

## Engaging Students In A High-Impact, Learner-Centered Environment

Many educators understand the importance of a learner-centered teaching model that encourages critical thinking skills. However, the methods that can be used to attain such a learning environment can be perplexing. Presented is a five-step process, built upon existing theory and best practice, which provides educators with a useful means in which to move their courses, in any discipline, toward one that inspires and encourages the development of critical thinking skills with emphasis on high-impact activities.

### Process for the Development of Higher Level Thinking Skills

The following five-step *Process for the Development of Higher Level Thinking Skills* can be implemented in virtually any teaching setting (including online) to create a more active learning environment and to move learners toward higher level thinking.



Figure 1: Process for the Development of Higher Level Thinking Skills (Limbach & Waugh, 2012)

Table 1. Bloom’s Revised Taxonomy

Bloom’s Revised Taxonomy		
Level of Thinking	Focused On	Actions
1. Remember	Recall or recognition of specific information	describe, find, identify, list, locate, name, recognize, retrieve, state
2. Understand	Determining the meaning of given information	classify, compare, contrast, exemplify, explain, infer, interpret, paraphrase, summarize
3. Apply	Using strategies, concepts, principles, and theories in a given situation	carry out, construct, discover, execute, implement, show, solve, use
4. Analyze <i>(critical thinking)</i>	Breaking information down into component elements and detecting how the parts relate to one another	attribute, categorize, classify, compare, differentiate, deconstruct, examine, integrate, organize, outline, structure
5. Evaluate <i>(critical thinking)</i>	Judging the value of ideas, materials and methods by developing and applying standards and criteria	assess, check, critique, detect, evaluate, experiment, hypothesize, judge, monitor, predict, recommend, test
6. Create <i>(critical thinking)</i>	Putting together ideas or elements to develop an original idea/product	combine, construct, create, design, devise, invent, plan, produce, role-play, suppose,

Source: Anderson & Krathwohl, 2001.

**Step 1: Determine Learning Outcomes and Objectives**

Considering the importance of a course, its placement in a program, and its role in providing a base of discipline knowledge, a teacher should carefully identify key learning outcomes and objectives that recognize what learners should know when they exit the course. The development of well-written outcomes and objectives will greatly accelerate a learner's movement into higher level thinking (Ball & Garton, 2005). To make critical thinking happen, these learning

outcomes and objectives, as well as the linked activities and assessments, must require students to perform and demonstrate higher level thinking. Thus, an effectively designed course should target a specific behavior, introduce and practice the desired behavior, and end with the learner exhibition of the behavioral response.

- A. Consider discipline, program, and course outcomes
  1. Define specific outcomes
    - a. Discipline
    - b. Program
    - c. Course
- B. Determine learning objectives
  1. Define course/unit learner objectives
    - a. State clear rationale for learning skills/information
- C. Target behaviors learners should exhibit in higher level thinking
  1. Target behavioral verbs-actions
    - a. Use Bloom's Revised Taxonomy

**Step 1: Determine Learning Outcomes and Objectives****A. Discipline, Program, and Course Outcomes****Discipline**


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**Program**


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**Course**


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**B. Learning Objectives (using higher level thinking)**


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**Rationale**


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**C. Target Behaviors**


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## Step 2: Facilitate Learning through High-Impact Activities

To make learning more meaningful, teachers should develop high-impact activities. Activities, experiences, or interventions that are focused around clear objectives develop more engaged learners, with deeper learning, and a greater ability to think critically (Smart & Csapo, 2007). For learners to foster understanding and stimulate intellectual growth, they must pose arguments, state opinions, and critique evidence using primary and secondary sources. The art of interactive

discussion begins with establishing what is known and allows the teacher to extend beyond to develop new ideas and understandings. Clasen and Bonk (1990) posited that although many strategies exist that can impact learner thinking, teacher questions have the greatest impact. They went on to indicate that the level of learner thinking is

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- A. Link high-impact activities to learning objectives
    - 1. Use direct and indirect activities
    - 2. Add experiential learning and opportunities for reflection
    - 3. Emphasize a search for answers using primary and secondary resources
  - B. Plan for interactive discussion
    - 1. Foster understanding and stimulate intellectual growth
      - a. Pose arguments, state opinions, critique evidence with open mind
    - 2. Draw out various types of learners (shy learner; lazy learner; talkative learner, etc.)
    - 3. Challenge learners to defend their position
  - C. Develop appropriate questioning techniques
    - 1. Consider purpose, appropriate thinking level, and type of question
      - a. Convergent vs. divergent
    - 2. Rephrase questions, redirect questions/responses, allow debate time

directly proportional to the level of questions asked. When teachers plan, they must consider the purpose of each question and then develop the appropriate level and type of question to accomplish the purpose. All learners need experience with higher level questioning once they become familiar with a concept. Choosing high-impact, learning activities that allow the learner to critically think, is important (Schafersman, 1991).

