

Program Review and Assessment Committee

Thursday, September 08, 2005

University Library, UL 1126

1:30-3:00 p.m.

Karen Johnson, Chair

Joshua Smith, Interim Vice Chair

AGENDA -

1. Approval of May 12, 2005 Minutes K. Johnson
2. Introduction of New Members K. Johnson
3. Election of Vice Chair K. Johnson
4. Review of Faculty Council Discussion of PUL Revisions K. Johnson
5. Discussion of Responses to Questionnaire Designed to Evaluate PRAC T. Banta
(completed by PRAC members in May 2005)
6. Article Written for /by Trudy Banta T. Banta
(information item only)
7. Adjournment K. Johnson

MINUTES -

Members Present: W. Agbor-Baiyee, R. Applegate, K. Baird, T. Banta, K. Black, D. Boland, J. Brown, K. Busby, J. Fulton, A. Gavrin, K. Johnson, S. Kahn, H. Kim, J. Mac Kinnon, A. Martin, H. Mzumara, W. Potter, I. Queiro-Tajalli, I. Ritchie, K. Schilling, J. Smith, C. Souch, J. Thompson, R. Vertner, G. Whitchurch, D. Winikates, C. Yokomoto, N. Young

Minutes of the May 12, 2005 meeting were approved.

Introductions: Committee members introduced themselves. New members attending the meeting included: Janet Fulton, School of Nursing; Hea-Won Kim, School of Social Work; Allison Martin, School of Law; William Potter, Herron School of Art and Design; and Joe Thompson, School of Science.

Election of Vice Chair: K. Johnson explained that, in order to return to the normal PRAC election cycle, the committee would elect an Interim Vice Chair now and a permanent one in January. Josh Smith, School of Education, was elected by unanimous vote.

Review of Faculty Council Discussion of PUL Revisions: Johnson summarized the presentation and discussion of the proposed revisions to the Principles of Undergraduate Learning (PULs) at the September 6 Faculty Council Meeting. At that meeting, Betty Jones, recent member of PRAC and current Chair of the Faculty Council Academic Affairs Committee, explained the rationale for the proposed changes; they are intended to make the PULs more readable and understandable for the general reader

(and students, in particular), to update some of the language, and to remedy what some perceive as omissions in the original version of the PULs approved in 1998. For example, in the revision visual and aural literacy were added to “Core Communication and Quantitative Skills,” PUL 1.

Concerns expressed at the meeting included: a need to make it clearer that particular PULs will be more relevant to some disciplines than others; a need to include in the PUL language the idea that competence in the PULs develops over time; and an objection to including ethics and aesthetics in the same PUL. Also discussed was the importance of disseminating and clarifying the PULs for faculty and staff who are not familiar with their history. The Academic Affairs Committee will gather additional input and bring a revised proposal back to the full Faculty Council at a later date.

In the course of a lively discussion, PRAC members agreed that while some who were involved with developing the proposed revisions would like to see this process progress more quickly, it is heartening that faculty leaders feel that the issue is important and worthy of serious discussion and consideration. Faculty Council members need to consider that faculty members in each department and program must do the work of articulating how the PULs apply in their disciplinary contexts. At the same time, the process has revealed widespread lack of understanding of the PULs as well as some ambiguity about the role of PRAC, which is perceived differently by different groups. It might be helpful for PRAC members to discuss the proposed revisions with the Faculty Council Representatives in their schools.

PRAC Evaluation: At the May PRAC meeting, members were asked to complete a questionnaire about the usefulness of PRAC to them, its size, representation, and focuses, and perceptions of PRAC among their colleagues. T. Banta distributed a summary of the responses, noting that members were generally satisfied that PRAC was fulfilling its purpose and included the “right” representation. Members were less satisfied with the size of the committee—some thought it too large—and with awareness of PRAC in their schools. In the ensuing discussion, members suggested several actions that might increase awareness of PRAC’s work and enhance its usefulness to the campus:

- Members can explore within their own schools the kinds of help PRAC might most usefully provide.
- We might make use of campus media like *Inside IUPUI* to spread the word about PRAC.
- We might develop products that help units with assessment and with development of the annual PRAC report. Some faculty members lack a basic understanding of assessment and don’t know where to start or what questions to ask. An assessment “toolkit” geared to the needs of faculty new to assessment could be extremely helpful.
- Over the course of this year, each school could provide a good practice idea, describing what it is, why it is important, and how it is helping the school to improve. If we collect two of these ideas at each monthly meeting, by the end of the year we will have a toolkit, which could provide the basis for a Web page that links to assessment resources and campus experts.

Members also discussed the issue of whether PRAC should address undergraduate education only or continue to address both graduate and undergraduate education.

Because of the strong focus on the PULs recently, some members perceive PRAC as primarily concerned with undergraduate education. Other members pointed out that the committee is concerned with assessment and program review more broadly and that these cut across undergraduate and graduate education.

Banta noted that PRAC has emphasized assessment of undergraduate learning in an effort to stimulate the development of assessment programs at some level and then spread those programs to other levels. Nonetheless, some graduate programs at IUPUI are engaged in sophisticated assessment approaches, particularly professional programs that emphasize competence-based assessment. Smith added that professional accreditors are beginning to go beyond the “database” approach—tracking the percentage of students who pass licensure examinations, for example—and asking for products of student work that serve as evidence that students are prepared to enter the top tiers of their fields. C. Souch commented that non-professional schools need to think of assessment comprehensively—not just as an end-of-year report—and asked whether PRAC could extend its focus to assessment of research and civic engagement.

Banta agreed that as we pursue the suggestions made over the course of the discussion, we can bring in guest speakers and ask committee members to invite interested colleagues to attend those presentations. A number of members also expressed an interest in revisiting program review, beyond the periodic reports we’ve had on the outcomes of specific reviews.

Banta wrapped up the meeting by inviting members to register free for the Assessment Institute on October 23-25 and to register through PAII for one of two presentations on September 12 and 13 on the StudyTRAX system, a Web-based assessment tracking system. She drew the group’s attention to an interview with her published in *BizEd*, an AACSB periodical, and asked for members to e-mail comments to her.

Johnson adjourned the meeting at 3:00.

Program Review and Assessment Committee

Thursday, October 06, 2005

University Library, UL 1126

1:30-3:00 p.m.

Karen Johnson, Chair

Joshua Smith, Interim Vice Chair

AGENDA -

1. Approval of September Minutes K. Johnson
2. Update on the progress of the PUL revisions..... K. Johnson
3. Discussion of issues regarding the PULs..... T. Banta and K. Johnson
4. Discussion of Program Review issues T. Banta
 - PRAC's role in Program Review
 - Program Review Guidelines
5. PRAC and Faculty Involvement K. Johnson
 - Reporting Template Project J. Mac Kinnon and T. Banta
 - PRAC projects to assist faculty K. Johnson
6. PRAC Subcommittees K. Johnson
 - General Discussion of Subcommittee Charges
 - Establishment of Subcommittee Membership
7. Short Subcommittee Meetings
8. Adjournment..... K. Johnson

MINUTES -

Members Present: D. Appleby, R. Applegate, K. Baird, T. Banta, K. Black, P. Boruff-Jones, K. Busby, J. Chen, Y. Fu, J. Fulton, A. Gavrin, S. Hamilton, M. Hansen, L. Houser, K. Janke, K. Johnson, S. Kahn, J. Mac Kinnon, A. Martin, C. McDaniel, M. Meadows, H. Mzumara, J. Orr, I. Ritchie, C. Souch, J. Thompson, R. Vertner, G. Whitchurch, D. Winikates, and N. Young

Minutes of the September 8, 2005 meeting were approved.

Update on PUL Revisions

K. Johnson reported on the status of efforts to update the PULs. The proposed revisions were presented to the Faculty Council on September 6

http://www.iupui.edu/~fcouncil/documents/proposed_PUL_changes_7-05.htm.

The comments made during that discussion can be found

<http://www.iupui.edu/~fcouncil/minutes/fc050906html.htm>.

The Academic Affairs Committee of Faculty Council is reviewing the September 6 comments, as well as the comments made by faculty at large during the various meetings on revising the PULs last year. The committee plans to bring the proposal back to Faculty Council for a second reading at the November meeting. The proposed changes will be presented side-by-side with the current text of the PULs so that readers can see precisely what the changes are.

Discussion of Issues Regarding the PULs

S. Hamilton announced that she is writing an application for a Hesburgh Award from TIAA-CREF that would recognize IUPUI for creating and implementing the PULs. To address the need to cite specific evidence of impact in the application, she asked PRAC members to provide her or T. Banta with examples of the impact of the PULs on their own teaching or their department's or school's teaching and curriculum. The Kelley School of Business faculty's reconfiguring of its curriculum around Values and Ethics is the sort of example she seeks.

Johnson suggested that we try to foster the idea that the PULs are not fixed for eternity, but rather constantly evolving over time just as IUPUI is; they are our way of talking together about undergraduate education. S. Kahn noted that the faculty Communities of Practice (COPs) on the various PULs support this idea. Hamilton, whose office sponsors the communities, explained that they provide opportunities for scholarship, research, and improvement of one's own teaching and encouraged PRAC members to contact her about joining one. Information about the COPs is available at the Center on Integrating Learning (COIL) Web site (www.opd.iupui.edu/COIL).

Johnson noted that we might consider a presentation on the work of the COPs at a future PRAC meeting. She asked that members let her, Banta, or Hamilton know if they have specific agenda items they would like PRAC to discuss or ideas for language that would provide brief and pithy clarification of particular PULs. Banta added that it is especially important to Herron faculty that the PULs incorporate visual literacy; if Herron representatives to PRAC have ideas about ways of doing this, they should let her know.

Program Review Issues

Banta briefly explained the background for this particular agenda item. IUPUI's program review process has been evolving since 1994, with much support from the deans of SLA and SOS, since these schools generally lack specialized accrediting bodies that evaluate their programs. The original idea behind program review was to further the campus mission and foster collaboration. The composition of program review teams reflects these purposes; the teams include two or three members from other institutions; two IUPUI members, one from the same school as the program under review, the other from a different school; and a community member to strengthen community partnerships. Programs in SLA and SOS undergo full-fledged review every five to seven years.

The purpose of program review, however, is not to serve only programs that lack specialized accrediting bodies or other forms of external review. Other programs have also benefited from some form of program review. For example, the School of Engineering and Technology underwent a full-scale program review one year before its ABET visit; the program review helped the school to prepare for the accreditation review. Other programs have used the process to follow up on recommendations resulting from accreditation visits or to focus on selected initiatives or areas.

Generally, the program review process begins with a meeting among Banta, Bill Plater, and the dean of the school to discuss the focuses and procedures for the review and the composition of the review team. K. Black leads a team that meets with the department to help with planning and to explain what information the Office of Planning and Institutional Improvement (PAII) can provide. Following the review, the department takes about six months to consider which of the team's recommendations to implement;

this is followed by a final meeting among the department chair, the dean, the internal reviewers, Plater, and Banta. Three to four years later, the department chair reports to PRAC on the long-term outcomes and value of the review process. This long-term follow-up is intended to emphasize that the purpose and process of program review go beyond the filing of the final team report. It also provides PRAC and PAII with ideas for improving the program review process. In fact, this year, the Program Review Subcommittee may want to study the entire process and the various recommendations that have been made to improve it.

Johnson suggested that it might be useful to bring together those on campus who have been involved with program reviews at the end of each semester or year to discuss their experiences and possible improvements to the process. Black noted that such meetings might include people scheduled to be involved the following year. Banta added that occasionally units want to do their own reviews, outside the auspices of PRAC and PAII, and that we have a set of written suggestions that offer guidance for such units.

At this point, Johnson departed from the formal agenda to thank D. Appleby for the “astonishing spread” of delectable goodies and gourmet coffee he provided for PRAC members during the meeting.

PRAC and Faculty Involvement

J. Mac Kinnon explained that she consulted on assessment during the summer with the Central University of Technology in South Africa, whose graduate dean is interested in collaborating with IUPUI on a book on best practices in assessment. This might be modeled on Sharon Hamilton’s edited book on *Writing in the Arts, Sciences, and Professional Disciplines*. The articles might follow the template Banta, Black and colleagues used for *Assessment in Practice*, the best-selling book ever done by PAII. (The template is attached.) Apparently, this kind of brief case study is very appealing to people. Banta urged members to think about and to contribute successful assessment strategies used in their schools that might be included in such a volume. Collecting these strategies would also allow PRAC to compile a portfolio of assessment approaches that could be posted with links on the PRAC web site to disseminate and support assessment campus-wide (as discussed at the September meeting).

PRAC Projects to Assist Faculty

Johnson noted that she and Interim Vice Chair J. Smith are planning to make a series of presentations on PRAC and the help it can provide to various groups around the campus. She urged each subcommittee to include something on its agenda for the year about collecting effective assessment strategies for the Web site; the Advanced Practice Subcommittee might take the lead in assembling these.

PRAC Subcommittees

PRAC has added two new subcommittees this year: one on Advanced Practice in assessment, evaluation, and research methods and one on Graduate Issues related to assessment. The Advanced Practice group has already begun meeting informally with a core group of members, but invites additional interested PRAC representatives to join. M. Hansen, one of the initial members of the Advanced Practice Subcommittee, suggested that members who have primary responsibility for assessment practice in their units might be interested in joining. Mac Kinnon, who expressed interest in the Graduate Issues Subcommittee, noted that graduate programs often have different focuses in their assessment and program review than undergraduate programs.

Johnson added that the subcommittee might be of interest to members whose programs prepare students for graduate school, as well as to members teaching in graduate programs.

Kahn, L. Houser, Black, and Hamilton explained the purposes of the Performance Indicators, PRAC Grants, Program Review, and ePort Subcommittees, respectively. Houser reported that the Fall date for submitting PRAC proposals for grants would be extended to the end of October. In response to a question from R. Vertner about whether non-PRAC members could attend or participate in the subcommittees, Banta noted that external participants are welcome and that PRAC members might be interested in joining more than one subcommittee.

The meeting adjourned at 2:40, so that the subcommittees could convene for brief organizing meetings.

Program Review and Assessment Committee

Thursday, November 3, 2005

UL1126

1:30-3:00 p.m.

