Open Questions and their Relationship to Levels of Cognitive Learning using Benjamin Bloom's Taxonomy

In this issue, we will incrementally examine open questions that invite using the material (content) in a new situation.

APPLICATION is the third level of Benjamin Bloom's *Cognitive Taxonomy of Education*; it is the first level that extends knowledge beyond acquiring and understanding. The application level and beyond is aimed for in all Dialogue Education™ events. Practice, or application into a new situation, is similar to what a learner will experience when he or she leaves the workshop or course, and then uses their learning in a new situation and context (transfer).

It's vital to incorporate application, as well as refection upon the application; in this way the learner and teacher can see, feel, hear and assess how the learner is currently working with the material. In addition, when there is a product produced as a part of the application, the learner and/or the group can easily reflect upon the extent to which the product reflects effective use of the new information.

Through these actions, the learner is actively engaging with the material, doing something with "it" and making "it" his or her own. These points are illustrated in the following:

A. Here are three *Example Learning Tasks* from different designs that use open questions to apply content in new ways.

Upcoming Events

Learning to Listen, Learning to Teach
An Introduction to Dialogue Education™

April 26-29, 2011 ~ Stowe, VT
with Peter Perkins
(peterp@globalearning.com)

[register now]

June 7-10, 2011 ~ Raleigh, NC
with Karen Ridout
(karen@globalearning.com)
Early Bird deadline: April 12

[register now]

September 20-23, 2011 ~ Boston, MA
with Marian Darlington Hope
(marian@globalearning.com)
Early Bird deadline: July 26

[register now]

November 1-4, 2011 ~ Toronto, ON
with Jeanette Romkema
(jeanette@globalearning.com)
Early Bird deadline: September 6

[register now]

Advanced Learning Design

June 13-15, 2011 ~ Raleigh, NC
with Karen Ridout
(karen@globalearning.com)
Early Bird deadline: April 18

[register now]

November 16-18, 2011 ~ Montpelier, VT
with Peter Perkins
(peterp@globalearning.com)
Early Bird deadline: October 5

[register now]

B. Notice how these four open questions take you through a learning cycle:
    1. *What do you see happening here?* **(describe)**
    2. *When it happens in your situation, what problems will it cause?* **(apply)**
    3. *Why do you think it happens?* **(analyze)**
    4. *What can be done to improve such a situation?* **(suggestions for change)**

C. Use this handout: **Open Questions Resulting in a Product** to give you ideas for developing the application part of a Learning Task.

D. If you are looking to develop greater finesse with selecting the "right" level of objective for cognitive learning, spend some time with Benjamin Bloom's *Cognitive Taxonomy of Education*.

For more on application, see the following resources:

Bloom, B.S. (1956) *Taxonomy of Educational Objectives – Handbook 1: Cognitive Domain*. New York: David McKay.

Knowles, M. S. (1989) *The Making of an Adult Educator*. San Francisco: Jossey-Bass.

Knowles, M. S. (1978) *The Adult Learner: A Neglected Species* (2nd ed.) Houston: Gulf.

Knowles, M. S. (1980) *The Modern Practice of Adult Education: From Pedagogy to Andragogy*. Chicago: Follett.

Vella, J. (2003). *Dialogue Education at Work: Case Studies*. San Francisco, CA: Jossey-Bass.

Vella, J., Berardinelli, P., Burrow, J. (1998) *How Do They Know They Know*. San Francisco, CA: Jossey-Bass.

Vella, J. (2003) *Learning to Listen Learning to Teach: The Power of Dialogue in Educating Adults*, Rev Ed. San Francisco, CA: Jossey-Bass. (now available in Chinese!)

Vella, J. (1995). *Training Through Dialogue*. San Francisco, CA: Jossey-Bass.

Vella, J. (2000). *Taking Learning to Task*. San Francisco, CA: Jossey-Bass.

Vella, J. (2008). *On Teaching and Learning.* San Francisco, CA: Jossey-Bass.

