This is the published version:


Available from Deakin Research Online: http://hdl.handle.net/10536/DRO/DU:30022176

Every reasonable effort has been made to ensure that permission has been obtained for items included in DRO. If you believe that your rights have been infringed by this repository, please contact drosupport@deakin.edu.au

Copyright: 2007, ANAPHI
A matrix approach to curriculum review and development

C Bennett

ANAPHI T&L Forum
Sept 2007
Outline

Context
Challenge
Epidemiology Curriculum Review
Matrix
The Graduate Attributes

- academically excellent
- knowledgeable across disciplines
- leaders in communities
- attuned to cultural diversity
- equipped to become active global citizens
“opportunities for international experience and greater engagement with industry and the community through activities such as work placements, internships, online study opportunities with offshore institutions, study abroad and exchange programs”
Delivering Graduate Attributes

- Curriculum
- Knowledge centred
- Multidisciplinary
- **What** we teach
- Subject Outlines (linear)
- Tokenism

- Experience
- Competency-based
- Interdisciplinary
- **How** we teach
- Matrix (multidimensional)
- Embedded
### Curriculum Matrix – eg 1

<table>
<thead>
<tr>
<th>Content Headings</th>
<th>Learning Objectives</th>
<th>Key Skills</th>
<th>Mapped to Assessment Task</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WEEK 1 (4 contact hours each wk)</strong></td>
<td><strong>Course/Stream Level:</strong> To outline the overall objectives of this subject and the subjects that comprise the core of the stream/course, and the timetable, teaching/assessment strategies, articulation between subjects etc. <strong>This session: Primary</strong> To understand the: <strong>Secondary</strong> To be introduced to:</td>
<td><strong>Practicum</strong></td>
<td><strong>Assessment</strong> (Assignment handed out at start of subject, due week 9 of semester – inc Easter break)</td>
</tr>
<tr>
<td>1. Intro/causation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Epi is…</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Exemplar guest lecture (Terry Dwyer &amp; SIDS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. An Epidemiologist is… (input from epidemiological practitioners, potential employers (ie MEpi T&amp;L Advisory Group))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Introduction to quantitative &amp; qualitative approaches in health research</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Descriptive Vs Analytic Studies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Association Vs Causation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Causal inference</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ref Webb Ch1; Sterne Ch 2/3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Course/Stream Level:**
  - Understand context and relevance of subject & course/stream content (research, clinical practice, workplace etc)
  - Establish realistic expectations of subject, and a framework for acquiring and applying epidemiological theory and skills in practice
  - Discuss different methodological approaches with a basic understanding of when and where different approaches are of most use/validity
  - Apply component causal framework (Rothman) to a complex disease process

- **Primary**
  - definition of epidemiology
  - place of epidemiology in health research and public health practice
  - principles of epidemiology

- **Secondary**
  - the application of epi & am theory & skills in research design, conduct and appraisal
  - the basic principles of disease causation and causal inference
  - the value of descriptive and analytic studies
  - become familiar with the language and terminology used in epidemiology

- **Take Home Task:**
  - Understand context and relevance of subject and course/stream aims
  - Small group work to explore and apply the concepts and frameworks used to investigate disease causation, and discuss the strengths and limitations of different research approaches
  - Note - there is no computer-based component in this week

- **Assessment**
  - Demonstrated contextualised understanding of the contribution of quantitative epidemiology
  - Demonstrated understanding of the complexity of disease causation
  - Ability to apply a component cause framework to describe and understand disease causation
### Curriculum Matrix – eg 2

<table>
<thead>
<tr>
<th>Content Headings</th>
<th>Learning Objectives - theory</th>
<th>Learning Objectives - skills</th>
<th>Practical Elements and Assessment Task(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: Screening and diagnostic testing</td>
<td><strong>Primary</strong></td>
<td><strong>Secondary</strong></td>
<td>Practicum</td>
</tr>
<tr>
<td>a. Rationale for establishing screening programs and selecting diagnostic tests</td>
<td>To understand:</td>
<td>• how to critically appraise study designs</td>
<td>Computer lab session on ROC curve analysis (related to day 1)</td>
</tr>
<tr>
<td>b. Interpretation and computation of estimates used to evaluate screening and diagnostic test</td>
<td>• Design, potential sources of biases and analytical techniques in studies related to screening and diagnostic testing</td>
<td>• Acquire and demonstrate skills to critically appraise study designs</td>
<td>CL assessment to be handed in week 2 of the course (20%)</td>
</tr>
<tr>
<td>c. Design and methodology in evaluation of screening and diagnostic tests</td>
<td>• Rationale mechanisms and success of a screening program</td>
<td>• Acquire and demonstrate skills to critically appraise study designs</td>
<td>• Demonstrated understanding of computing and interpreting relevant estimates</td>
</tr>
<tr>
<td></td>
<td>• Relevance of these tests at individual and population levels.</td>
<td></td>
<td>Designing a study assignment (handed in 3 weeks &gt; block)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Demonstrated contextualised understanding of designing a study</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Day 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1: Developing a study design</td>
<td><strong>Primary</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Components of study design &amp; process of developing a design</td>
<td>To understand:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Developing a research question and identifying the most suitable study design</td>
<td>• the process of developing a study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Developing study protocol</td>
<td>• the structure and the elements of a study proposal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Secondary</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• how to critically appraise study designs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Learning Outcomes

- Advisory Group
- Engineering concept and skill synthesis into curriculum
  - Assessment
  - Induction (language, orientation)
  - Capstone (synthesis, application)
- Importance of Idea Dominance
- Matrix
  - Teaching & Learning Processes
  - Subject Development, Review, Articulation
  - Captures student and teacher experience
- Challenge → Advantage