Karen Johnson, Chair

Joshua Smith, Interim Vice Chair

AGENDA –

1. Approval of October Minutes K. Johnson
2. Program Review ReportCliff Goodwin
3. Reports on Successful Assessment Strategies C. Yokomoto and D. Boland
4. Status of Assessment Template Project J. Mac Kinnon
5. Call for future presentations on Assessment Strategies K. Johnson
6. Brief Reports on the Status of the PULs
 GenEd Discussion at UFC
 PUL Discussion at IFC
7. Subcommittee Update..... K. Johnson
 Grants Subcommittee report L. Houser
 Other?
8. Old Business K. Johnson
9. New Business K. Johnson
10. Adjournment K. Johnson

MINUTES –

Members Present: William Agbor-Baiyee, Drew Appleby, Rachel Applegate, Trudy Banta, Karen Black, Donna Boland, Polly Boruff-Jones, James Brown, Katie Busby, Michael Clippinger, Joseph Defazio, Yao-Yi Fu, Michele Hansen, Amanda Helman, Linda Houser, Karen Johnson, Joyce Mac Kinnon, Allison Martin, Howard Mzumara, Joanne Orr, William Potter, Kenneth Rennels, Katherine Schilling, Joshua Smith, Catherine Souch, Joseph Thompson, Sloane Thompson, Russell Vertner, Gail Whitchurch, Charles Yokomoto, Nancy Young.

Guests Present: Amy Abell, Cliff Goodwin, and Betty Jones.

Minutes of the October 6th meeting were approved without correction.

Program Review Report

Cliff Goodwin, chair of Organizational Leadership & Supervision (OLS), a department in the School of Engineering & Technology, discussed that unit's program review that took place in 1999. He presented the reviewers' recommendations and described how the department had responded. The review has resulted in changing the OLS vision and mission statements, revising the curriculum to define the OLS niche more clearly,

making the chair more active on the Dean's Industrial Advisory Council, creating an OLS advisory council, and motivating faculty to undertake additional assessment and documentation of student learning. Marketing the department more effectively to other departments in the school and on campus is an ongoing process. The department has increased maximum enrollments where appropriate, and faculty continue to work to reduce the percentage of sections taught by associate or part-time faculty. The only suggested change not accomplished is increasing the number of faculty members in the program.

Survey findings indicate that OLS majors are satisfied with their experience (e.g., curriculum, overall experience, value of degree, and strong preparation for employment) and other departments respect the OLS discipline, curricula, and faculty. The department has a team atmosphere and productive faculty members. Courses are delivered in a variety of fashions. Questions from PRAC members were answered by Goodwin. A. Helman asked a question about the next program review for OLS. Goodwin and K. Rennels indicated that the next review will take place within the next two years.

Reports on Successful Assessment Strategies

C. Yokomoto reported on two assessment strategies in his department, Electrical and Computer Engineering. The first was Assessment of the Capstone Design Project, which assesses the abilities of senior students on multiple ABET accreditation criteria, PULs, and internal program goals. The project and assessment strategies emphasize the “teaming” concept, which is integral in his field. He presented how “The Scoring Form” is used. The second strategy was the Problem Solving Assessment, which assesses the extent to which students, aggregated to the class level, meet faculty expectations for each problem. It also provides an opportunity to assess primary course outcomes, secondary course outcomes, and, particularly, progress on the PULs.

D. Boland (School of Nursing) discussed assessing baccalaureate program outcomes. She stated that individual students’ performances are aggregated to the program level. She described nursing accreditation requirements as well as the School mission, goal statements, and program outcomes. The primary tool discussed was an Educational Benchmarking Inc. (EBI) survey. The instrument replaced an in-house measure of student perceptions of their progress in attaining program outcomes. The EBI survey costs less than the in-house instrument to administer and score and provides comparison data for peer institutions. The results provide feedback on program benchmarks and the data are being used to support current grant applications. The presentation ended with a list of assessment hints.

Status on Assessment Template Project

J. MacKinnon encouraged PRAC members to share their successful assessment strategies using the assessment template she and S. Hamilton have developed. The deadline for submitting strategies to Joyce is December, but it could be extended if individuals indicate that they need more time. She encouraged people to provide specific, concrete examples in order to aid others in understanding just what was done and how findings were used. Presenting these strategies will be useful to multiple constituencies, including PRAC members, those who visit the PRAC Web site, and those who will read the anticipated publication of the strategies supported by the Central University of Technology in South Africa.

Call for future presentations on Assessment Strategies

K. Johnson will send an e-mail reminder to generate more presenters.

General Education Discussion by University Faculty Council: We will wait until the next meeting to discuss this topic.

PUL Presentation at Indianapolis Faculty Council: B. Jones discussed the current status of the proposed revision of the PULs. She prepared a document for IFC that has original PULs and revised PULs for side-by-side comparison. She added an

introduction and sections on assessment, implementation, and revision procedures. During the first reading and since, there has been disagreement about titles of PULs as well as wording within particular PULs. She encouraged PRAC members to comment on the current document and share their thoughts with the Faculty Council Academic Affairs Committee (AAC), which must decide whether or not to recommend a second reading (before a vote) on the revisions for the December or January IFC meeting. Goodwin asked if there is evidence that PULs are widely used and understood by faculty. T. Banta shared a brief, but rich, history of implementing and assessing the PULs from 2000 to the present.

Grants Subcommittee Report: In the absence of Subcommittee Chair Houser, who had to leave the meeting early, Banta reported that four grant proposals were submitted by the October 31 deadline and that if all are deemed meritorious, the PRAC grant funds will be exhausted. If one or more are not, then funds could roll into a Spring funding competition.

K. Johnson reminded the members that they can be part of more than one subcommittee.

New Business

Banta shared a booklet published recently by the American Association of Colleges & Universities entitled, **Advancing Liberal Education: Assessment Practices on Campus**. The booklet contains an article by S. Hamilton describing IUPUI's work on assessing diversity and implementation of the student ePort.

Meeting Adjourned at 2:55PM

Program Review and Assessment Committee

Thursday, December 8, 2005

UL1126

1:30-3:00 p.m.

Karen Johnson, Chair

Joshua Smith, Interim Vice Chair

AGENDA –

1. Approval of November Minutes K. Johnson
2. Assessment Strategies Presentations C. Souch and J. Smith
3. Subcommittee Reports
 - Grants Subcommittee..... L. Houser
 - Performance Indicators Subcommittee S. Kahn
4. Report:UFC Discussion of General Education and IFC Consideration of Revising the Principles of Undergraduate Learning..... K. Johnson
5. Faculty Outreach Project Report..... K. Johnson and J. Smith
6. Election of Officers for 2006..... T. Banta
7. AdjournmentK. Johnson

MINUTES –

Members Present: William Agbor-Baiyee, Drew Appleby, Rachel Applegate, Kate Baird, Trudy Banta, Karen Black, Donna Boland, Katie Busby, William Crabtree, Yao-Yi Fu, Andrew Gavrin, Michele Hansen, Linda Houser, Karen Johnson, Susan Kahn, Allison Martin, Howard Mzumara, William Potter, Ingrid Ritchie, Katherine Schilling, Joshua Smith, Sloane Thompson, Russell Vertner, Gail Whitchurch, Debra Winikates and Charles Yokomoto

Guests Present: Amy Abell

Minutes of the November 3rd meeting were approved without correction.

Assessment Strategies Presentation

J. Smith presented a School of Education (SOE) assessment strategy. The SOE is conducting a pilot study using the video case method for programmatic assessment in the secondary teacher education program. The SOE assesses Principles of Teacher Education, which are aligned with PULs. A pilot study was conducted this summer with English/Language Art students. Although not widely used in the past, the case study method is becoming more popular in teacher education. Students complete the assessment in a computer lab using Windows Media Player and headphones to prevent distractions. Students have 2 hours to view video clips and respond to a series of questions in a Word document about the video. Following the pilot study experience, students provided feedback on the quality of the video and the questions used to

prompt their responses. Students generally felt that the task allowed them to articulate what they learned in the Teacher Education program. The video case method is more standardized than videotaping a student presenting a lesson in the field. The next steps including finalizing the scoring rubrics, developing protocols for other content areas (e.g., social studies, math, science, etc.), and continuing work on the Integrative Department Grant that assists the SOE in moving its assessment work into ePort. J. Smith responded to questions from PRAC members about issues of scoring, reliability, and other issues related to the administration of the video case method.

K. Johnson reported for C. Souch on additional assessment strategies. A new procedure to elicit participation in the “Graduating Student Survey” was designed to counter an “appalling” response rate on previous survey administrations. Liberal Arts (LA) looked at the School of Science’s process because their response rate was much better. LA faculty decided that collection and analysis of longitudinal data were not possible under the current system. The survey involves a series of Likert-type items and a reflective essay describing how students’ experience in the School of Liberal Arts helped them achieve mastery in a particular PUL. Data concerning demographic data, exposure to and mastery of PULs, mentors (faculty whose courses they have taken), and academic advisors are also collected in the survey. The response rate dramatically increased when the survey was included with applications for graduation. The students may believe that they have to fill it out as a requirement of graduation, and/or they may feel as though the data will be used in the future. Johnson discussed the students’ assessment of advising experiences and faculty evaluation of the PUL reflective essays (a specific rubric is used: strong positive, positive, negative, strong negative, and N/A). Johnson also discussed the evaluation of reflective essays, and the possibility that the high number of positive ratings may reflect the fact that the higher achieving students are more motivated to turn in their surveys. Johnson wants to work harder on this part of the tool, possibly using the ePortfolio. Major findings from the previous administration were presented. The data will be used for school level reporting, feedback for faculty and departments, improvements in advising, changes in school requirements/attention to quality of learning experiences, and attention to experiences such as undergraduate research, honors, and internships. Future changes include working with the Center for Survey Research to put the survey online and using survey data to inform faculty on a more regular basis.

T. Banta thanked K. Johnson for presenting so well for C. Souch. She also welcomed Sloane Thompson, Acting Director of the IUPUI Internship Office, to the PRAC committee. Banta asked Thompson to speak about her role with the **Internship Council**. She reported that the council is working on identifying “Best Practices” and that her seat on PRAC will further her outreach regarding assessment. She also described an emerging software system that facilitates communication between employers and students interested in internship experiences.

Subcommittee Reports

Grants Subcommittee

L. Houser discussed the five grant proposals submitted. A motion to accept the top three proposals for funding at levels somewhat lower than requested was seconded. A voice vote by attending PRAC members passed unanimously. Houser indicated that by limiting the funds for the current projects, there will be sufficient funds (\$5,000) for another call for proposals in Spring 2006.

Performance Indicators Subcommittee

S. Kahn distributed a list describing the current status of performance indicators of student learning and success. The subcommittee members met twice this semester, went through the goals and indicators, and decided on the type(s) of evidence necessary to make meaningful decisions on each performance indicator. The aim was to identify multiple sources of direct evidence that goals are being met. Kahn reported on the various subcommittees responsible for evaluating the separate indicators for diversity (Diversity Cabinet), Civic Engagement (CE Council subcommittee), Excellence in Teaching and Learning (APPC & RGC, PRAC PI subcommittee). A new set of indicators for "Best Practices" and the existing Research, Scholarship, and Creative Activity indicators have not been evaluated at this point. The PI subcommittee will meet again next semester to reflect on ways to improve the process for the coming year. Johnson wanted to know what to do if a person had a question about the traffic light color choice for a particular category. Kahn said to email her as soon as possible.

ePortfolio Subcommittee

C. Yokomoto stated that this committee meets once per month, and this past meeting was about self-reflection statements. Members brainstormed why reflection is a good exercise for students. Coming up with ways to "sell" reflection to faculty members was discussed. Issues related to writing self-reflective statements and to motivating students and faculty to reflect were discussed. Various stages of reflection were also discussed (point of entry, 26 credit hour point, 56 hours point, capstone/exit level). At the next meeting members will draft items for prompts related to the pre-PUL survey for beginning students. There was a suggestion to write that survey in "generic" terms rather than PUL terms, so that students do not have to know what PULs are yet. Kahn talked about how important it is for students to be aware of how well they are doing at a task.

Program Review Committee

D. Boland reported that the committee's goal this year is to look at Program Review processes. The committee is looking for additional PRAC members to join. They want to host events that will allow an open dialogue session with programs that have recently completed Program Review with programs that are embarking on the process.

Report: UFC Discussion of General Education and IFC Consideration of Revising the Principles of Undergraduate Learning

W. Potter stated that the PULs were introduced at the faculty meeting, but conclusions were not provided. He expected that the issue will be raised during the January meeting. At the next PRAC meeting, Johnson will report a December 21st meeting where the topic of discussion is the form of general education at the IU system level.

Faculty Outreach Project Report

Johnson talked about the faculty outreach project. She and Smith proposed a process that would inform faculty members about PRAC and elicit their feedback about the Program Review and other assessment processes. The two will craft an e-mail asking PRAC members to “volunteer” their school or program. The idea is to hold a meeting with the Dean, PRAC members representing the school/program, and K. Johnson/J. Smith. Eventually Johnson and Smith could attend a Faculty Council meeting to further the conversation directly with faculty about PRAC and how PRAC can assist with assessment initiatives. Smith added that interested members should contact them directly rather than replying to the listserv. Johnson invited members to add their own input when approaching the dean and faculty in their school.

Election of Officers for 2006

T. Banta announced that K. Johnson and J. Smith were willing continue in their current positions as Chair and Vice Chair, respectively. There were no additional nominations and the two were elected with a voice vote.

Adjournment: The meeting ended at 2:45 p.m.



School of Liberal Arts Graduating Senior Survey

- Initiated in 2002 in collaboration with the School of Science
- Set of five questionnaires and forms, completed by students filing for graduation.
- Objective to obtain school-level longitudinal data on *student learning* (specifically related to the PULs) and *mentoring* and *advising* through *student self-assessment* and faculty evaluation of *reflective essays*.



Method

Five surveys which students complete as they file for graduation. Distributed by LIBA Student Affairs office.

1. **The students** - Demographic profile (age, sex, ethnicity); Major and minor; Plans upon graduation

2. **Exposure to and mastery of the PULs**

- **Self-assessment** by each student of their own abilities with respect to the PULs (5-point scale; 11 questions)

- **Short reflective essays** by students on how they have been exposed to the PULs through their undergraduate program. Evaluated by a faculty committee (Teaching and Advising).