To deepen your practice with achievement-based objectives, evaluation and learning tasks, consider attending one of Global Learning Partners' courses:

- **Advanced Learning Design** provides a deeper examination of designing learning tasks. In this course, we ask you to bring a design that you are working on, to refine it with new theory and ideas, and to present or teach part of it to the group for feedback. Look for the next public session on our **website.**
- **Learning Evaluation by Design** focuses on a practical approach to designing and conducting learning evaluations. Together you will complete an Accountability Planner that will outline the expected learning, transfer and impact of your design, and help you to document evidence of changes at the individual, organizational and community levels. *Note that this course is not currently on the 2011 public course schedule. Contact us for information.

Explanation of Bloom's Taxonomy

(Adapted from **Designing Brain Compatible Learning**, by Gayle H. Gregory and Terence Parry)

Benjamin Bloom's model, developed in the 1950s, is both enduring and useful as a way to model the enhancement of thinking. It is a developmental model in the sense that it focuses on thinking at ever greater levels of complexity. It helps us avoid simply making content more difficult, and instead makes it more complex.

KNOWLEDGE: Defined as the mere rote recall of previously learned material. All that is required is bringing it forth in the form in which it was learned. It represents the lowest level of learning in the cognitive domain since there is no presumption the learner understands what is being recalled.

COMPREHENSION: Describes the ability to make sense of the material. This may occur by converting the material from one form to another by summarizing or by estimating future trends. This learning goes beyond mere rote recall and represents the lowest level of understanding. When material is understood rather than just recalled, it is available for future use to solve problems and make decisions.

APPLICATION: Refers to the ability to use learned material in new situations with a minimum of direction. It includes the application of such things as rules, concepts, methods, and theories to solve problems. Convergent thinking is used to select, transfer, and apply data to a complete new task. Practice is essential at this level.

ANALYSIS: The ability to break material into its component parts so that its structure may be understood. It includes identifying parts, examining the relationships of the parts to each other and to the whole, and recognizing the organizational principles involved. The learner must be able to organize and reorganize in categories. This is a higher level because the learner is aware of the thought process in use.

SYNTHESIS: The ability to put parts together to form a plan that is new to the learner. It may involve the production of an essay or speech, a plan of operations, or a scheme for classifying information. This level stresses creativity with major emphasis on forming new patterns. This is the level where learners get an "Aha!" experience.

EVALUATION: At this level, learners have the ability to judge the value of material based on specific criteria. The learner may determine the criteria or be given them. The learner selects criteria that are the most relevant to the situation. Activities at this level almost always have multiple and equally acceptable solutions.

NOTE: We seek to increase the COMPLEXITY, not the difficulty of tasks. For instance, "recall" can be quite difficult! The first two levels – Knowledge and Comprehension, are at levels where learners ACQUIRE information. At the remaining four levels, they may EXTEND what they know.

Bloom's Taxonomy and Corresponding Verbs

KNOWLEDGE LEVEL			
	➢ Described	➢ Labeled	➢ Outlined
	➢ Identified	➢ Defined	➢ Recalled
	➢ Listed	➢ Matched	➢ Recorded
	➢ Located	➢ Named	➢ Indicated

COMPREHENSION LEVEL			
	➢ Explained	➢ Classified	➢ Differentiated
	➢ Given examples	➢ Compared	➢ Distinguished
		➢ Contrasted	➢ Estimated
	➢ Summarized	➢ Converted	
	➢ Paraphrased	➢ Interpreted	

APPLICATION LEVEL			
	➢ Deduced	➢ Solved	➢ Utilized
	➢ Inferred	➢ Modified	➢ Illustrated
	➢ Predicted	➢ Practiced	➢ Discovered
	➢ Adapted	➢ Prepared	➢ Applied
	➢ Related	➢ Examined	➢ Completed
			➢ Demonstrated

