Assessment of Institutionalization Map (AIM)

Yao Hill (Office for Institutional Effectiveness)
Judith Kirkpatrick (I-Cubed Project Coordinator)

The Assessment of Institutionalization Map (AIM) provides information on the level of institutionalization of the STEM program at Kapi`olani Community College. In February 2009, out of 424 employees, a total of 188 participants replied to the online survey, a 44% response rate, amounting to 36% of the campus employees.

Background: Developing the Institutionalization Rubric for Survey Use

Dr. Tanya Renner, Professor of Psychology, Kapiolani Community College, originally participated in the development of an Institutionalization Rubric designed to baseline and strengthen the degree to which Service-Learning, as an innovation in undergraduate education, was integrated into: a. campus mission, strategic planning, and other educational reforms; b. faculty, staff, student, and institutional support; c. curricular, co-curricular and partnership development. The Service-Learning Institutionalization Rubric was developed and published by Dr. Andrew Furco in 1999 (U.C. Berkeley). Since 2000, the College has used this rubric for 3-year tactical planning for improvements in its Service-Learning Emphasis. National Campus Compact used this rubric as the basis for research on institutional civic engagement in two-year colleges (Zlotkowski, Franco, et al 2004) and minority-serving institutions (Zlotkowksi, Jones, et al 2005). The Rubric also informs the "Community Engagement" classification system of the Carnegie Foundation for the Advancement of Teaching (2006-present).

In 2001, with permission, Kapiolani Community College adapted the Rubric to baseline and improve the degree to which International Education, as an innovation in undergraduate education, was integrated into a-c above. The Rubric was used twice with focus groups of 40-50 campus stakeholders and combined with an external review by evaluators from the American Council on Education (ACE), to design an institutionalization plan for the College's "Integrated International Education and Globalization" (IIEG) program. The IIEG program is featured in the ACE Publication, *Promising Practices: Spotlighting Excellence in Comprehensive Internationalization* (Franco and Richards, 2002) and the Jossey-Bass Publication, *International Reform Efforts and Challenges in the Community Colleges* (Franco and Richards, 2007).

In 2008, in its "Innovation through Institutional Integration" proposal to the National Science Foundation, the College stated its intention to use the Institutionalization Rubric, now called the "Assessing Institutionalization Map" (AIM) to baseline and improve the degree to which STEM Education, as an innovation in undergraduate education, was integrated into a-c above. In January 2009, AIM was adapted from a large focus group methodology to a broad, institutional, online survey. Professor Judith Kirkpatrick and Dr. John Rand refined the factors to reflect the STEM program and its status on campus, facilitated electronic distribution, and collaborated on subsequent analysis with the College's IR staff. The first electronic survey was administered in February 2009. After assessing the success of the AIM in survey form and improving it, the survey will be administered again in 2011 and 2013. We encourage the adaptation of the AIM for STEM in other institutional contexts and request only that its use and effectiveness be reported to the Kapiolani Institutional Research Office (irokcc@hawaii.edu) so that we might collaboratively develop an improved version.

The instrument

The online AIM-STEM 26 item survey assesses the knowledge of the respondents on various aspects of the STEM program and how the respondents identify the degree of institutionalization of the STEM program.

For each survey item, respondents choose one out of four options: 0 to 3.

0=no knowledge on the particular aspect,
1=building critical mass,
2= building quality,
3=institutionalized.

Six aspects of STEM institutionalization were covered:

1. philosophy and mission, items 1-4;
2. faculty and staff support, items 5-8;
3. student support, items 9-12;
4. partnership, items, 13-17;
5. institutional support, items 18-23;
6. curriculum and activities, items 24-26.

Also, five demographic questions ask respondents to identify their primary role at campus, full-time or part-time status, length of employment, primary program for teaching faculty and staff and primary duty for support faculty and staff.

Preliminary Conclusions

The AIM-STEM survey provides a benchmark at the beginning of the NSF I-Cubed grant that measures the institutionalization of the STEM programs at the College. The survey is a satisfactory tool to evaluate the institutionalization of the STEM program. Results show a high level of reliability and its convergent and divergent validity was supported by the preliminary investigation using principle components analysis.
The main points of the results are:

1. The College overall was at very low level of institutionalization of the STEM program. None of the six aspects investigated reached building quality stage (level 2).
2. Partnership, curriculum and activities, and student support areas were below building critical mass stage (level 1). Specific elements of these areas should be the focus of future tactical planning.
3. Staff, part-time employees, employees in their first year, Culinary/Hospitality and Business/Legal education scored lower on most or all items on the survey. However, these differences were not statistically significant and firm conclusions **should not** be drawn about these differences. This implies that STEM planning may want to use this information to publicize STEM to those sub-groups, but by no means, should the results be used for evaluative purposes.

We have no knowledge on why 57% of the participants did not respond to the survey though they were requested to take it by Chancellor Richards. Thus, there is a potential sampling bias, so the survey result should be used as one source of information among many. The following issues should also be considered when developing strategies to improve institutionalization of the STEM program:

1. effect (How easy it is to see improvement)
2. feasibility (How easy it is to carry out)
3. cost (How inexpensive it can be)
4. impact (How wide the scope the influence is).