

**TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER
SCHOOL OF MEDICINE**

OFFICE OF CURRICULUM

**Integrating Our Curriculum:
The ABC's of Writing
Learning Objectives**

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March 14, 2006*

A Six-Step Approach to Curriculum Development *

Step 1: Problem Identification and General Needs Assessment

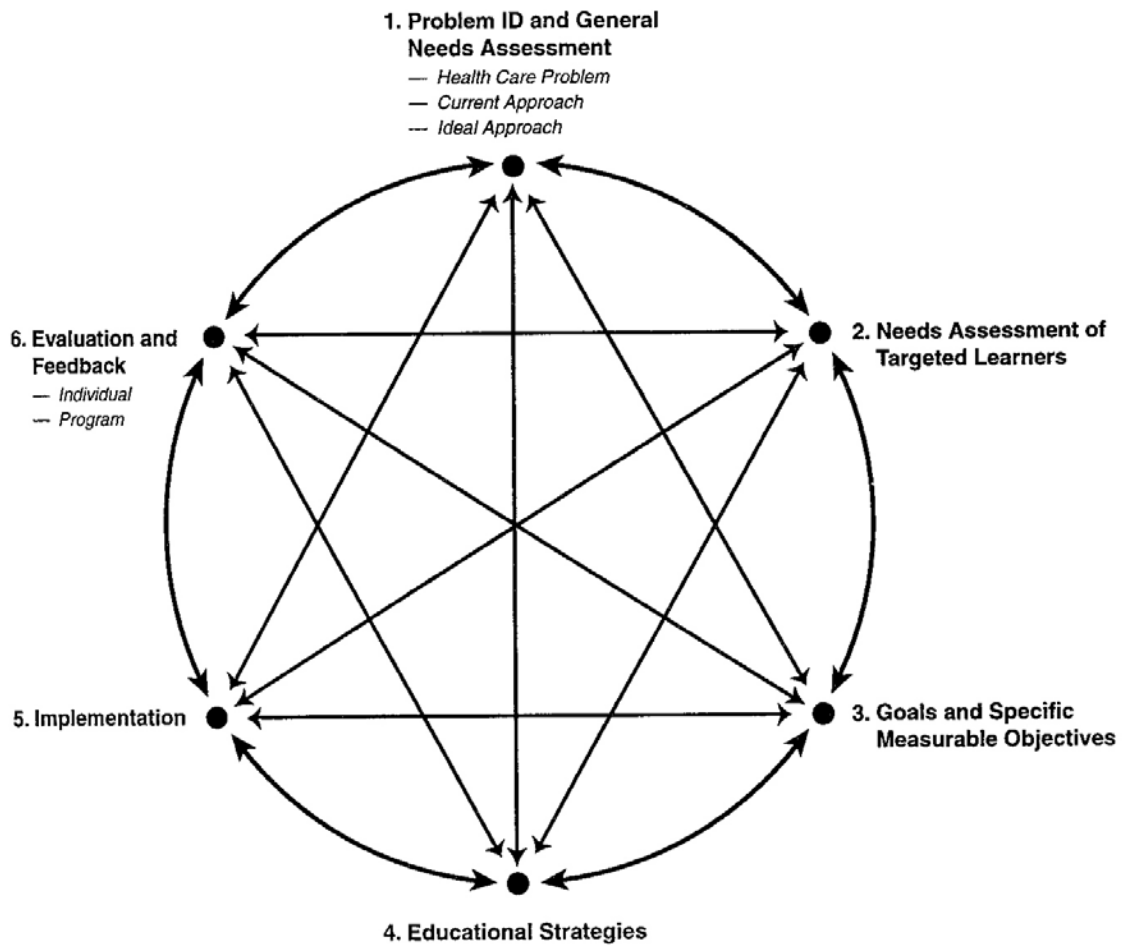
Step 2: Needs Assessment of Targeted Learners

Step 3: Goals and Objectives

Step 4: Educational Strategies

Step 5: Implementation

Step 6: Evaluation and Feedback



*Kern D et al. Curriculum Development for Medical Education, A Six-Step Approach. Baltimore: John Hopkins University Press, 1998.

STEP 1: PROBLEM ID

- Problem Identification and General Needs Assessment
- Current Approach
- Ideal Approach

STEP 2: NEEDS ASSESSMENT OF TARGETED LEARNERS

- What?
- Why?
- Who?
- Content?
- How?

