

# Curriculum Development and Evaluation Guide

## Creating Endurable Change: How to Develop Medical Education Curricula

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Nicole Paradise Black, MD, MEd, University of Florida  
Rebecca Blankenburg, MD, MPH, Stanford University  
Cynthia Ferrell, MD, MEd, Oregon Health & Science University  
H. Barrett Fromme, MD, MHPE, University of Chicago  
Christine Skurkis, MD, University of Connecticut

*Please use this handout as a summary of Kern's steps and an active workbook for your own curricular development*

Adapted with permission,  
from J. Farnan & N. Schindler @ Pritzker School of Medicine

## Kern's Six-Step Approach<sup>1</sup>:

1. Problem Identification and General Needs Assessment
2. Needs Assessment of Targeted Learners
3. Goals and Objectives
4. Educational Strategies
5. Implementation
6. Evaluation and Feedback

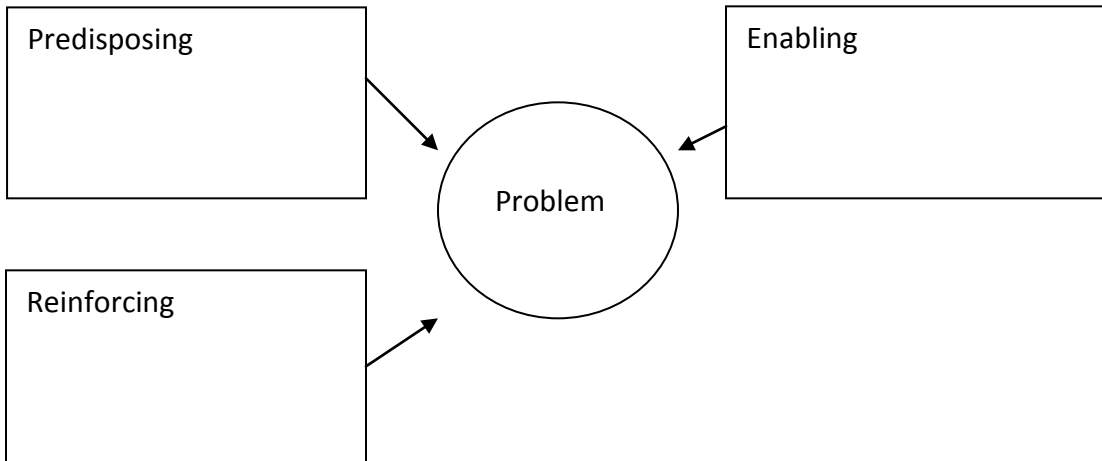
<sup>1</sup> Kern, David E. and Patricia A. Thomas, Donna M. Howard, Eric B. Bass. Curriculum Development For Medical Education: A Six-Step Approach. Johns Hopkins University Press: Baltimore and London, 2006.

## Step 1: Problem Identification and General Needs Assessment

What is the problem (in form of question)?

Consider whom and what it affects?  
What is the IMPACT of these effects?

F  
A  
C  
T  
O  
R  
S



Current Approach	Ideal Approach

## Step 2: Needs Assessment of Targeted Learners

*Identify* target audience

Who are the stakeholders?

Stakeholder	Role/How impacted by problem?

What information do you need from them?

Stakeholder	Relevant information

How will you obtain the information?

Stakeholder	Method for Assessment	Resources Required

**RIGOROUS TARGETED NEEDS ASSESSMENT  
= OPPORTUNITY FOR SCHOLARSHIP**

### Step 3: Goals and Objectives

Consider and construct overall educational goal:

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List *specific measurable* learning objectives:

Level of Learner (individual vs. program) <b>“who”</b>	Type of Objective (learner, process, outcome)	Will do <b>how much/how well of what?</b>	By <b>when?</b>

Bloom’s Category	Key words/Verbs
Knowledge	defines, describes, identifies, knows, labels, lists, names, outlines, recalls, recognizes, reproduces, states
Comprehension	comprehends, converts, defends, distinguishes, estimates, explains, , generalizes, interprets, paraphrases, predicts, summarizes, translates
Application	applies, changes, constructs, demonstrates, discovers, manipulates, modifies, operates, prepares, produces, relates, shows, solves, uses
Analysis	analyzes, compares, contrasts, diagrams, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates
Synthesis	categorizes, combines, compiles, composes, creates, designs, generates, modifies, organizes, plans, reconstructs, reorganizes, revises, summarizes,
Evaluation	appraises, compares, concludes, contrasts, critiques, defends, discriminates, evaluates, interprets, justifies, relates, summarizes, supports

## Step 4: Educational Strategies

Create 1-2 Educational Strategies:

Consider congruence between learning objectives and methods, the use multiple instructional methods, learner-centered environment and feasibility based on resources

Type of Objective	Specific Learning Objective	Educational Strategies	Resources required?