3. **Mentoring**; Identify full-time faculty with 'remarkable and positive influence' on the student (description of influence)

4. **Academic Advisor Survey** - Frequency of meetings ; Quality of interaction; Characteristics most important



Examples of Results: Self-assessment by students of proficiency (Dec 2004; n= 223) (mean and mode reported):

Reading and understanding books, articles, and instruction materials	4.36	5
Efficient use of information technology	3.86	4
Writing clearly and effectively	4.42	5
Speaking clearly and effectively	4.28	5
Working as part of a team to solve problems	4.25	5
Thinking critically and analytically	4.39	5
Finding new ways to use skills, knowledge when encountering new situations	4.17	4
Having a general understanding of subjects other than the one in which I majored	4.13	4
Having an in-depth understanding of my major field of study	4.33	4
Communicating effectively with people who see things differently than I do	4.22	4



Examples of Results (2): **Advising Survey** December 2004, n=254

	Average Response
Provides me with helpful and accurate information about my major	4.36
Accurate information School's academic requirements and rules	4.33
Is knowledgeable about career opportunities	3.72
Refers me to appropriate individuals or resources when needed	4.19
Treats me with respect	4.57
Helps me set goals	3.79
Encourages me to make informed decisions	3.94
Is Creative in providing options when I encounter problems	3.87
Has motivated me to do my best	3.80
Knowledgeable extra-curricular/co-curricular opportunities	3.33
Is readily available and prompt in responding to inquiries	4.22



Example of Results (3): Evaluation of PULs

Review of short essays by Faculty Committee (Teaching and Advising) using the following rubric:

1. **Strong Positive:** Student provides a strong, positive response connecting one or more substantive personal examples of experiencing the principle.
2. **Positive:** Student discusses principle in a positive light and provides a personal example of experiencing the principle, but without much amplification.
3. **Negative:** Student discusses principle from a negative aspect and provides a personal example, but without much amplification.
4. **Strong Negative:** Student provides a strong, negative response and amplifies with one or more substantive personal examples.
5. **NA:** Student restates or philosophizes about the principle and provides little or no substantiation in terms of a personal example, or personal example may be superficial.



Evaluation of reflective essays on PULs

487 responses were noted – 437 were deemed classifiable, while 50 were NA

1. Principle 1 = 96 positive, 4 negative and 7 NA
2. Principle 2 = 87 positive, 1 negative and 14 NA
3. Principle 3 = 66 positive, 2 negative and 8 NA
4. Principle 4 = 29 positive, 1 negative and 3 NA
5. Principle 5 = 111 positive, 2 negative and 9 NA
6. Principle 6 = 34 positive, 4 negative and 9 NA

Six categories were analyzed, having a positive response between 89% and 99% of the time, and negative between 2% and 11% of the time – most feedback fell under the positive category in all areas

1. Principle 1 = 96% positive and 4% negative
2. Principle 2 = 99% positive and 1% negative
3. Principle 3 = 97% positive and 3% negative
4. Principle 4 = 97% positive and 3% negative
5. Principle 5 = 98% positive and 2% negative
6. Principle 6 = 89% positive and 11 % negative



Some interesting findings

- Results are remarkably consistent through time
- >90% of Graduating Seniors rate themselves as proficient in each of the PULs. Faculty evaluations of the reflective essays support this assertion.
- Graduating Seniors are more satisfied with teaching than advising, and are more satisfied with faculty and courses in their major than outside their major
- Graduating Seniors are least satisfied with opportunities for service learning/civic engagement, involvement in faculty research, and co-curricular activities
- Students perceive that advisors provide accurate information about the major, the school's requirements and are readily available, but they are much less knowledgeable about career opportunities and even less so about co-curricular activities



Use of Data

- **School level reporting – School Assessment Report; School Planning Report; Tied to Strategic Plan**
- **Feedback to individual faculty on advising/ mentoring (prompts self-improvement and provides information on impact for annual/P&T reviews)**
- **Improvements in Advising: Identification of key areas not well served and development of training programs/information for advisors: for example attention to information on careers, setting goals**
- **Changes in School Requirements/Attention to Quality of Learning Experiences: Faculty Committees discussing school requirements (Standards and Advising) and Student Learning (Teaching and Advising)**
- **Focused attention on experiences such as undergraduate research, Honors (new initiative) and internships**



Success factors

- Response rate: Tie to request to graduate
- Continuity: Involvement of Dean's office: Student Affairs and Academic Affairs
- Use of data: Broad dissemination of results and faculty involvement in evaluation (further room for involvement)

Proposed Changes

- Work with Center for Survey Research (Jim Wolf) to put this online
- Faculty Committee: Teaching and Advising to review questions/responses and report to the faculty on a more regular basis

Program Review and Assessment Committee

Thursday, January 19, 2006

UL1126

1:30-3:00 p.m.

Karen Johnson, Chair

Joshua Smith, Vice Chair

AGENDA –

1. Approval of December MinutesK. Johnson
2. PUL Revision and IU General Education Processes Betty Jones
3. Program Review Report.....Greg Lindsey
4. Assessment Strategies Presentations..... Thom Upton and D. Appleby
5. Subcommittee Reports
 - Grants Subcommittee.....L. Houser
 - Performance Indicators SubcommitteeS. Kahn
 - Program Review..... K. Black
 - Graduate IssuesJ. Mac Kinnon
 - ePortfolio..... S. Hamilton
6. AdjournmentK. Johnson

MINUTES –

Members Present: Drew Appleby, Kate Baird, Trudy Banta, James Brown, Katie Busby, William Crabtree, Yao-Yi Fu, Janet Fulton, Andrew Gavrin, Sharon Hamilton, Michele Hansen, Linda Houser, Karen Johnson, Susan Kahn, Joyce Mac Kinnon, Allison Martin, Craig McDaniel, Howard Mzumara, Joanne Orr, Irene Queiro-Tajalli, Ingrid Ritchie, Joshua Smith, Russell Vertner, Debra Winikates, Charles Yokomoto, Nancy Young, and Gail Whitchurch

Guests Present: Thomas Upton, Greg Lindsey, Monica Winter, Laura Sommerville, and Kristin Jardot

Minutes of the December 8th meeting were approved without correction.

Program Review Report

T. Banta introduced Greg Lindsey, Executive Associate Dean of SPEA, who was invited to describe the program review process in his school. Several SPEA programs were reviewed in 1999 and 2000 and Lindsey focused on the impact of all of the reviews combined. He first described SPEA as relatively small with 28 tenured and tenure-line faculty and over 40 associate faculty. There are slightly more than 1000 students in the school, including graduate and undergraduate students. Lindsey presented several slides

describing changes in enrollment and numbers of graduates in the various programs over the past five years. (see attachments).

The major questions posed in the SPEA reviews included, (1) Are degree titles appropriate?; (2) Does course content align with stated program goals?; (3) Is the physical setting (primarily research labs) adequate?; and (4) Are students supportive of the program? The reviewers commended a strong faculty. They also made several recommendations, including splitting the BSPH program into two separate programs, using accreditation guidelines for curricular alignment, increasing lab space, developing a comprehensive business plan, expanding faculty advising roles and depth, changing administrative leadership roles, and attending to issues of low student morale. SPEA has taken several steps to address the stated concerns. For example, SPEA has moved away from concentrations and now undergraduates declare a specific “major.” In terms of advising, they have added a professional advisor to assist with course choice and sequencing. Faculty advising has been clarified as mentoring, providing insights on career and internship opportunities. In terms of leadership, SPEA intentionally parsed Program Director titles to include one director for Academic Affairs (handles issues that cut across all programs) and three program directors in Public Health, Public Affairs, and Criminal Justice, respectively. Finally, SPEA has encouraged associate faculty to become mentors to current students. In response to a question from Whitchurch about how that process is facilitated, Lindsey discussed the role of professional development and the program director, who keeps track of associate faculty vita and interests. Ritchie, who is the director of academic affairs for SPEA, elaborated on increased opportunities for connecting students to faculty in the field, including an Honors track and internships with state agencies. While the School has addressed many issues from the reviews, they have not attended to all the recommendations, most notably in the areas of the business plan and lab space.

Lindsey likened the assessment of their program review outcomes to the performance indicator level “orange.” Reasons for the current indicator level include continual transition of leadership (among staff and four different Associate Deans) and fiscal hardship in 1998-1999. He reported that leadership has been steady for the past two years, and fiscally, the School is in better shape to move forward on the recommendations. He pointed to recent results of student opinion surveys demonstrating that fewer students are dissatisfied with many areas than students were five years ago. He also cited growing numbers of majors as an indicator of success. Brown asked how SPEA accounts for the increases in enrollment. Lindsey cited better marketing within and across schools and word of mouth by students. Queiro-Tajalli asked how schools can balance the need to reach students while recognizing growing demands on their time. Lindsey went back to the survey results and discussed how it revealed student challenges and perspectives on such issues. Ritchie followed up by describing policies that support students on academic probation. First, students on probation must see an advisor before registering and students on “critical probation” have a credit limit for the semester. Lindsey added that students who wish to take more than 15 credits are required to plot their previous academic achievement by number of credits. Inevitably a negative relationship emerges and students are discouraged from taking too many credits.

McDaniel inquired about the role of PULs in the review. Lindsey indicated that PULs appear on faculty syllabi and faculty are asked to identify assignments that measure student achievement of the PULs in the course. Ritchie expressed a desire to move beyond that level to include methods of assessment in the future.

Assessment Strategies

Thomas Upton, Director of ESL programs in the English Department, presented an assessment strategy. The strategy was based on a 2000 program review that was partially supported by a PRAC grant. The grant provided an opportunity to assess two aspects of the ESL program, (a) the exam used to place non-native English speakers entering IUPUI, and (b) curriculum review of the courses offered in the program. The findings of the review demonstrated some problems with the placement test. For instance, there was only one form of the test, and it wasn't normed adequately for IUPUI. As a result of the findings, the program adopted an assessment instrument from ACT (ACT/COMPASS) that is scored with assistance from the Testing Center. Curricular changes based on program review feedback included separating graduate and undergraduate students, aligning course content with the content of the placement test, and strengthening the academic language skills required in each course. ESL is moving forward with another program review to examine the impact of modifications in placement testing and curricular alignment on student achievement.

Drew Appleby, Department of Psychology, presented an assessment strategy with three of his students from the B454 capstone course. The strategy was based on two projects conducted in preparation for the Psychology program review last year. The first project was the Curriculum Matrix/Syllabus audit project. Students in B454 collected all syllabi for courses taught in the Psychology program. Then they identified the extent to which the syllabi reflected the Student Learning Outcomes (SLOs) in the psychology program. Early in the process, they discovered that the SLOs needed to be "debundled," since the SLOs contained more than one distinct outcome. Students created a matrix of all courses and all SLOs and then presented the data to the faculty for confirmation. The second part of the project involved identifying the level or depth of coverage of each SLO as either beginning, intermediate, or advanced. In general, students reported that faculty were interested in the process and appreciated the work of the B454 class. McDaniel asked if the psychology department expects all courses to address all SLOs. Appleby responded, "Not yet."

The second project involved the development of a short survey to elicit student self-report achievement of each of the 15 SLOs. Forty students responded and the results were reported in Table 1 of the handouts. One student presented the poster they had developed that described the project and commented on the challenges and benefits of the entire assessment process. Students reported that they gained skills such as communication and collaboration and learned how to critically evaluate a course syllabus.

Due to time limitations, Johnson asked that any committee reports be sent to the PRAC listserv. Hamilton made an announcement that IUPUI's efforts in developing and

assessing the PULs have been recognized with a Hesburgh Certificate of Excellence—one of just three projects in the country recognized with Hesburgh awards in 2006.. Finally unanimous appreciation was expressed to Appleby for bringing the delicious cookies!!