ANALYSIS LEVEL			
	➢ Subdivided	➢ Dissected	➢ Summarized
	➢ Classified	➢ Categorized	➢ Diagrammed
	➢ Analyzed	➢ Proposed	➢ Deduced
	➢ Organized	➢ Specified	➢ Discriminated

SYNTHESIS LEVEL			
	➢ Induced	➢ Integrated	➢ Selected
	➢ Generalized	➢ Combined	➢ Constructed
	➢ Created	➢ Planned	➢ Generated
	➢ Composed	➢ Developed	➢ Recommended

EVALUATION LEVEL			
	➢ Judged	➢ Graded	➢ Assessed
	➢ Compared	➢ Criticized	➢ Critiqued
	➢ Contrasted	➢ Justified	➢ Determined
	➢ Appraised	➢ Ranked	➢ Measured

SOURCE: Parry & Gregory (1998). Designing Brain Compatible Learning. IL: Skylight Publishing.

Tips & Tools

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Example Learning Tasks Using
Open Questions to Invite Application

Example 1

Anchor:

Find the person who has the same symbol on their nametag as you have. Introduce yourself if needed. Together, share the impacts you have seen on his or her life. If you'd like, jot down your responses. Be finished by _____, when we will hear <u>one</u> impact from each person, until everyone has had a chance to speak.

<Set out objectives for the 2 hrs, respond to questions>

Add:

Read: Handout 1.2, "Self-Management: Why Taking Charge of Chronic Disease Matters"
As you read, circle what stands out to you as the greatest barrier to self-management. We'll hear a sample of what you chose and why.

- What questions do you have about what a chronic disease is or self-management?
- What barrier did you name?
- How do you think a focus on self-management shifts the role of the medical provider and helper?

<Scribe or post-it's?>

Apply:

In your table group, choose two barriers and brainstorm ways that these barriers could be eliminated or minimized. Create a chart with your ideas using the paper on the table. We'll see and hear your ideas.

SOURCE: Chronic Disease Self-Management: What's In It for All of Us?

Example 2

Task #11:   Effective Visuals

11A. Share at your tables: *What kinds of visuals do you use to accompany teaching and training in your work?*

11B. Listen to this brief illustrated explanation of the reason for using visuals.

11C. With your design partner, take a gallery walk of the charts and other visuals used in this course. Decide upon 3 characteristics for effective charts and other visuals. Create a visual that highlights these key points. We'll see your examples.

11D. Tell which dialogue education principles that we have studied so far speak to the use of effective charts and visual aids. We'll hear all.

SOURCE: Learning to Listen, Learning to Teach**;** ©Global Learning Partners for ASPCA June 27 – 30, 2006
www.globalearning.com

Example 3

ALPHA Reviews
   A. Study the Book Review Handout.
   B. Select which of the four reviews is most appealing to you.
   C. Decide what 3 or more features make it most appealing to you?
   D. In groups of three create an Alpha Poem using the word "R-E-V-I-E-W that will serve to remind you of the features you appreciate most in a review.
   E. We'll see and hear your Review Poems.

SOURCE: A Reader's Journal ©ThriveInk, Darlene Goetzman March 2011. **www.darlenegoetzman.com**

Open Questions Resulting in a Product

Open Question	Product
How will knowing this (content) help you in at home/work/in relationships?	With a partner, create a bumper sticker that captures the most critical aspects of this information
What factors would you change if this happened at work? Why?	Create a role play to demonstrate how this information can be used with your coworkers.
What do you imagine might happen if these formula was tested at a bakery?	Adapt the formula so that it will work effectively in the new situation
What priority would you place these dimensions for effective radio announcements in to reflect most to least used in your media announcements?	Create a radio Public Service Announcement for your organization that captures each dimension of an effective radio announcement
Create questions that might work for these products-------	
	Write a text book for others about…
	Create a collection of photographs that represent a (concept)
	Sketch out your plan using all of the tools and techniques you have learned in this course