Plan for prevention of decay?

## Step 5: Implementation

FIRST! Consider support for curriculum? Whose buy-in is required prior to implementation?

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### Identification of Resources:

Resource	Existing?	Additional needs?
Personnel: Teaching support- Administration-		
Time		
Space		
Funding/Costs		
Other:		

## Step 5: Implementation

Possible sources of support?

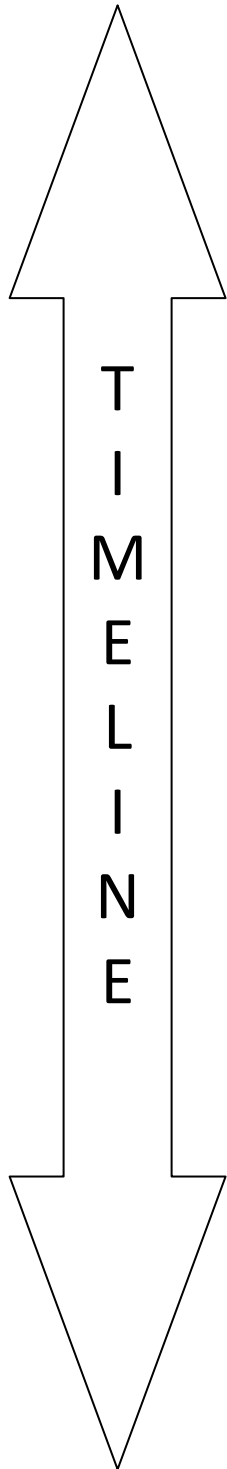
Internal funding sources?	External funding sources?

Recognizing and Planning for Barriers:

Resource	Barrier?	Potential solution?
Personnel: Teaching support- Administration-		
Time		
Space		
Funding/Costs		
Other:		



## Step 5: Implementation



PILOT:

PHASE IN:

FULL IMPLEMENTATION:

## Step 6: Evaluation and Feedback

Consider the USE for the evaluation and identify the users:

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Formative vs. Summative evaluation:

	Summative	Formative
Individual learner		
Programmatic evaluation		

Data Collection:

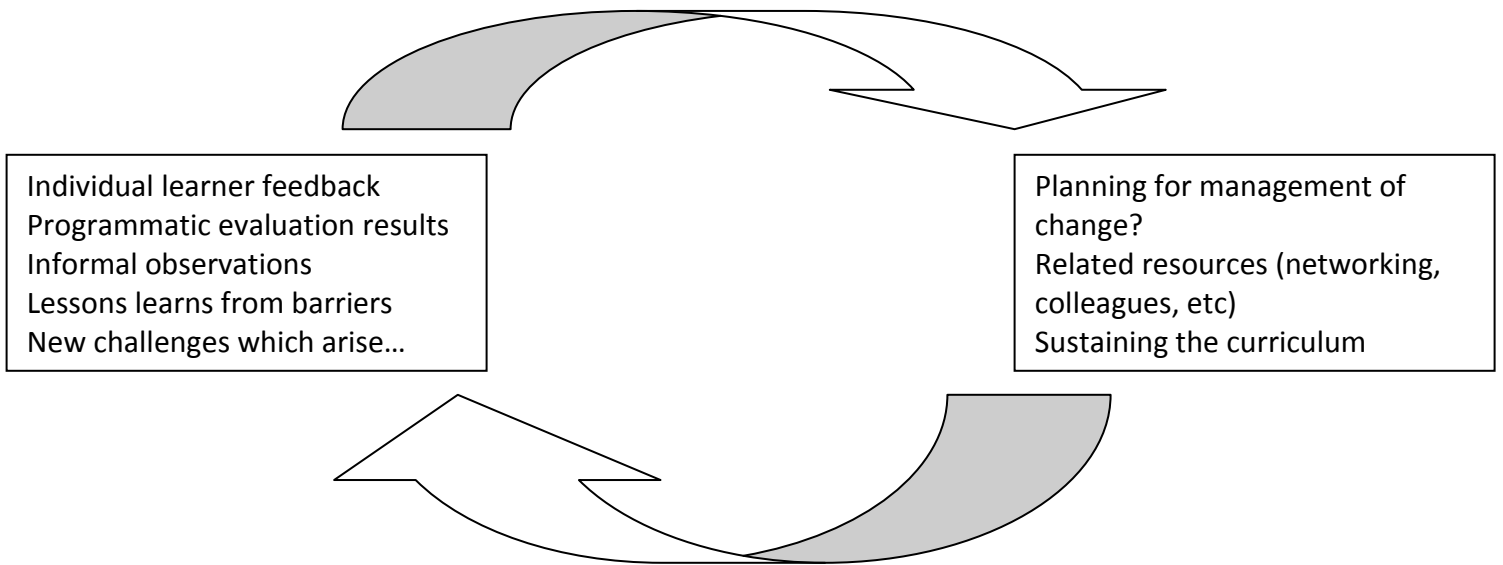
	Type of evaluation/Methods	Resources required
Individual learner		
Programmatic evaluation		