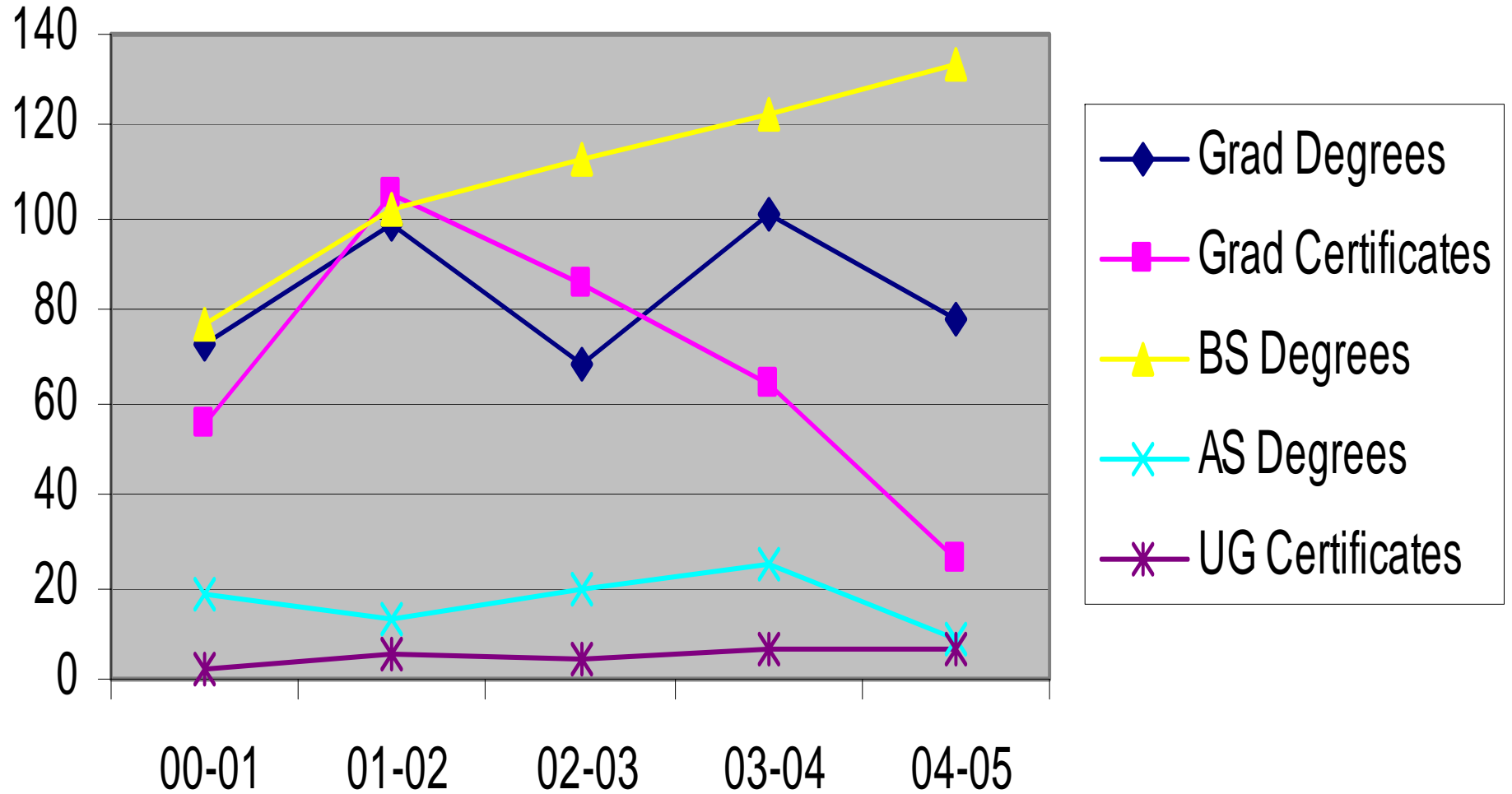
Meeting adjourned at 3:01PM

SPEA IUPUI

An Overview

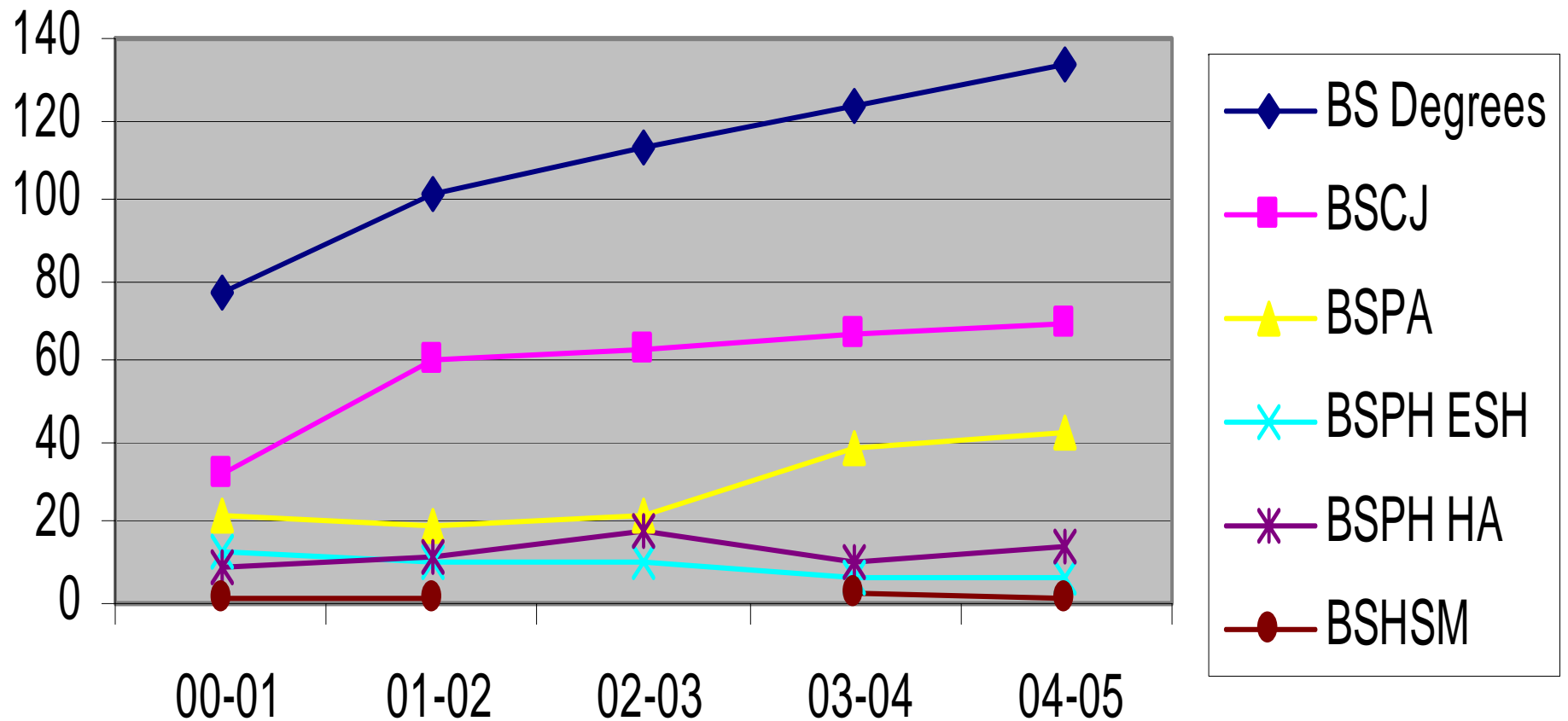
- 28 faculty; 40-50 associate faculty; \pm 1000 students
- Five key degree programs
 - BS Criminal Justice (BSCJ)
 - (2006: new public safety major)
 - BS Public Affairs (BSPA)
 - Management, Civic Leadership, & Policy Analysis majors
 - BS Public Health (BSPH)
 - Health Administration & Environmental Science & Health majors
 - Master of Public Affairs (MPA)
 - Master of Health Administration (MHA)
- Other Degree Programs
 - BS Health Services Management (will integrate with BSPH)
 - BS Environmental Science (will support School of Science)

SPEA Degrees & Certificates Awarded

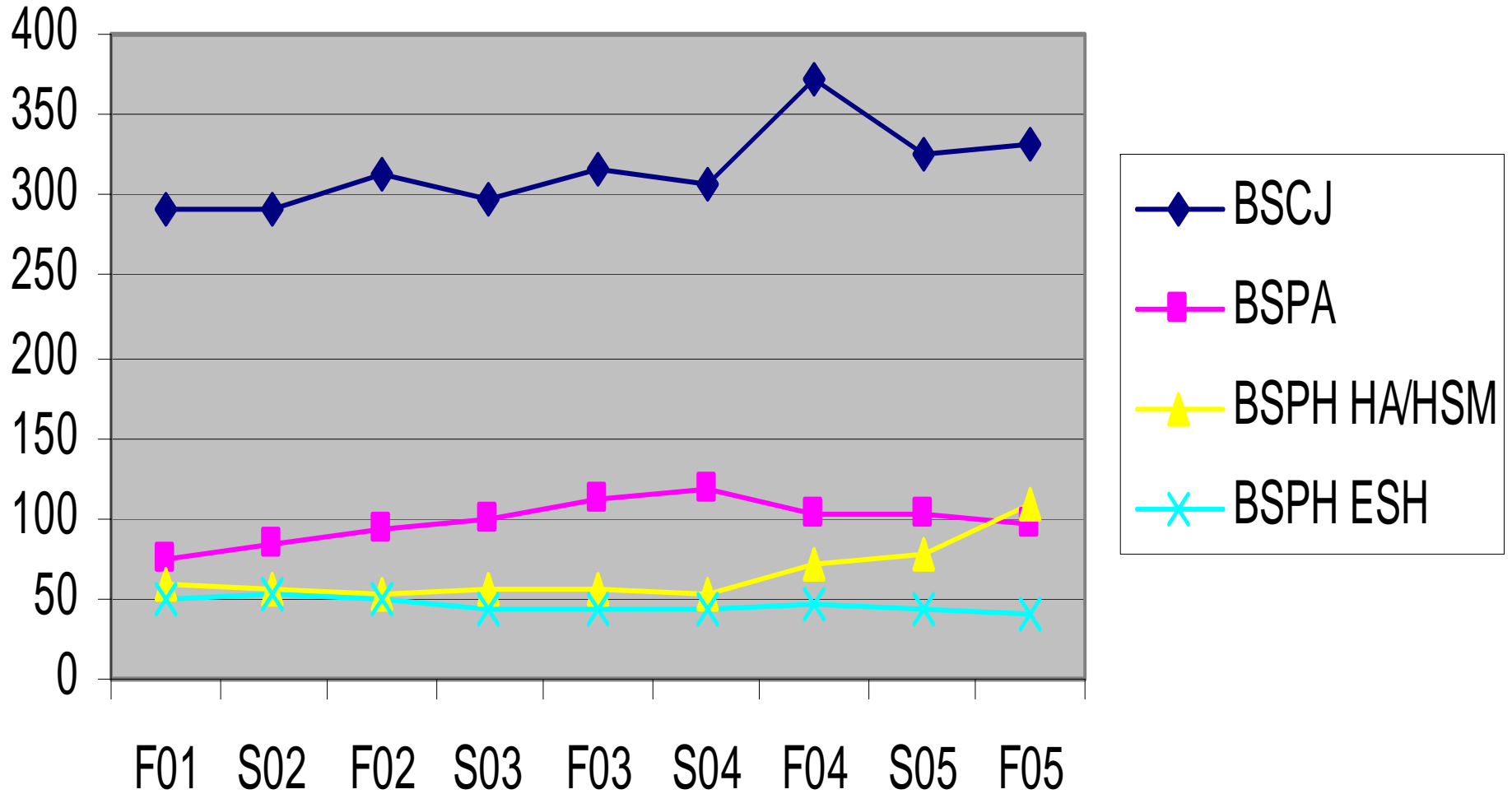


SPEA Undergraduate Degrees Awarded

(degrees awarded increased 73% in five years)



SPEA Undergraduate Enrollment - Headcount



School of Public and Environmental Affairs

- Recent program reviews
 - BSPH: 1999-2000
 - BSCJ: 1999-2000
 - BSPA: 1999-2000
- Recent accreditation reviews
 - MPA: 2004-05 (self study); 2005-06 (site visit)
 - MHA: 2004-05 (self study); 2005-06 (site visit)
 - BSPH Environmental Science and Health Major: 2005-06 (self study, application, site visit)

BSPH Program Review: 1999-2000

Principal Findings

1. Appropriate degree titles
 - Finding: split concentrations into two degrees; use BSHSM; eliminate BSPH
 - Action: created majors; collaborated in formation of BSES
2. Needed course work
 - Finding: use accreditation materials as guides
 - Action: curricular review and application for accreditation
3. Physical facilities
 - Finding: lab space is inadequate
 - Action: none; resources, enrollments preclude investment
4. Assess student support for programs
 - Finding: low student morale; enrolled because of cost and access; good faculty
 - Action: very recent improvement in student services
- Most forceful overall recommendation: develop a business plan
 - Action: not done; degree program has continued to evolve piecemeal; will develop enrollment targets in Spring 2006

BSPH Program Review: 1999-2000

Other Recommendations

1. Expand faculty advising role
 - Focused on professional staff advising, customer service, and faculty mentoring on careers
2. Expand function of program faculty
 - Changed faculty leadership and committee structure
 - Consolidated grad and undergrad curriculum committees
 - Changed Grad and Undergrad program directors to Public Affairs, Health Administration, and Criminal Justice directors (substantive emphasis)
 - Integrated program and curriculum committees
3. Develop model schedules for degree completion
 - Completed course rotation schedules; need to develop student guides
4. Appoint adjunct faculty and alumni as mentors
 - Not done; alumni surveyed in fall 2005 about mentoring; Alumni Associate board developing mentoring program
5. Establish advisory committee for each degree program
 - Not done; but professional advisors have met periodically
6. Clarify program leadership (see response to #2)

BSPH Program Review: 1999-2000

Other Recommendations

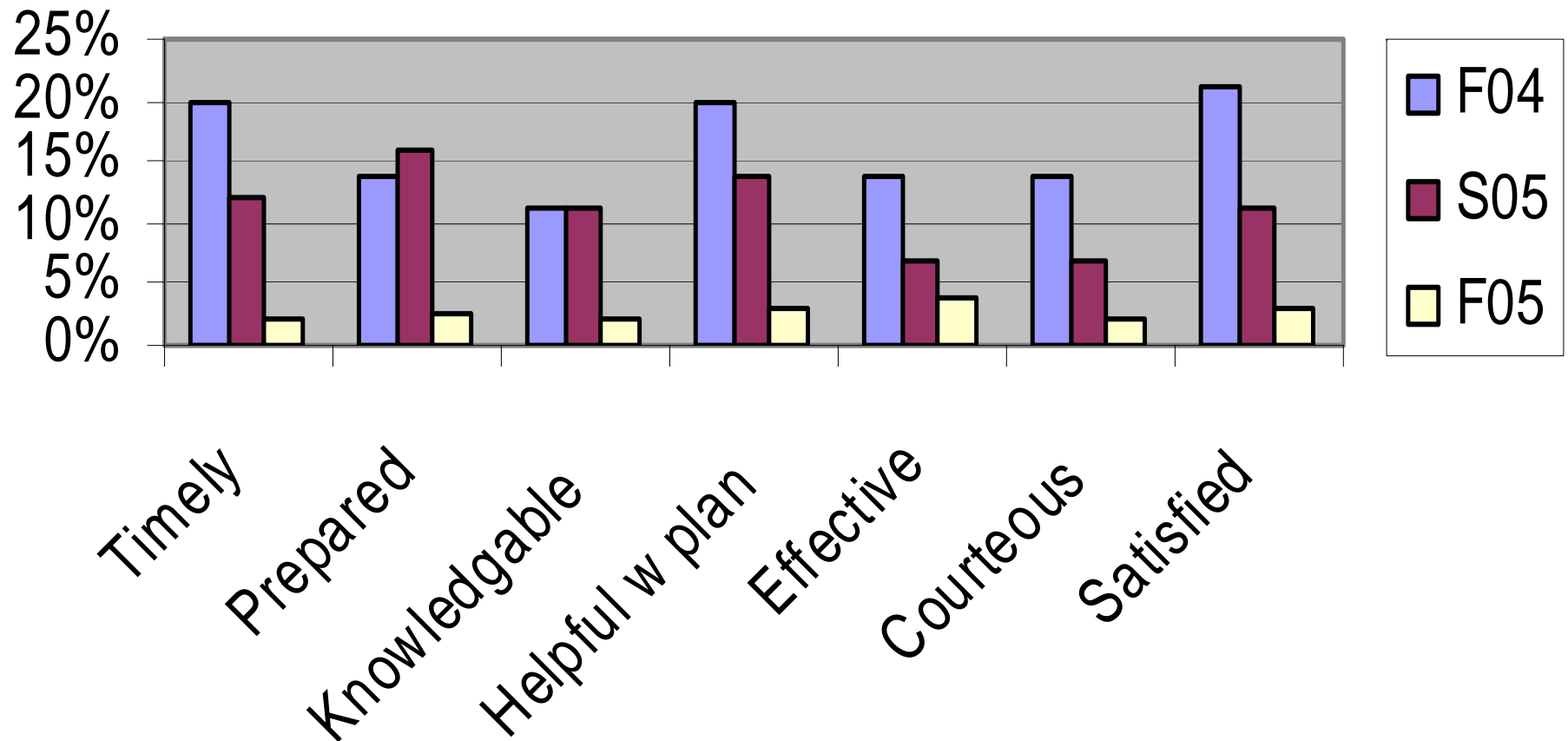
7. Develop accelerated path to the MPH
 - Not done; accelerated MHA retained
8. Develop opportunities for highly motivated students
 - Not done; planning new Indiana Leadership Program for honors students to fulfill capstone and internship requirements
9. Consider distinctive competencies in degree program (coop program, information management)
 - Not done
10. Strengthen courses (finance, marketing, HR)
 - Hired lecturer and part-time lecturer in health area and finance; have initiated curriculum review
11. Strengthen recruitment in environmental science area
 - Director and marketing and recruitment has worked with faculty on recruitment strategy
12. Seek accreditation for environmental science major
 - Submitted self-study report in January 2006

BSPH Program Review: 1999-2000

Insights and Observations

- Outcomes
 - Mixed response at best (red light; orange?)
- Explanations
 - Changes in school leadership:
 - Four deans in five years: 1999-00 to 2003-04
 - Changing program faculty and leadership
 - Staff turnover
 - Fiscal deficits in 1999-2000; 2000-2001
- Recent Progress
 - Stable leadership
 - New health-related faculty
 - New Health Administration Director
 - Better linkages with health sector
 - Recent growth in enrollments
 - Application for accreditation for environmental program
- Challenges
 - Similar to 1999-2000, focused by doubling initiatives and fiscal crises

Percentage of SPEA Undergraduates Who Disagree that Student Services is



School of Public and Environmental Affairs Fall 2005 Undergraduate Student Opinion Survey

The mission of SPEA's Office of Student Services is to support you and other SPEA students in your efforts to achieve your academic goals. We want to continuously improve our services to you, and we need your help to do so. Please complete this questionnaire (only once) about the assistance that you last received in our office and turn it in along with your course evaluation. Your feedback will help us focus and improve our services. Thank you for giving us the opportunity to serve you!