### Step 2: Facilitate Learning through High-Impact Activities

#### A. Link High-Impact Activities to Learning Objectives

##### Direct Activities

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##### Indirect Activities

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**Experiential Learning/Reflection**

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**B. Plan for Interactive Discussion  
Foster Understanding**

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**Draw Out Various Types of Learners**

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**Challenge Learners to Defend Their Position**

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**C. Develop Appropriate Questioning Techniques  
Convergent Questions**

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**Divergent Questions**

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**Redirect, Rephrase Questions, Debate Issues**

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**Step 3: Allow Frequent Opportunities to Practice before Assessment**

Practice is necessary to master any skill; learners must have the opportunity to practice the knowledge, skills, attitudes, and behaviors that will be evaluated. Learners become responsible for their own learning when teachers create a supportive environment by providing clear expectations, monitoring class activities, and carefully tracking student participation. Collecting feedback from students about what they have, or have not learned, may present the need to offer opportunities for re-learning and expose areas in need of improvement.

- A. Create a supportive environment
  - 1. Persuade learners to take responsibility for their own learning
  - 2. Provide clear course expectations
    - a. Provide examples, screen shots based on standards expected
    - b. Monitor class activities
    - c. Track student participation
- B. Collect feedback from learners
  - 1. Determine what has or has not been learned
    - a. 2-minute paper, chain notes, memory matrixes, online surveys, votes
- C. Offer opportunities for re-learning
  - 1. Expose areas in need of improvement
  - 2. Provide re-learning opportunities
    - a. Workbook, reproduction, quiz/test, demonstration, panel, game, podcasts



**Step 3: Allow Frequent Opportunities to Practice before Assessment**

**A. Create a Supportive Environment**

**Course Expectations** \_\_\_\_\_  
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**Monitor Class Activities** \_\_\_\_\_  
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**Track Student Participation** \_\_\_\_\_  
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**B. Collect Feedback from Learners**

**Determine What Has/Has Not been Learned** \_\_\_\_\_  
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**C. Offer Opportunities for Re-learning**

**Expose Areas in Need of Improvement** \_\_\_\_\_  
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**Re-learning Opportunities** \_\_\_\_\_  
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**Step 4: Continue to Review, Refine, and Improve**

Teachers should strive to continually refine their courses to ensure that their instructional techniques are in fact moving learners toward critical thinking. Feedback, like assessment, compares criteria and standards to student performance in an effort to evaluate the quality of work (Ko, 2004). Prior to providing opportunities to practice what is to be assessed; learners must first understand the standards by which they will be assessed. Next, learners should be provided with

constructive and relevant feedback by the teacher and peers, as well as assessing their own performance. Learner feedback can then be used to improve instruction and learner performance.

- A. Provide teacher and peer feedback to learner
  1. Teacher evaluation/feedback
    - a. Pretest/posttest
    - b. Comparison of high quality work and learner performance
  2. Peer review evaluation/feedback
    - a. Review/grade another students work
      1. Guidance to assume this responsibility is necessary
- B. Create opportunities for learner self-assessment
  1. Learner reflection and analyzes of own ways of thinking and learning
    - a. Self-score using a grading rubric
- C. Utilize feedback to improve instruction and learner performance

**Step 4: Continue to Review, Refine, and Improve****A. Provide Feedback to Learner****Teacher Feedback**


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**Peer Feedback**


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**B. Learner Self-assessment****Self Feedback**


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**C. Improve Instruction and Learner Performance**


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**Step 5: Assess Learning Outcomes and Objectives**

Learner achievement should be measured based on learning objectives, course and program outcomes, and specific discipline knowledge. This measurement can provide an immediate and significant source of information for the outcomes-based assessment process in evaluating a particular course, departmental program, curriculum, instructional techniques, specific learning activities, and learner achievement. This step facilitates the continuous review of the course outcomes and learning objectives to ensure they are still relevant.

<ul style="list-style-type: none"> <li>A. Measure student achievement based on learning objectives                             <ul style="list-style-type: none"> <li>1. Learner interviews, feedback during the course</li> <li>2. Activities review</li> <li>3. Test results</li> <li>4. Alignment</li> </ul> </li> <li>B. Determine discipline, course, and program outcomes were met                             <ul style="list-style-type: none"> <li>1. Compare learning objectives evidence with standards</li> </ul> </li> <li>C. Review course outcomes and learning objectives for relevancy                             <ul style="list-style-type: none"> <li>1. Utilize outside observers and accrediting bodies</li> </ul> </li> </ul>	
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**Step 5: Assess Learning Outcomes and Objectives**

**A. Measure Student Achievement**

**Learner** \_\_\_\_\_

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**Activities** \_\_\_\_\_

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**Test Results** \_\_\_\_\_

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**Alignment** \_\_\_\_\_

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**B. Discipline, Program, Course Objectives Met**

**Learning Objectives Compared to Standards** \_\_\_\_\_

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**C. Relevant Course Outcomes and Learning Objectives**

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## Discussion

The successful implementation of the *Process for the Development of Higher Level Thinking Skills* in any learning environment requires the thoughtful consideration of current instructional techniques and the commitment to embrace changes and differences so as to flourish in an active, high-impact, learner-centered learning environment.

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