion to patients. This is an essential measurable outcome since being able to affect the patient outcome positively is the primary goal of CME. With ever-tightening budgets, the ability to measure a positive patient outcome from a direct educational offering is where medical education has evolved from.

So, just as the name implies, Instructional Design considers the entire educational and development process.

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