Instructions: Please do **NOT** sign your name. **This survey may be handed out in more than one course that you are completing this semester. As a result, please complete only one survey.** Respond to the statements and or question below by circling the appropriate responses and writing any comments you may want to share.

1. Are you a SPEA major?
 - a. YES → If yes, which program (please circle):

Criminal Justice	Public Safety Management
Environmental Science	Health Administration
Public Affairs	

(If yes, please go to question # 2)
 - b. NO → If no, please go to question # 8
If no, what major are you pursuing? _____

2. Have you ever met with your SPEA Student Services' academic advisor?
 - a. YES → If yes, please go to question # 3
 - b. NO → If no, please go to question #7
If no, have you (please circle)? Self Advised Met with a SPEA Faculty Advisor Other _____

3. How often do you usually meet with your SPEA Student Services' academic advisor?
 - a. EVERY SEMESTER TO PLAN MY SCHEDULE
 - b. ABOUT ONCE A YEAR TO PLAN MY SCHEDULE
 - c. ONLY WHEN A PROBLEM OCCURS AND I NEED HELP
 - d. ONLY WHEN I AM ASKED OR REQUIRED TO MEET
 - e. OTHER _____

4. Did you meet with your SPEA Student Services' academic advisor during the Fall 2005 semester?
 - a. YES → If so, in what month (please circle)? June July August September October November
 - b. NO → If no, did you (please circle)? Self-advise Meet with a SPEA faculty advisor Other _____

5. We have listed some common topics that students often discuss with their advisors. If you answered yes to questions 2 or 4 please circle the number of times you have discussed these topics with your advisor.						
Some Common Topics During Advising	Number of times I've discussed with my advisor since June 2005					
a. Any university policies	0	1	2	3	4	5 or more
b. Dropping and/or adding course (s)	0	1	2	3	4	5 or more
c. Possible majors/minors.	0	1	2	3	4	5 or more
d. Planning a class schedule for the next semester	0	1	2	3	4	5 or more
e. Transfer credit and policies	0	1	2	3	4	5 or more
f. Career alternatives	0	1	2	3	4	5 or more
g. Probation and dismissal policies	0	1	2	3	4	5 or more
h. Financial aid	0	1	2	3	4	5 or more
i. Study skills or study tips	0	1	2	3	4	5 or more
j. Personal concerns or problems	0	1	2	3	4	5 or more
k. Studies abroad or other special academic programs	0	1	2	3	4	5 or more
l. Discussing internship opportunities	0	1	2	3	4	5 or more
m. Personal goals	0	1	2	3	4	5 or more
n. Academic progress	0	1	2	3	4	5 or more
o. Extracurricular activities	0	1	2	3	4	5 or more
p. The purpose of a college education	0	1	2	3	4	5 or more
q. Time management	0	1	2	3	4	5 or more
r. Experiences in different classes	0	1	2	3	4	5 or more
s. Student organizations and leadership opportunities	0	1	2	3	4	5 or more
t. Student voluntary service opportunities	0	1	2	3	4	5 or more

Thank you for taking the time to complete this survey and let us know how we are doing!

6. Questions about Academic Advising (Student Services)	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Not Applicable
a. I was able to schedule an appointment with my advisor in a timely manner.	1	2	3	4	5	NA
b. My advisor helped me to plan a course load that took into account my work and/or other commitments.	1	2	3	4	5	NA
c. My advisor was prepared for my advising session.	1	2	3	4	5	NA
d. My advisor is interested in helping me learn how to find out about courses and programs for myself.	1	2	3	4	5	NA
e. My advisor discussed my academic plan with me.	1	2	3	4	5	NA
f. My advisor was knowledgeable about university requirements at SPEA.	1	2	3	4	5	NA

7. Questions about Student Services	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Not Applicable
a. The SPEA staff was able to give me information about resources and services on campus when appropriate.	1	2	3	4	5	NA
b. The SPEA staff answered my questions effectively and/or I was referred to the appropriate person or office.	1	2	3	4	5	NA
c. The SPEA staff was efficient and courteous when I made my appointment.	1	2	3	4	5	NA
d. In general, I was satisfied with the assistance I received from SPEA Student Services during my last visit.	1	2	3	4	5	NA

8. Questions about You	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Not Applicable
Are you a SPEA major (please circle)? YES NO						
a. I think the Onestart system is easy to use.	1	2	3	4	5	NA
b. Sometimes I put off taking classes I have heard were hard.	1	2	3	4	5	NA
c. I take more classes each semester than I would like to because it is the only way to keep my financial aid.	1	2	3	4	5	NA
d. Sometimes I do not take classes recommended by my advisor because the times conflict with work.	1	2	3	4	5	NA
e. Personal problems with my family, spouse, or friends sometimes have affected my schoolwork.	1	2	3	4	5	NA

9. Comments –If you responded to an item in questions #6 or #7 above with a strongly disagree or disagree, could you please explain what took place that prompted this response?

Walk-in Advising

Recently, Student Services moved to a walk-in advising model during priority registration and the 1st two weeks of the semester, as a means to accommodate more students in a timely manner.

10. Did you participate in walk-in advising during priority registration?

- a. YES
- b. NO

11. If yes to question #10, was your advisor able to assist you in planning a schedule for summer and/or fall registration?

- a. YES
- b. NO (please explain) _____

Thank you for taking the time to complete this survey and let us know how we are doing!

7. How satisfied are you with the SPEA graduate application and admission process (please circle the appropriate response below)?

1	2	3	4	5
Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied

8. Do you have any suggestions about how we could improve the application and admission process?_____

9. Please write here anything else that you would like to tell us.

Program Review and Assessment Committee

Thursday, February 16, 2006

UL1126

1:30-3:00 p.m.

Karen Johnson, Chair

Joshua Smith, Vice Chair

AGENDA –

1. Approval of the minutes of the December meetingK. Johnson
2. Report on the Status of the PULs and the Core Curriculum Proposal for the IU SystemB. Jones
3. ePort Update S. Hamilton
4. Assessment Strategies Presentations R. Applegate and Dolores Hoyt
A. Helman
and Lester Cook
5. Subcommittee Reports..... Subcommittee Representatives
6. Faculty Outreach Project UpdateK. Johnson
and J. Smith
7. Adjournment..... K. Johnson

MINUTES –

Members Present: Drew Appleby, Rachel Applegate, Kate Baird, Trudy Banta, Karen Black, Polly Boruff-Jones, Katie Busby, William Crabtree, Sharon Hamilton, Michele Hansen, Amanda Helman, Karen Janke, Karen Johnson, Susan Kahn, Joyce Mac Kinnon, Craig McDaniel, Melinda Meadows, Howard Mzumara, Joanne Orr, Katherine Schilling, Joshua Smith, Russell Vertner, Marianne Wokeck, Charles Yokomoto, and Nancy Young.

Guests Present: Dolores Hoyt, Lester Cook, and Betty Jones

Minutes of the January 19th meeting were approved without correction.

ePort Update

S. Hamilton passed around the certificate for the TIAA-CREF HESBURGH AWARD, which recognizes IUPUI's work with the Principles of Undergraduate Learning (PULs). She went on to describe the student ePort as being in the chrysalis stage. Two integrative department grants (Computer Information and Technology & Secondary Education) plus General Studies, are using ePort for program assessment, curricular transformation, and documenting student learning of our PULs. Hamilton noted that funds were available for another RFP that would fund two new proposals. She

mentioned a collaborative effort with Ivy Tech Community College to support students who transfer into IUPUI via the Passport Program. The goal is to develop a crosswalk between Ivy Tech general education outcomes and IUPUI's PULs. Hamilton also reported on the work of the ePort subcommittee. The subcommittee is working to describe the role of reflection in enhancing student learning. Members tried to define what we could ask minimally of all students in the first year (personal reflection), after 56 credit hours, and at the end of their undergraduate programs. Hamilton handed out a scoring rubric adapted from an Alverno College instrument, "Development in Reflective Thinking."

Assessment Strategies: Rachel Applegate & Dolores Hoyt

R. Applegate began by describing the purpose of her presentation. Rather than presenting an assessment strategy, she talked about the ways the library can assist programs as they prepare for program review and other assessment initiatives. She indicated that the library does conduct assessment internally to improve its programs. However, she emphasized the fact that accreditation visitors often ask libraries to provide information on holdings, spending on materials, and course-specific information. Applegate and Dolores Hoyt discussed the following types of data the library can provide:

- Subject comparison looks at major holdings at IUPUI and peer institutions to compare materials in a subject.
- Journal articles/books-faculty citations. Examining the extent to which IUPUI faculty scholarship is available in our holdings. Using this process as a benchmark will be conducted in the future.
- Process/Outputs (over two years)
- Circulation of books in a given area. Use of journals-use of print and electronic materials by genre. The trend shows that if you can get it electronically, people will use it.
- Interlibrary loan-by student use and faculty use
- In class work
- Proportion of course with any library usage

The takeaway message from the presentation was that there is no lack of data. Applegate stated that you just have to ask for it.

General Studies Capstone OLS 399: Lester Cook

Lester Cook used profiles of some students in his class to describe their diversity in terms of age, stop-out/drop-outs, range of experience, other demographic characteristics, average GPA (3.0), and full-time/part-time status. He described the challenges but highlighted the value of this diversity. He and colleagues developed the capstone course in Fall 2004. The course is a "hybrid," offered for four hours on five Saturdays. The remaining instruction/discussion occurs online. The course was intentionally developed around the PULs and is used to evaluate the extent to which students have mastered the PULs. Each student prepares two portfolios (one formal and one presentation portfolio). The formal portfolio includes 21 individual entries. Each entry must include an explanation statement, reflective statement, and a competence

statement. He described reflection, a personal exploration of change over time, as the “hard part.” The presentation portfolio is directed toward employment, graduate school application, and personal reflection. Results of assessment suggest that students enjoy the process and rise to the challenge. Students reported that it was the first time they had looked closely at their education. The process also helped instructors become better teachers/advisors. Cook shared positive feedback from Betty Jones who served as an outside evaluator for the program.

M. Hansen asked about the types of exhibits submitted to meet competence in each category and Cook described various entries including papers, assignments from previous classes, and work experiences. C. McDaniel asked what framework or rubric was used to ensure that students stay on task. A Helman noted that the class was not a requirement for graduation. Cook identified multiple resources to assist students as they develop the portfolio. These include peer review, faculty review, and consistent feedback on the elements of the portfolio.

McDaniel followed up with a question about relying on written work as the sole means to demonstrate competence. Cook responded that they have focused on written work, but could envision using other mechanisms with more time and support. McDaniel cited the limitation of using only written exhibits. Hamilton pointed out that national portfolio models have generally relied on written artifacts, but noted that ePort has capacity to incorporate much more.

PULs and General Education Update- Betty Jones

Betty Jones indicated that the next vote on the PULs in Faculty Council was postponed and the issue is on the agenda for the March meeting. She stated that some people were still trying to achieve clarity in the language of critical thinking. The debate centers around critical vs. creative thinking. Additionally, within the Society and Culture PUL, there is disagreement about the “d” word: Diversity. Jones has tried to get health and wellness embedded in the Values and Ethics PUL, but does not seem confident it will appear. Finally, one section regarding implementation, assessment, and responsibility was sent back to the Faculty Council Executive Committee, where it has become a “back burner issue.”

Jones went on to describe the core curriculum update. President Herbert has used the phrase “core curriculum.” The University Faculty Council (UFC) has not decided how to respond. UFC members voted on new IU system-wide admissions criteria. It was suggested that the campus policies follow Indiana Code. She ended by mentioning that IUPUI has an admission policy that has been approved by the Indianapolis Faculty Council.

New Business/Announcements

S. Kahn announced a meeting of the Subcommittee on Performance Indicators in the coming month. The 2005 IUPUI Performance Report is at the printer. She also noted that a week from Monday, students will receive an email message inviting them to

participate in the National Survey of Student Engagement (NSSE). T. Banta stated that she is in the process of drafting a message to the deans asking them to encourage students in the schools to participate. Students will be offered an opportunity to enter a drawing to win an iPod Shuffle or \$100 credit on their Jagtags.

D. Appleby gave heartfelt thanks for PRAC support of the psychology students who presented at the previous PRAC meeting. One of the students indicated that presenting at PRAC was the highlight of her IUPUI experience. T. Banta thanked PRAC members for taking the time to visit with IMIR candidates. She asked for volunteers to attend William Knight's 11:15 a.m. presentation the next day. Banta also indicated that she will send information to programs/departments requesting that they complete by May 15 two assessment reports—one for the Indiana Commission on Higher Education and the traditional one for IUPUI—both of which will be posted on the PRAC website.

K. Johnson reported on the proposed unit visits. She sent out email explaining the rationale for the meetings and asked PRAC members to let her know if their units would like to host a visit by Johnson and J. Smith.

Meeting adjourned at 2:55 p.m.

Program Review and Assessment Committee

Thursday, March 23, 2006

UL1126

1:30-3:00 p.m.

Karen Johnson, Chair

Joshua Smith, Vice Chair

AGENDA -

1. Approval of the Minutes of the February Meeting K. Johnson
2. Assessment Strategies Presentations I. Queiro-Tajalli and M. Hanson
.....
3. Program Review Report, Kelley School of Business Tim Bennett
4. Subcommittee Reports
 Grants.....L. Houser
 Advanced Practitioners J. Smith
 Other
5. Report on Integrative Department Grant, School of Education..... J. Smith
6. Adjournment..... K. Johnson

MINUTES -

Members Present: Drew Appleby, Rachel Applegate, Kate Baird, Trudy Banta, Karen Black, Polly Boruff-Jones, Jake Chen, Yao-Yi Fu, Michele Hansen, Karen Johnson, Susan Kahn, Hea-Won Kim, Allison Martin, Howard Mzumara, Joanne Orr, Irene Queiro-Tajalli, Kenneth Rennels, Joshua Smith, Russell Vertner, Gail Whitchurch, Debra Winikates, Marianne Wokeck, Charles Yokomoto, and Nancy Young.