STEP 2: NEEDS ASSESSMENT: METHODS

- Informed discussions
- Formal interviews
- Focus group discussions
- Questionnaires
- Direct observation
- Test
- Audit of current performance
- Strategic planning sessions for the curriculum

STEP 3: WRITING GOALS AND OBJECTIVES

CURRICULAR GOAL

- Is A broad educational outcome
- Defined as an end toward which an effort is directed
- Communicates the overall purpose of a curriculum
- Provides a global perspective of what students will learn in the curriculum
- Expressed in non-behavioral terms

CURRICULAR OBJECTIVE

- Is used when a specific measurable objective is being discussed
- Description of behavior expected after instruction
- Tips to writing objectives (SMART)
- S=Specific
- M=Measurable
- A= Attainable
- R= Relevant
- T= Timely

5 BASIC ELEMENTS OF OBJECTIVES

- Who
- Will do
- How much
- Of what
- By when

TYPES OF OBJECTIVES

- Learners
 - Cognitive (knowledge)
 - Affective (attitude)
 - Motor(Skills)
 - Psychomotor (behavior or performance)
- Process
- Outcome

Table 4.3 Types and Levels of Objectives. Examples from a Smoking Cessation Curriculum for Residents

	Level of Objective	
	Individual Learner	Aggregate or Program
LEARNER		
Cognitive (Knowledge)	By the end of the curriculum, each resident will be able to list the 8-step approach to effective smoking cessation counseling.	By the end of the curriculum, $\geq 80\%$ of residents will be able to list the 8-step approach to effective smoking cessation counseling, and $\geq 90\%$ will be able to list the 4 critical (asterisked) steps.
Affective (Attitude)	By the end of the curriculum, each primary care resident will rank smoking cessation counseling as an important and effective intervention by primary care physicians (≥ 3 on a 4-point scale).	By the end of the curriculum there will have been a statistically significant increase in how primary care residents rate the importance and effectiveness of smoking cessation counseling by primary care physicians.
Psychomotor (Skill or Competence)	During the curriculum, each primary care resident will demonstrate in role-play a smoking cessation counseling technique that incorporates the attached 8 steps.	During the curriculum, $\geq 80\%$ of residents will have demonstrated in role-play a smoking cessation counseling technique that incorporates the attached 8 steps.
Psychomotor (Behavior or Performance)	By 6 months after completion of the curriculum, each primary care resident will have negotiated a plan for smoking cessation with $\geq 60\%$ on his or her smoking patients or will have increased the percentage of such patients by $\geq 20\%$ from baseline.	By 6 months after completion of the curriculum, there will have been a statistically significant increase in the % of GIM residents who have negotiated a plan for smoking cessation with their patients
PROCESS	Each primary resident will have attended both sessions of the smoking cessation workshop.	$\geq 80\%$ of primary care residents will have attended both sessions of the smoking cessation workshop.
OUTCOME	By 12 months after completion of the curriculum, the smoking cessation rate (for ≥ 6 months) for the patients of each primary care resident will increase ≥ 2 -fold from baseline or will be $\geq 10\%$.	By 12 months after completion of the curriculum, there will have been a statistically significant increase in the % of primary care residents' patients who have quit smoking (for ≥ 6 months).

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Possible Verbs for Use in Stating Cognitive Learning Objectives

Evaluation

Appraise
Assess
Choose
Compare
Estimate
Evaluate
Judge
Measure
Rate
Revise
Score
Select
Value

Synthesis

Arrange
Assemble
Collect
Compose
Construct
Create
Design
Formulate
Organize
Plan
Prepare
Propose
Set up

Analysis

Analyze
Appraise
Calculate
Categorize
Compare
Contrast
Criticize
Debate
Diagram
Differentiate
Distinguish
Examine
Experiment
Inspect
Inventory
Question
Relate
Test

Application

Apply
Demonstrate
Develop
Dramatize
Employ
Illustrate
Interpret
Operate
Practice
Schedule
Sketch
Solve
Use

Comprehension

Conclude
Describe
Discuss
Explain
Express
Give examples
Interpret
Locate
Recognize
Report
Restate
Review
Summarize
Translate

Knowledge

Define
Identify
List
Match
Name
Recall
Record
Relate
Select
State

Some Possible Verbs for use in Stating Affective Objectives

Receiving

Objectives at the receiving level require the student to be aware of, or to passively attend to certain phenomena and stimuli. At this level, students are expected to simply listen or be attentive.

Attend
Be aware
Control
Discern
Hear
Listen
Look
Notice
Share

Responding

At the responding level the student is required to comply with given expectations by attending or reacting to certain stimuli. Student are expected to participate, or respond willingly when asked or directed to do something.

Applaud
Comply Discuss
Follow
Obey
Participate
Play
Practice
Volunteer

Valuing

Objectives at the valuing level require the learner to display behavior consistent with a single belief or attitude in situations where he or she is neither forced or asked to comply. Students should demonstrate a preference or display a high degree of certainty or conviction.

Act
Argue
Convince
Debate
Display
Express
Help
Organize
Prefer

Organization

A commitment to a set of values is what is expected from students performing at the organization level. This level involves 1) forming a reason why one values certain things and not others; 2) making appropriate choices between things that are and are not valued. Organization of likes and preferences into a value system and then decide which ones will be dominant.