### Kirkpatrick's Levels of Evaluation

Level	Outcome
1	Reaction – was the learner satisfied with the curriculum
2A	Learning – change in attitudes
2B	Learning – modification of knowledge or skills
3	Behavior – changes in behavior
4A	Results – change in system or organizational practice
4B	Results – change among the participants' and peers

***RIGOROUS EVALUATION = OPPORTUNITY FOR SCHOLARSHIP***

## Curriculum Maintenance and Dissemination



Dissemination= Opportunity for Scholarship!

*WHAT* can be disseminated? Parts or the whole?

- ⇒ Needs assessment, general and targeted
- ⇒ Educational strategies
- ⇒ Evaluation (individual and programmatic) results
- ⇒ The curriculum as a “package”

*WHERE* can it be disseminated?

- ⇒ Internal presenting opportunities
- ⇒ Educational innovations or abstracts for regional and national meetings (e.g., APPD, PAS, PHM, etc)
- ⇒ Creation of multi-institution interest group regarding topic in question addressed by curriculum
- ⇒ Social networking
- ⇒ Educational clearinghouses, repositories (e.g., AAMC MedEd PORTAL)
- ⇒ Formal publication

## Curriculum Development Worksheet

<p><b><u>Problem Identification</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> What is the problem?</li> <li><input type="checkbox"/> Who does it affect?</li> </ul>	<p><b><u>General Needs Assessment</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Lit Search</li> <li><input type="checkbox"/> Other resources?</li> </ul>	<p><b><u>Targeted Needs Assessment</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Formal needs assessment?</li> <li><input type="checkbox"/> Informal needs assessment?</li> <li><input type="checkbox"/> What baseline data do I need or have?</li> </ul>	<p><b><u>Goal(s)</u></b></p>
<p><b><u>Learning Objectives</u></b> (Bloom's Taxonomy)</p>		<p><b><u>Educational Strategies</u></b> (Miller's Pyramid)</p>	
<p>1.</p>			
<p>2.</p>			
<p>3.</p>			
<p><b><u>Implementation</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Collaborators?</li> <li><input type="checkbox"/> Resources?</li> <li><input type="checkbox"/> Skills? Faculty Development?</li> <li><input type="checkbox"/> Barriers?</li> </ul>	<p><b><u>Program Evaluation</u></b> (Kirkpatrick's Outcomes)</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Learner Assessment?</li> <li><input type="checkbox"/> Program Evaluation?</li> </ul>		
<p><b><u>Scholarship</u></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Do I need IRB approval for this project?</li> <li><input type="checkbox"/> Am I systematically documenting the development process?</li> <li><input type="checkbox"/> Are my objectives, methods, and evaluation outcomes in-line?</li> <li><input type="checkbox"/> How will I share or disseminate my project?</li> </ul>			