Guests Present: Timothy Bennett (Kelley School of Business) and Cathy Buyarski (University College Academic Advisement)

Minutes of the February 16th meeting were approved without correction.

Program Review Report

In 2002 Kelley School of Business conducted a program review of their newly created internship program. Kelley opened a separate career center specifically for the School following a national trend to create a career center within business schools. Kelley developed a fully functioning career center with one component for career services and one component for internship placement and monitoring.

In 2001, Kelley was only placing 35 students in internships; in 2005-2006, over 600 internship opportunities exist. Employers in Central Indiana are recognizing the importance of internships and students are getting involved. Major impediments to increasing offerings include the number of hours students are working and their increasing family responsibilities. A limitation on the employers' side is that a partnership with Kelley is a relatively new phenomenon. Indianapolis has many small/medium sized firms that lack the formal experience and understanding an "internship" experience should encompass. Some view it as a free part-time job. Others such as

Lilly have national internship programs and years of experience. IUPUI's Internship Council is trying to bring coherence to the internship process across the campus, using a software system to link units/schools with employers regardless of major.

Major recommendations from the review involved increasing communication with students and engaging employers in a development network. In a recent survey 40% of businesses did not know IUPUI had a school of business. T. Banta asked about any relationships between the KSB internship programs and the Solution Center. Tim Bennett of KSB referred again to the process of connecting internship experiences across campus. D. Appleby inquired about a core set of skills for internships and whether or not Kelley has defined any mechanism for assessing the extent to which students have attained a core set of skills.

Bennett described two different types of internships: one for credit, the second not for credit. Internships that receive course credit are monitored by a staff/faculty mentor who meets with student and employer to see the extent to which internship goals were met. Not for credit are not supervised as stringently, beyond determining that the internship experience is worthy of experiential learning. Bennett noted that 80% of internships lead to full-time job offers.

R. Vertner added that the review provided an opportunity for introspection on the internship program. It permitted staff to reflect on the process of connecting students with internships and to analyze the goals and virtues of going forward with the program. K. Rennels asked if Kelley is using employer feedback to assess student learning on the PULs. Bennett replied, "We are now!"

Assessment Strategies: Michele Hansen & Cathy Buyarski

M. Hansen presented the results of the comprehensive assessment of the advisement center in University College. Excerpts from the PowerPoint that were highlighted in the presentation included:

- Overall Assessment Approaches: active, triangulate, and accountability
- Assessment Plan: Stakeholders, purpose of assessment, mapped out processes, articulated intended goals, sources of evidence, methods of gathering evidence
- 25-30% response rate for surveys
- 48 items on the survey
- Most important aspects to students: treats me with respect, is trustworthy, and provides accurate information.
- Advising processes significantly predicting spring cumulative grade point average
 - Knowledgeable -
 - Professionalism +
- Group Differences: African Americans, Latinos, and Asian Americans consider interaction style more important than other students.
- Students who met with the same advisor were more satisfied, controlling for demographics.
 - "Overall, I am satisfied with my advising experiences at IUPUI."
- UC advising made significant improvements over time - 1999-2005
- Struggling to find ways to give feedback to students
 - Posters, Web
- Still working on the self-study for the Advising Center program review; how can advising maintain momentum?

Banta commented that external reviewers are coming in May. They are experts in assessment and advising and will provide national feedback on the process and results of the review.

S. Hamilton indicated that the ePort group must be excited because they are working on

prompts to elicit pre-post changes on academic goals, academic success, and confidence in degree completion and goal persistence. Hansen noted that the Testing Center was enormously helpful in constructing the survey and administering it via the Web.

Indiana School of Social Work: Irene Queiro-Tajalli & Khadiga Khaja

I. Querio-Tajalli recognized Hea-Won Kim and Khadiga Khaja, who helped with work on the project. Her PowerPoint presentation is summarized below.

- Faculty and staff in social work believe that assessment should be embedded in the teaching and learning environment.
- School of Social Work
 - 900 students, 45-full time, 50 part-time, faculty
 - BSW, MSW, & Ph.D.
- BSW programs on three IU campuses, MSW on 4 campuses, Ph.D. at IUPUI, and BSW courses at Columbus and Kokomo.
- Purpose of Assessment: formative and summative to improve quality and to demonstrate goal achievement and outcomes
 - Assessment Methods
 - Bring to the table that you can have confidence that things are working well. You can set benchmarks, make program modifications, and pressure change.
 - More than ten years ago, the school assumed control of its course/evaluation system.
 - Multiple, on-going methodology
 - Assured control of assessment system
 - Faculty agreed on common items
 - Added course objectives
 - Revised four years ago
 - Added items about student effort and satisfaction with their performance
 - For students to make sure faculty and students have satisfied objectives
 - First come to program directors to review the responses prior to forwarding the results to the appropriate faculty person
 - Used for annual review & P/T helps Irene provide feedback for associate faculty
 - Course Learning Objectives (CLO) Classification System and Database→assess the curriculum
 - Before Classification took place
 - Development of a shared school mission
 - Development of each program shared: vision, mission, goals, objectives
 - The CLO Classification System organizes, plans, develops, and assesses curriculum.
 - Lessons learned: Make sure faculty are part of the process

Khadiga Khaja presented an example of classroom assessment. She teaches a course entitled Diversity in a Pluralistic Society. She described coming to the campus as a Muslim right after 9/11. Khaja wanted to develop an assessment process that was student-centered. She took the 8 course objectives and divided the class into teams. She asked students to bring back their perspectives on the importance of each objective. Students took the task seriously, debated the issues, and arrived at consensus. D. Appleby noted the importance of involving students actively in creating assessment rather than “assessment being done to students.”

New Business/Announcements

Banta handed out the *2005 IUPUI Performance Report* and recognized S. Kahn for her important contributions to the process and document.

J. Smith announced that the Advanced Practitioners group is developing a series of methodology workshops in conjunction with the Office for Professional Development. He asked PRAC members to suggest workshop topics via the LISTSERV.

Kahn passed around the COIL Integrative Department Grant RFP. A total of \$5,000 may be awarded to one or two departments, with the hope of bringing along a new group.

Meeting adjourned at 2:58pm

University College

Assessing the Processes and Outcomes of UC Academic Advising: Moving Beyond Satisfaction

Presented by:
 Michele J. Hansen, Ph.D., Director of Assessment, University College
 Cathy Buyarski, Ph.D., Assistant Dean and Director of Advising, University College
 Indiana University-Purdue University Indianapolis

PRAC Committee
March 23, 2006

University College

Presentation Overview

- Assessment Planning and Approaches
- Assessing Processes and Outcomes
- Highlights of Results

University College

Overall Assessment Approaches

- Sought involvement of key stakeholders in planning and implementation (formed advising assessment committee).
- Selected outcome measures that were valid, reliable, aligned with goals and learning outcomes.
- Attempted to understand what processes lead to particular outcomes: the why and the what.
- Employed qualitative and quantitative methods.
- Used multiple measures from different sources.
- Employed summative and formative approaches.
- Took steps to ensure results are linked to planning and decisions.

University College

Purpose of Advising Assessment

- Improvement in student learning/satisfaction
- Improvement in advisor training/satisfaction
- Efficiency and effectiveness in all areas
- Accountability

University College

Assessment Plan

- Stakeholders
- Purpose of Assessment
- Mapped out Processes
- Articulated Intended Goals
- Sources of Evidence
- Methods of Gathering Evidence

University College

Guiding Questions:

- Do students' perceptions of advising differ by background (e.g., gender, ethnicity, admit status, etc.) and advising experiences (e.g., whether students met with the same advisor or different advisors)?
- What have students have learned from their advising experiences?
- Have there been improvements in UC advising services over the years?

University College

Guiding Questions:

- What are students' perceptions of their advising experiences?
- What do students consider the most important aspects of their advising experiences?
- What aspects of the advising experience contribute to academic success variables and intended advising outcomes?

University College

Multiple Sources of Information

- Spring 2005 web-based survey (random sample of UC students)
- Pre-post questionnaire administered in First Year Seminar Courses
- Spring 2006 web based survey (students recently certified into schools)
- Spring 2006 survey for UC professional advisors

University College

Factor 1: Interaction Style

Item	Factor Loading
Item 11: Treats me with respect	.792
Item 13: Treats me fairly	.779
Item 14: Is a good listener	.764
Item 17: Is friendly	.761
Item 18: Is approachable	.740
Item 15: Is open-minded when making decisions	.688
Item 12: Is trustworthy	.673
Item 19: Shows genuine concern for me	.660
Item 16: Motivates me to do my best work	.576
Item 23: Provides adequate information	.539
Item 25: Makes my duties, responsibilities and obligations clear to me	.395

**Satisfaction scale $\alpha = .957$; **Importance scale $\alpha = .942$

University College

Factor 2: Knowledgeable

Item	Factor Loading
Item 4: Is knowledgeable about the degree requirements needed for a degree in my school	.820
Item 3: Is knowledgeable about the general requirements needed for a degree in my school	.812
Item 2: Understands my school's academic rules and policies	.753
Item 1: Understands university rules and policies	.708
Item 6: Is knowledgeable about the content of courses in my major	.675
Item 22: Provides accurate information	.559
Item 7: Is knowledgeable about when and how often courses in my major are offered	.550
Item 8: Is able to answer my questions about the graduation process	.506
Item 5: Is knowledgeable about the content of courses outside my major	.476

**Satisfaction scale $\alpha = .942$; **Importance scale $\alpha = .883$

University College

Factor 3: Student Familiarity

Item	Factor Loading
Item 29: Is familiar with my academic goals	.768
Item 27: Knows my name	.729
Item 30: Is familiar with my career goals	.706
Item 34: Is familiar with my academic progress	.684
Item 32: Treats me as an individual, not a number	.593
Item 28: Is able to help me set goals	.563
Item 33: Understands how my personal life affects my academic progress	.562
Item 31: Is willing to work with me to achieve my goals	.506
Item 26: Is well-prepared for our meetings	.403

**Satisfaction scale $\alpha = .945$; **Importance scale $\alpha = .911$

University College

Factor 4: Connections

Item	Factor Loading
Item 36: Is knowledgeable about how to conduct a job search	.764
Item 38: is knowledgeable about student organizations in my major	.657
Item 35: Is knowledgeable about career opportunities in my major	.592
Item 37: Is knowledgeable about whom to contact if he or she can't answer a question	.541
Item 24: Makes his or her duties, responsibilities and obligations clear to me	.519

**Satisfaction scale $\alpha = .896$; **Importance scale $\alpha = .854$

University College

Factor 5: Professionalism

Item	Factor Loading
Item 10: Is readily available	.764
Item 9: Is flexible in arranging meeting times with me	.749
Item 20: Promptly returns my phone calls	.680
Item 21: Provides information in a timely manner	.542

**Satisfaction scale $\alpha = .867$; **Importance scale $\alpha = .830$

University College

Factor 6: Academic Goal Facilitation

Item	Factor Loading
Item 39: helps me set concrete academic goals.	.766
Item 40: encourages me to continue to pursue my goals even when I encounter difficulties.	.607
Item 41: helps me develop alternatives when I face obstacles.	.551
Item 42: helps me develop my academic strengths.	.737
Item 43: helps me explore career and major alternatives.	.712
Item 45: discusses other campus resources as needed (e.g., Math Assistance Center, Writing Center, Mentoring, Career Center, Financial Aid).	.539
Item 46: makes useful referrals.	.677
Item 47: understands my unique needs and abilities.	.708
Item 48: understands the needs of students with diverse backgrounds (ethnicity, religious, income, gender, sexual orientation, etc.).	.679

**Satisfaction scale $\alpha = .959$; **Importance scale $\alpha = .939$

- University College
- ### Most Important Aspects to Students
1. Treats me with respect.
 2. Is trustworthy.
 3. Provides accurate information.
 4. Is knowledgeable about the general requirements needed for a degree in my school.
 5. Is knowledgeable about the degree requirements needed for a degree in my school.
 6. Is a good listener.
 7. Treats me fairly.
 8. Understands my school's (e.g., Liberal arts, business, public and environmental affairs, science, etc.) Academic rules and policies.
 9. Provides adequate information.
 10. Is approachable.

University College

Most Important Aspects to Students

	N	Mean
Factor 1: Interaction Style	330	4.19
Factor 2: Knowledgeable	289	3.97
Factor 5: Professionalism	282	3.87
Factor 4: Connections	298	3.83
Factor 6: Academic Goal Facilitation	262	3.77
Factor 3: Student Familiarity	318	3.76

- University College
- ### Most Likely to Experience/Satisfaction
1. Treats me with respect.
 2. Is friendly.
 3. Treats me fairly.
 4. Understands university rules and policies.
 5. Is trustworthy.
 6. Is approachable.
 7. Is a good listener.
 8. Is open-minded when making decisions.
 9. Provides information in a timely manner.
 10. Provides accurate information.

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Most Likely to Experience/Satisfaction

	N	Mean
Factor 1: Interaction	326	4.62
Factor 2: Knowledgeable	320	4.57
Factor 5: Professionalism	318	4.46
Factor 6: Academic Goal Facilitation	304	4.43
Factor 3: Student Familiarity	321	4.39
Factor 4: Connections	317	4.39

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Advising Processes Significantly Predict Spring Cumulative Grade Point Average

- Knowledgeable –
- Professionalism +

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Important Academic Success Outcome: Academic "Hope" Scale

- If I should find myself in a jam, I could think of many ways to get out of it.
- At the present time, I am energetically pursuing my academic goals.
- There are lots of ways around any school-related problems that I am facing now.
- I can think of many ways to reach my current academic goals.

adapted from Snyder, Sympton, Ybasco, Borders, Babyak, and Higgins, 1996. 6-item scale; coefficient alpha of .888.

