Problem/Project/Inquiry-Based Learning Approach to Clinical Science Training

(Note: Problem-based, project-based, and inquiry-based approaches share many features (e.g., they are all student-centered and emphasize critical thinking and problem solving), but differ in the degree and manner in which the instructor controls/directs the learning process. Below we use the term project-based, though in some respects our descriptions may more closely resemble an inquiry-based approach. We wish to emphasize that clinical programs can choose for themselves how exactly to develop and implement the sort of approach described in this document)

Goals and Description

How does a project-based learning approach work?

- Students are given a project, in the form of a question to be answered
- Students, with guidance from faculty (and whatever other resources faculty wish to provide, including access to other faculty and other experts), spend the duration of the project/course attempting to answer the question, producing a product (or products) specified by faculty

What do we want students to learn from a project-based approach?

- Process skills
    - Problem solving
    - Critical thinking
    - Collaboration (with classmates and also faculty; also across disciplines)
    - Creativity
    - Learn how to learn (e.g., lit search, ask right experts)
- Content
    - Knowledge
        - Scholarly (e.g., knowing the scientific literature)
        - Local (e.g., idiosyncratic presentation of phenomena in geographical/cultural area)
    - Application (if desired; e.g., can develop and deliver an intervention as part of the project)

- Potential Content Areas:
    - Assessment
    - Psychopathology –e.g. neuroscience, genetics, classification
    - Intervention (broadly defined- generation, mechanisms, theory, efficacy, effectiveness, implementation, dissemination, transportability, translation)
    - Prevention and MH promotion
    - Ethics
    - Diversity

- Development/lifespan
- Methods
- Public heath (e.g. science to service gap)
- Social and organizational systems

What are some of the potential advantages and disadvantages of a project-based approach?

- Advantages:
  - Integrates levels
  - Emphasizes creativity and problem solving
  - Emphasizes collaboration
  - Increased retention

- Disadvantages
  - Focus of education may be considered too narrow (depth greater than breadth)
  - Will students be marketable for internship?

What are some qualities of good questions around which to build a project-based learning course?

- No slam dunk answer
- Will lead students to a broad range of material (e.g., both basic and applied, across the full range of clinical psychology, and even across disciplines)
- Will lead students outside the ivory tower (this is especially valuable for obtaining knowledge/experience regarding effectiveness, implementation, and dissemination; it is also valuable for teaching students how to obtain local knowledge and for exposing students to clinical phenomena in the settings in which they will most often be seen)

What are some sample questions that can be used for a project-based learning course?
- How could we reduce the public health burden of depression*?*
- How could we enhance MH promotion in underserved areas?
- How could we change behavior*?*
- How could we reduce the number of work days lost due to MH disorders?
- How could we use technology to reduce MH problems?

What are some possible "products" that students could create from a project-based approach (and which could be used to evaluate students)?
- Reading list
- Presentation to local MH center
- Comprehensive case presentation
- Grant proposal
- Public policy brief

- Review paper
- Treatment manual

(Note: these products can be produced by individual students and/or by groups of students; the expectation is that much of the project would be done by the group; the products should match the length/intensity of the course – for example, one would expect more extensive products for a year-long course than for a semester-long course)

Implementation

What are some of the ways that programs could implement a project-based learning model?

- Supplement an existing course
- Replace a brown bag
- Replace a multi-professor seminar (e.g., in which each professor teaches for a week or two on the topic of their expertise)
- Replace a typical seminar
- Replace a core content course (e.g., assessment, ethics, diversity, intervention)
- Replace a practicum (especially if the course includes an applied component)
- Replace an entire set of "core" courses
- Can replace something like qualifying or preliminary exams (in other words, it does not need to be (or replace) a course)

What are some of the supports that would be valuable to have set up prior to the beginning of a project-based learning course?

- Faculty involvement
  - Need to identify multiple faculty members who are experts in the various areas relevant to the project
  - It would be valuable to obtain guest speakers/consultants from outside areas (e.g., epidemiology, social marketing)
- Find community partners (e.g., administrators/staff from a local mental health center) and permission/opportunities to enter settings outside of the ivory tower