Abstract
Balance
Compare
Decide
Define
Formulate
Select
Systematize
Theorize

Characterization

All behavior displayed by the student should be consistent with their values. This is the requirement of the characterization level. The student at this level not only has acquired the behaviors at all previous levels but also has integrated his or her values into a system representing a complete and pervasive philosophy that never allows expressions that are out of character with these values. Evaluations of this level of behavior involve the extent to which the learner has developed a consistent philosophy of life.

Avoid
Display
Exhibit
Internalize
Manage
Require
Resist
Resolve
Revise

INSTRUCTIONAL METHOD	TYPE OF OBJECTIVE	ADVANTAGES	DISADVANTAGES	SHOWCASE / DISCUSSION
Readings	Cognitive: knowledge	Low cost; little preparation; fund of knowledge	Passive learning; learners motivated	Journal Club
Lectures	Cognitive: knowledge	Low cost; large number of learners; structured presentations	Passive learning; teacher centered; quality depends on teacher	Lecture or seminar series
Discussion	Affective	Active learning, assess learner; apply new knowledge	More faculty needed; facilitator/group dependent; cognitive experience needed	Patient case conference Morbidity and Mortality conference
Problem-based Learning	Cognitive: problem solving	Active learning; facilitate higher cognitive objectives	Developmental costs; requires faculty facilitators; less efficient	PBL sessions
Programmer Learning	Cognitive: knowledge	Active learning; Safe simulators; immediate feedback; apply new knowledge	Developmental costs; computer access required	American Board on IM Online Modules
Learning Projects	Cognitive: knowledge and problem solving	Active learning; Self-directed learning; suitable for higher-order cognitive objectives	Learners need motivation and basic skills; effective faculty mentors	Masters in education programs
Role Models	Psychomotor: behavior or performance and affective	Faculty availability; impact most profound	Require valid evaluation process; impact depends on interaction	Observation of faculty during patient care (e.g. family meetings)

INSTRUCTIONAL METHOD	TYPE OF OBJECTIVE	ADVANTAGES	DISADVANTAGES	SHOWCASE / DISCUSSION
Demonstration	Psychomotor: skills/behavior or performance	Efficient method for demonstration purposes	Passive learning; teacher centered	Physical Diagnosis Course exams; Geriatric Assessment
Artificial models	Psychomotor: skills	Safe environment to practice skills; learners are at own pace	May not be available for specific curriculum; expensive	Simulators
Role Plays	Psychomotor: skills	Suitable for crossing domains (Knowledge, Skills, Attitudes); Learner-centered; efficient; can be learner centered	Require trained faculty facilitators; learners need some basic knowledge or skills	EPEC Courses
Standardized Patients	Psychomotor: skills	Ensure appropriate clinical material; approx. real life; safe environment; can give immediate feedback	Cost; requires expertise to develop and train SPs	SP scenarios in sources emphasizing communication skills (e.g. breaking bad news)
Clinical experiences	Psychomotor: skills	"Real Life"; promote learner motivation, promote higher-level cognition	Require clinical material when learner ready; require faculty to supervise and feedback; require reflection	Clinical rotations in inpatient or outpatient
A/V seminar	Psychomotor: skills	Provide accurate feedback on performance; can self-assess	Required trained faculty/facilitators; videotaping can be awkward; require pt permission	SP scenarios in courses emphasizing communication skills (e.g. breaking bad news)
Group Learning	Cognitive: problem solving	Active learning; Resources usually available; Allows multidiscipline approach Suitable for PBL	Groups should have some training in group process; may require faculty training	Masters in education programs
Behavioral/environmental interventions	Psychomotor: Behavior or Performance	Influence performance	Assume competence; require control over learners' real life environ	Mini-CEX; precepting in wards or outpatient settings

STEP 5: Implementation Checklist*

Identify Resources

- ____ Personnel: faculty, secretarial and other support staff, patients, other
- ____ Time: faculty, support staff, learners
- ____ Facilities: space, equipment, clinical sites
- ____ Funding/Costs: direct financial costs, hidden or opportunity costs

Obtain Support

____ Internal

- From: those with administrative authority (dean's office, hospital administration, department chair, program director, division director, etc.) faculty, learners, other stakeholders
- For: personnel, resources, political support

____ External

- From: government, professional societies, philanthropic organizations or foundations, other entities (e.g., managed care organizations), individual donors
- For: funding, political support, curricular or faculty development resources

Develop administrative mechanisms to support the curriculum

____ Administrative structure: to delineate responsibilities and decision making

____ Communication

- Content: rationale; goals and objectives; information about the curriculum, learners, faculty, facilities and equipment, scheduling; changes in the curriculum; evaluation results; etc.
- Mechanisms: memos, meeting, syllabus materials, site visits, reports, etc.

____ Operations: preparation and distribution of schedules and curricular materials; collection, collation, and distribution of evaluation data; curricular revisions and changes, etc.

Anticipate and address barriers

____ Financial and other resources

____ Competing demands

____ People: attitudes, job/role security, power and authority, etc

Plan to introduce the curriculum

____ Pilot

____ Phase-In

____ Full Implementation

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