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Theoretical Model

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    graph LR
      A[Advising Processes:  
Academic Goal Facilitation] --> B[Academic Hope]
      B --> C[Academic Performance  
(cumulative grade point averages)]
  
```

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Statistically Significant Relationships

Advising Process or Characteristic	Outcome for Students
Interaction Style	Accept responsibility for achieving academic goals
Knowledgeable	Know the process of getting into a degree granting school
Connections	Selected a major or future career
Student Familiarity	Feel a sense of belonging at IUPUI

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Multiple Regression Results: Factors That Predict Overall Satisfaction

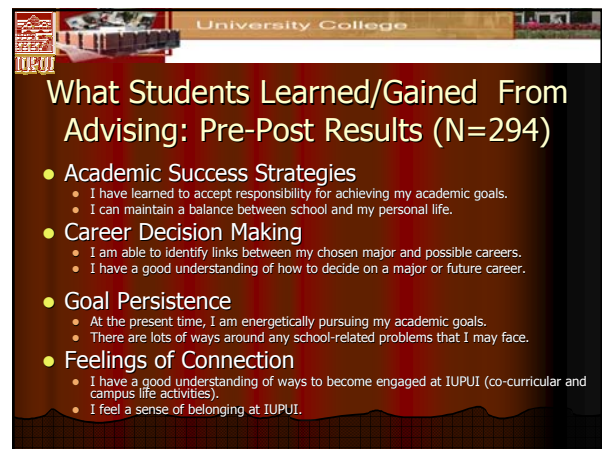
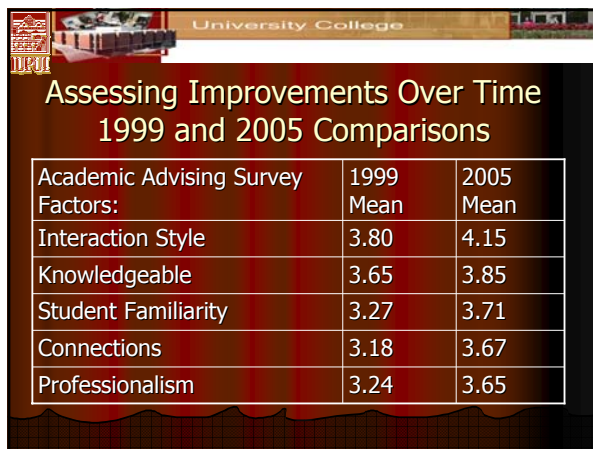
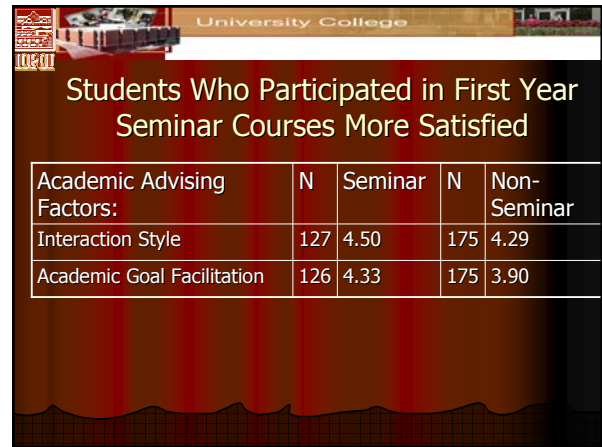
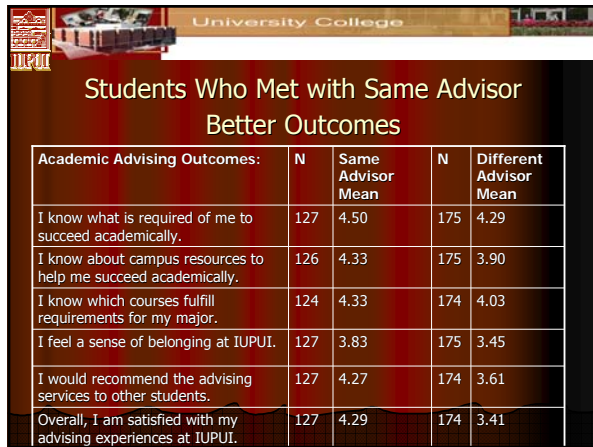
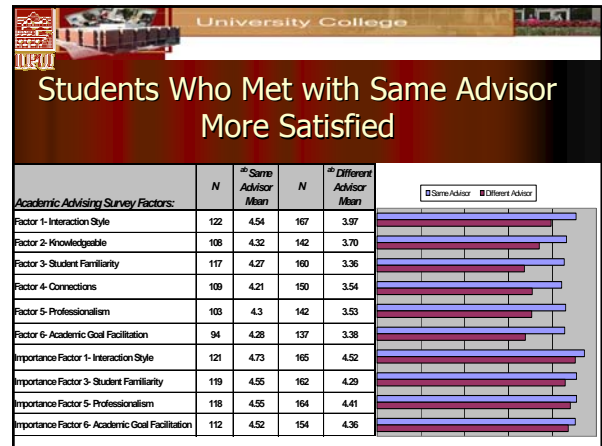
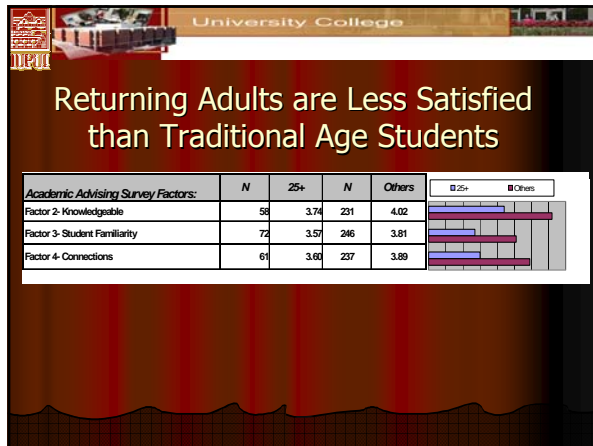
Criterion Variables	Std. Beta Weight	t	df	prob.
Factor 1: Interaction	.224	2.073	194	.040
Factor 2: Knowledgeable	.098	1.072	194	.285
Factor 3: Student Familiarity	.328	2.461	194	.015
Factor 4: Connections	.014	.117	194	.907
Factor 5: Professionalism	.024	.285	194	.776
Factor 6: Goal Facilitation	.117	.994	194	.321

(adjusted R² = .560, F(6, 194)=42.132, p<.0001).

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Group Differences

- Ethnic minority students (African American, Latino/a, and Asian Americans) consider Interaction Style more important than other students [(means=4.32 (60) and 4.16(266) respectively)]



University College

Significant Predictors of Fall 2005 Grade Point Average (N=358)

- Academic Goal Setting (e.g., "I have a good understanding of my academic goals.")
- Academic Success Strategies (e.g., "I can maintain a balance between school and my personal life.")
- Confidence in Degree Completion (e.g., "I feel confident that I will complete my degree in a timely manner.")
- Academic Goal Persistence (e.g., "At the present time, I am energetically pursuing my academic goals.")

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Students Who Were Recently Certified Into a Degree Granting School

- How did your UC advisor/advisors assist you in making your career/major decision?
 - "I asked questions about fields of interest and they gave educated answers."
 - "They helped me choose classes that would work for me and my needs."
 - "My advisor gave me useful information that related to my future career."
 - "They were very helpful in making career choices for graduation."

University College

Students Who Were Recently Certified Into a Degree Granting School

- How did your UC advisor/advisors assist you in making your career/major decision?
 - "Did not assist in me making my career or major decisions."
 - "Did not seem to be aware of the best classes to prepare me for Kelley School of Business."
 - "The information given was pretty vague, and some even incorrect. I was told that the degree program I wanted was not available in the fashion I wanted to take it, when in all actuality it was!"

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Expectations Compared to Reality

- PRE N=661; POST N=392
- PRE: "Please list three specific things you expect to obtain from your relationship with an academic advisor:"
- POST: "Please list three specific things you obtained from your relationship with an academic advisor"

University College

Assistance with Academic Plan and Major Placement Top Response on Pre and Post

- Pre
 - "Helping me make the right choices pertaining to school."
 - "Help me set up my schedule and what is required."
 - "Help me better understand the process of getting into nursing school."
 - "Learn more about my major."
 - "Getting through my degree in a timely manner."
 - "What classes are best for me."
- Post
 - "How to apply for nursing."
 - "Registration for Nursing."
 - "Selecting a major."
 - "Credit requirements."
 - "An understanding of my major."
 - "I know now what classes I need."

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Relationship or Connection with an Advisor Second Top Response on Pre and Post

- Pre
 - "Respect."
 - "A comfortable relationship so I can feel free to ask questions."
 - "Friendship."
 - "Feeling more welcome and like I have a purpose here."
 - "An encouraging academic advisor."
 - "Support (someone supportive of my choices)."
 - "Easy to talk to."
- Post
 - "Felt like my needs were taken into consideration."
 - "I have a rapport with my advisor."
 - "Encouragement."
 - "Personal interest of advisor is appreciated."
 - "Friendship - I feel I can discuss anything with her."
 - "Able to talk to without being nervous."
 - "Knew me on a name basis."
 - "Someone to talk to, since you are in our UCOL class and we get to talk to you."

University College

Students Placed Much More Emphasis on College Adjustment and Skills in Post Survey

- "Showed me how to manage my time."
- "How to manage a stressful academic career."
- "Study skills."
- "Test-taking strategies."
- "Make your own decisions."
- "How to calculate GPA."
- "New view on how to handle myself."
- "Ways to succeed."
- "Help fitting in as a freshman."
- "New ways to deal with stress."

University College

Important Considerations

- How can we effectively assess the processes and outcomes of UC advising?
- What are we learning from assessment results?
- How can we leverage assessment results to improve advising?
- How can we sustain the momentum for quality assessment when the self-study is completed?

University College

<http://uc.iupui.edu/staff/research.asp>

University College
Promoting academic excellence and enhancing student persistence

UCOL Organization | Programs | **Research & Assessment** | Policies | Publications

Faculty & Staff

Research & Assessment

Research & Assessment
 First-Year Seminars
 UCOL 0110
 Learning Communities
 Critical Inquiry
 UCOL 0112
 Summer Academy Bridge
 Honors
 Reviews
 Research Projects
 Faculty Fellowships
 UCOL Research Support
 Institutional Research (IRSI)

University College includes numerous support programs, grant initiatives, and academic courses. In order to facilitate on-going communication with the campus community and outside constituencies concerning the effectiveness of all programs in contributing to student success, University College developed a comprehensive assessment plan, which includes qualitative and quantitative methodologies for evaluating particular program components, operations. The three-phase approach model incorporated by University College includes an assessment of needs, processes, and outcomes.

Virtually all of University College's programs, including orientation, advising, student mentoring, learning communities, academic support for gateway courses, summer bridge, and honors are completed in cooperation with other undergraduate schools and units. Assessment results are used to continuously improve programs and to ensure unit mission alignment.



Indiana University School of Social Work

**Report for the IUPUI Program
Review & Assessment
Committee
March 23 , 2006**

Agenda

In today's presentation, we will cover:

- A brief overview of our School;
- Multiple assessment methods;
- Lessons learned;
- Example of an assessment project at the course level.

Indiana University School of Social Work (IUSSW)

- ❑ As a system school, IUSSW sponsors:
- ❑ Bachelor of Social Work (BSW) Programs on three IU Campuses (IUB, IUE & IUPUI)
- ❑ Master of Social Work (MSW) Programs on four IU Campuses (IUPUI, IUN, IUSB, FW)
- ❑ Doctor of Philosophy (Ph.D.) in Social Work Program at IUPUI
- ❑ BSW courses in Columbus & Kokomo

IUSSW [cont.]

- ❑ Multiple Course Sections.
- ❑ Eight-to-nine-hundred students.
- ❑ More than 45 Full-Time and more than 50 Part-Time Instructors.
- ❑ More than 50 Required Courses - Most Offered in Multiple Sections and on Several Indiana University Campuses.
- ❑ Online courses at the undergraduate level.

General Outcomes of our School Programs

BSW Program prepares students for:

- ▣ Generalist social work practice;

MSW Program prepares students for:

- ▣ Advanced clinical practice in child welfare, families, health, mental health and addictions.
- ▣ Advanced macro practice in leadership.

Ph.D. Program prepares students for:

leadership roles in research, education, and policy development.

Purpose of Assessment

Assessment is viewed as both:

- ❑ Formative and summative:
 - Performance review followed by feedback
 - Provide judgment about the program...

That is

- ❑ a way to improve quality, and
- ❑ a means to demonstrate goal achievement and outcomes

Assessment Road Map

The School has established an assessment road map that:

- ❑ Promotes a cohesive vision about the goals and role of assessment in our School among faculty and other school constituencies.
- ❑ Promotes assessment as a central component of what we do.
- ❑ Develops a systematic and on-going view of assessment that includes processes and outcomes.

Assessment Methods

- ❑ A Course/Instructor & Student Learning Assessment (CISLA) System.
- ❑ Course Learning objectives (CLO) classification System & Database.
- ❑ Baccalaureate Education Assessment Project (BEAP).
- ❑ Alumni surveys.
- ❑ Focus groups with different constituencies.
- ❑ Assessment by Program Committees.
- ❑ Retreats focused on assessments.
- ❑ Input from School Advisory Committee.

Assessment Methods [cont.]

- Classroom Assessment Techniques (CATs)
- Individual student assessment in the classroom.
 - Student produced media such as videotaped real or simulated interviews;
 - Poster presentations;
 - Written products such as essays, reports, papers, dissertations, research projects; etc.

Assessment Methods [cont.]

- More than ten years ago, the School assumed control of the course/evaluation system.

- The School also instituted several key changes:
- First, “common course/instructor assessment items” were selected for use:
 - In all social work courses

 - In all social work programs (e.g., BSW, MSW, Ph.D.)

 - On all Indiana University campuses where social work courses are offered.

Assessment Methods [cont.]

- ▣ **Second**, the course objectives for each course were added to the instrument.
 - The course-objective related items enable students to assess the degree of learning in relation to each course learning objective.
- ▣ These **two changes** led to the production of individualized **course/instructor & student learning assessment (CISLA)** instruments for each social work course.

Assessment Methods [cont.]

- Each End-of-Semester CISLA Instrument is individualized by course and contains:
 - 22 Standard or Common Items for All Social Work Courses.
 - Items Related to Each Discrete Course Learning Objective.

Assessment Methods [cont.]

- ❑ The 22 Standard or Common Items allow for easy analysis and comparison by factors such as program, campus, course level, semester, year, program format (full-time, part-time, evening,..)
- ❑ Responses to the Course Learning Objective (CLO) related items yield students' self-assessment of the degree to which they accomplished the course learning objectives contained in the syllabus. They also can be used for analysis and comparison.

Assessment Methods [cont.]

- ❑ The Testing Center analyzes the responses to the CISLA Instrument.
- ❑ Each individual faculty member receives descriptive statistics related to the courses s/he taught.
- ❑ In order to provide context for faculty specific results, aggregated descriptive statistics are also provided for all sections of the particular course and for all courses in the relevant program (e.g., BSW, MSW, Ph.D.)

Assessment Methods [cont.]

- Program Directors review the responses prior to forwarding the results to the appropriate faculty person.
- The Dean and Program Directors also receive summary descriptive statistics (e.g., school as a whole, program as a whole, campus scores, part-time versus full-time, etc.) as needed or requested


Course Learning Objectives (CLO) Classification System and Database

What does the Course Learning Objectives Classification System do?

- It assesses the
 - Relationship of course learning objectives (CLO) to Schools goals.
 - Relationship of CLO to program goals.
 - Relationship of CLO to program objectives
 - Relationship of CLO to CSWE
 - Relationship of CLO to Boom's taxonomy.
 - Other dimensions, i.e. PUL

Before Classification Took Place....

- We went through a number of preliminary steps
 - Development of a shared School mission
 - Development of each program shared:
 - Vision
 - Mission
 - Goals
 - Objectives
 - Shared evaluative instruments



Assessment Methods [cont.] Course Learning Objectives (CLO) Classification System & Database

- The CLO Classification System & Database facilitate curriculum:
 - organization;
 - planning;
 - development, and
 - assessment.

Assessment Methods [cont.]

- Baccalaureate Education Assessment Project (BEAP). This assessment packet includes:
 - Entrance Survey
 - Social Work Values (pretest)
 - Exist Survey
 - Social Work Values –Posttest
 - Alumni/ae Survey
 - Employer Surveys

Other Assessment methods [cont.]

- Other assessment mechanisms include:
 - Student produced media such as videotaped real or simulated interviews.
 - Written products such as essays, reports, papers, dissertations, research projects.
 - Peer reviews
 - Of students
 - **Of faculty**

Other Assessment methods [cont.]

- Surveys
- In the last five years several focus groups took place to assess:
 - Technology needs
 - MSW curriculum
 - Needed Gerontology content in the BSW and MSW curricula
 - Online teaching and learning

Utilization

- Faculty use the results of their assessment activities to:
 - Modify and enhance the quality of their learning processes and activities (e.g., curriculum & instruction), and improve student learning outcomes.
 - Make changes in course descriptions and objectives, create new courses, curriculum changes, etc.

Faculty Role in Assessment [cont.]

- Assessment is seeing as an on-going process and as such the faculty devotes a significant amount of time in assessment processes.
- Faculty may devote less time to writing assessment reports which are seeing more as an administrative responsibility.

Lessons Learned

- Based on the literature and our experience with assessment we are learning important lessons:
 - Emphasize student learning as a guiding focus for school and program activities.
 - Foster development of a “culture” where “assessment” activities are “natural” and “routine”.

Lessons learned [cont]

- Engage in self-assessment activities.
- Use assessment data in decision making processes.
- Involve as many stakeholders as possible (e.g., faculty, students, agency employers, graduates) in developing assessment approaches.

Lessons learned [cont]

- ❑ Share our assessment approaches with others. Most recently we created the Office of Educational Assessment (OEA)
- ❑ We provide independent analyses of programs' curricula.
 - Based on the data programs may choose to change
