A Collaborative Assessment Process for Sustained Curriculum Improvement in Natural Resources and Environmental Management

Susan E. Crow, Creighton M. Litton, Kirsten L.L. Oleson, Mehana Vaughan
Natural Resources and Environmental Management (NREM) Department, College of Tropical Agriculture and Human Resources

Introduction to NREM
The graduate degree program in the Department of Natural Resources and Environmental Management (NREM) consists of a Ph.D. and three M.S. degree programs, and enrollment increased steadily over its 15 year history. Graduate program assessment began in 2012 with a survey of current students and alumni that identified critical areas for improvement. The next 5 years have been a collaborative journey utilizing various facilitative processes to identify areas for improvement and implement solutions.

Objectives
- Address fundamental and critical questions:
  - Q1: Are NREM graduate degree program student learning outcomes (SLOs) aligned?
  - Q2: Do current grad core & elective courses adequately address program SLOs?
  - Q3: If current courses do not adequately cover the existing SLOs, how can they be modified to do so?

Methods
The NREM Curriculum Committee gathered answers through multiple, collaborative activities inclusive of both graduate students and faculty. In total, the assessment process and implementation included input collected during departmental faculty meetings, faculty and student meetings, collaborative Google documents, faculty workshops, and departmental retreats.

Timeline and key collaborative moments in the journey

- Phase I 2012-2013 Identification of need and initial assessment activities
  - A fundamental problem was realized – A graduate student survey revealed the current core curriculum was not meeting their needs (Fig. 1 left), particularly within the M.S. Plan B program intended to educate and train future professionals (Fig. 1 right).

- Phase II 2014-2015 Develop interdisciplinary conceptual model/diagram to guide revised curriculum efforts
  - Initial assessment activities revealed that our new departmental SLOs covered interdisciplinary approaches to NREM and current courses on curriculum map did not deliver.

- Phase III 2016-2017 Implementation of the revised, core course
  - Revised course was implemented in phases, co-instructed by natural and social science faculty to provide a common foundation of knowledge across the breadth of NREM disciplines, fundamental interdisciplinary approaches in social-ecological systems analysis, and professional skills.

Conclusions
We offer these suggestions for other programs to utilize a facilitated collaborative process to move program assessment forward:

- Critical activities undertaken in workshops at annual retreats that colleagues stationed on neighbor islands attended; remote participation during faculty meetings; one-on-one conversations in person or on phone; small group feedback sessions.
- Stay very organized by planning facilitaded sessions and structured meeting activities; regularly provide reminders of the history of the process and key decisions (made by vote) to avoid backtrack.
- Dedicated, tenacious team that reaches out for help/feedback when needed in a way that respected individual preferences for interaction.

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