 - ❑ Mission statement
 - ❑ Goals
 - ❑ Program objectives
 - ❑ Learning objectives

Example of Classroom Assessment

Presented by Dr. Khadija Khaja



Program Review and Assessment Committee

Thursday, April 13, 2006

UL 1116

1:30-3:00 p.m.

Karen Johnson, Chair

Joshua Smith, Vice Chair

Susan Kahn, Recorder

AGENDA -

1. Approval of the minutes of the March meeting K. Johnson
2. Report on Integrative Department Grant, School of Education J. Smith and
J. Bohnenkamp
3. Assessment Strategies Presentations..... W. Agbor-Baiyee
L. Houser and S. Kastberg
4. Subcommittee Reports
Grants L. Houser
Program Review..... D. Boland
ePort..... S. Hamilton
5. Update on PRAC year-end report K. Johnson
6. Adjournment..... K. Johnson

MINUTES -

Members Present: W. Agbor-Baiyee, K. Baird, T. Banta, K. Black, D. Boland, J. Chen, Y. Fu, S. Hamilton, M. Hansen, A. Helman, L. Houser, K. Johnson, S. Kahn, J. Mac Kinnon, A. Martin, C. McDaniel, M. Meadows, H. Mzumara, J. Orr, K. Rennels, I. Ritchie, K. Schilling, J. Smith, R. Vertner, M. Wokeck, C. Yokomoto, and N. Young

Guests Present: Julie Bohnenkamp (School of Education) and Signe Kastberg (School of Education)

Minutes of the March 23rd meeting were approved with one correction: the spelling of “Kelly” in “Kelley School of Business” will be corrected to include the second “e.”

Report on Integrative Department Grant

J. Smith and J. Bohnenkamp from the Department of Secondary Education in the School of Education reported on the two-year Integrative Department grant from the Center on Integrating Learning (and distributed the RFP for next year’s round of grants). The purpose of the two-year grant is to incorporate the ePortfolio across the Secondary Education curriculum. Smith and Bohnenkamp explained that ePort aligns well with the department’s current efforts to develop a more cohesive program, including mapping the

SOE's Principles of Teacher Education (PTEs) to IUPUI's Principles of Undergraduate Education. During this first (planning) year, the department has identified key assignments that demonstrate the PTEs, focusing especially on strengthening students' preparation to create and use instructional technologies. The grant has provided opportunities for faculty discussion and identification of "disconnects" in the curriculum and has been beneficial both for program assessment *and* feedback to individual students.

The second year of the grant is designated for implementation. To support this, the department will hire someone to train faculty to use the ePort and will buy equipment to allow for storage of video files in ePort. The presenters noted that the support provided by the Center for Teaching and Learning for planning and implementation has made the grant worth far more than the actual \$5,000 awarded.

In response to a question about what happens to student artifacts stored in ePort, S. Hamilton explained that the facility for students' individual ePorts to carry over from one semester and course to others is under construction. Graduates will have access as long as they are paid members of the Alumni Association. L. Houser noted that the use of videos that show students actually teaching is exciting, since the SOE is held accountable not just for students' knowledge, but for their skills as well.

Assessment Strategies Presentation

W. Agbor Baiyee began this segment of the meeting with a presentation on the Master of Science in Medical Science program in the School of Medicine. The purpose of this degree program is to increase the diversity of the student body in the M.D. program by preparing students for medical school. The two-year program includes MCAT preparation, extensive academic advising, and an emphasis on critical thinking and collaboration (vs. competition). The program has three major components: lecture-based, didactic experiences; problem-based learning courses; and a research course that culminates in a research presentation. The student body includes more female than male students, more non-Indiana residents than residents, and a high percentage of African-Americans.

Program outcomes demonstrate that the program is succeeding in achieving its goals. Seventy percent of participants to date have gained admission to medical school, either at IU or elsewhere. Those who have gone on to medical school here have a 93 percent retention rate. Several other graduates have continued on to Ph.D. programs, law school, and pharmacy school. Those in medical school have praised the preparation they received in the MSMS program.

Next Houser spoke about the Benchmark II Assessment in Elementary Education. Benchmark assessments occur at key points as students progress through the Elementary Education program. They are intended to determine whether students can apply skills, knowledge, and dispositions acquired from coursework to real-life teaching situations. They are performance based and are not part of any course. Students are not required to "pass" the assessments in order to graduate.

The Benchmark II Assessment occurs when students are halfway through the program and focuses on connecting mathematical content and pedagogical knowledge to student

learning. It specifically assesses Elementary Education interns' ability to determine children's conceptual understanding of place value, an understanding considered key to math competence. Interns' performances are videotaped and assessed by means of a rubric. In six years of use of this particular assessment, some students who did not pass it have gone on to graduate from the program. In fact, initial outcomes of the assessment were poor and suggested that students were not adequately prepared. As a result, the Benchmark II has provided evidence to support the need for programmatic change—in this case, the addition of a methods course and other curriculum changes.

Subcommittee Reports

PRAC Grant Subcommittee: Houser reported that the committee has approved funding for three PRAC grants in 2006-2007.

- Anthony Faiola, Assessing One Core Course in Informatics: Establishing Competencies and Outcomes for Human-Computer Interaction1 (I541)
- Kimmaree Murday, Evaluation of Hybrid-Distance Elementary Spanish Courses
- Sara Horton-Deutsch and Angela McNelis, The Assessment of a Clinical Preceptor Course for Psychiatric Nursing Programs

Program Review Subcommittee: D. Boland reported that the committee plans to host two meetings this fall to facilitate the program review process. One meeting will focus on using institutional data in preparing the self-study report; the second will be a reflective exchange between programs that have gone through the process recently and those preparing for it.

PRAC ePort Subcommittee: Reporting on behalf of S. Hamilton, S. Kahn noted that during this academic year the ePort Subcommittee has worked on prompts for reflections at key points in students' IUPUI experience.

PRAC Year-End Report

K. Johnson asked subcommittee chairs to submit written reports to her on subcommittee activities this past year; these will be included in the annual PRAC report, which will be posted on the PRAC web site. She will send out a reminder e-mail.

PRAC Questionnaire

T. Banta explained that the questionnaire that was e-mailed to PRAC members was intended to probe their opinions of assertions made about IUPUI's assessment program in a recent study. Members who have not yet had a chance to complete the very brief questionnaire are asked to do so at their earliest convenience and return it to Banta's office.

The meeting adjourned at 3:00 p.m.

Benchmark II Assessment

Partially Funded by AACTE

Indiana University
School of Education
Indianapolis

Project Focus

- MATHEMATICAL CONTENT AND PEDAGOGICAL KNOWLEDGE FOR ELEMENTARY MAJORS AND THE CONNECTION TO P-12 STUDENT LEARNING

Using Benchmarks for Assessment

- Benchmarks -Assessments to determine if candidates can take the skills, knowledge, and dispositions they have learned from their courses and “put them together” and “teach.”
- Performance-based
- External to class assessments
- Occur at key points as candidates move through the program.



Elementary Benchmark II

- At the end of Block II of a four-block program
- 90-120 per semester
- Used by the unit for 6 years
- Grounded in conceptual understanding of place value
- Rubric developed and used to answer three focus questions
- Has provided evidence for programmatic change early in its use
- Submitted electronically

Benchmark II

- The performance task is designed to assess interns' abilities to analyze children's conceptual knowledge and to demonstrate that the interns can engage learners in a two-way conversation that allows the interns to assess the children's grasp of a mathematical concept. Interns are asked to identify good follow-up experiences for the learner and self- assess their own effectiveness as an interviewer.

Interns Are Asked To:

- Choose a child who is likely to be responsive and secure permission to tape record a conversation about a mathematical concept. (This is normally the “study buddy” from their field placement.)
- Plan a specific mathematics activity or set of questions as an entry point into the interview and choose an activity/questions that will help them discover how the child thinks about **Place Value**. They are to plan the questions and tasks they will pose to the child.
- Engage the child in a conversation while doing the activity and probe the child's understanding with questions and problems. This is not a teaching exercise, but an assessment interview, and the intern is to try to understand the child's grasp of place value. They tape-record their interactions with the learner.
- Listen to the tape and determine which segments are most significant and transcribe up to **four pages** of the conversation. Use I: (Intern) and C: (Child) to identify the speakers. They do not use names.

The Student and Context:

- Include age and grade, gender, setting, your professional relationship to the student, and any other important information.

The Concept and Learning Activity:

- Explain the important mathematics underlying the understanding of place value at the age and grade level of your child. Explain why you selected the activities and questions posed for your student. What did you predict you would learn from the child while doing this activity?

Analysis of the Child's Grasp of the Concept:

- Draw on what you have read and experienced in Block I and Block II classes to analyze the child's actions and comments. What understandings has the child constructed? (Use quotes from the transcript or observations to provide specific support for your assessment of the child.) What is confusing or missing in the child's thinking about the concept? What are the strengths of the child's thinking? How do you know? Use readings and professional literature to support your interpretations of the child's understanding.

Curricular Implications:

- What would you do next with this student to help extend or develop the child's understanding of place value? Why? Do you have follow-up questions or predictions to check? Have any of your own ideas about place value changed as a result of this activity?

Evaluation of the Interview:

- Assess the quality of your engagement with the child and your effectiveness as an inquirer attempting to understand the student. Does the interview yield meaningful insight into the learner? What are you missing? What can you observe about your own strengths and weaknesses as an interviewer? Do you see any missed opportunities when you reflect on the interview?

Appendices:

- Interview Transcript
- Student Work

Scoring the Benchmark II

- Each benchmark is “blind-scored” by two scorers electronically
- All scorers have been trained and inter-rater reliability studies conducted
- All interns are given detailed feedback from the scorers.
- Those “failing” the benchmark attend sessions the following semester and complete a follow-up activity

Guiding Questions

- The intern’s mathematical knowledge has the potential to support student thinking about mathematics with understanding.
- The intern is beginning to understand how to assess student thinking using interviews. (attends to student responses, bases comments on evidence from data, uses questions to probe student thinking).
- The intern has intellectually engaged in making sense of material from Block I & II (respect for students, child centered, bases follow-up on evidence).

Moving Forward A Step Grant

- Investigation of the relationship of data, previously collected from Benchmark II, and student learning once the candidates have entered the teaching profession.

Participants

- Eight graduates of the elementary teacher education program
- Teachers in grades K-5
- Benchmark II data available
- Some did not “pass” the Benchmark II
- Follow-up data available

Activities

- Design a unit which focuses on the teaching of place value and which is grounded in the Indiana K-12 Academic Standards.
- Design a mathematical assessment for the unit and teach the unit during the spring semester.
- Collect student work focusing on students’ conceptual understanding of place value prior to teaching the unit.
- Collect samples of student work throughout the unit and at the end of the unit
- Complete training as scorers for Benchmark II

Evidence

- The research team will examine the unit plans of each teacher/participant and evaluate activities proposed regarding:
 - Potential to support developing understanding of place value
 - Appropriateness for age/grade
 - Rationale provided for using activities
- A description of each teacher’s/participant’s understanding of place value and the development of place value understanding of children will be generated using the evidence drawn from the unit.

Evidence

- The research team will examine field notes collected by team members and evaluate implementation of activities regarding:
 - leading children to an answer
 - potential of questions posed to the children to support developing understanding of place value
 - probing for more information about a child's thinking
 - sensitivity toward children

Research Cases

- Description of each teacher's understanding of place value and dispositions toward students.
- Students' development of place value understanding.

Julia-Excerpts from Benchmark II

- Next, I wrote 467 on a piece of paper and asked her to use the manipulatives to give me that particular amount. Using different representations indicates her knowledge of place value, again because of grouping the same amount in different ways.
- I then asked the student to make the largest and smallest numbers possible using the digits 2, 9, and 6. I asked this question to further investigate her understanding of the multiplicative characteristic of place value because the largest digit would be multiplied by the place value making the largest or smallest number. I predicted she would come up with 962 and 269.

Julia-Standards

- 2.1.2 Identify the pattern of numbers in each group of ten, from tens through nineties.
 - Example: What pattern do you see on a hundreds chart for the numbers 12, 22, 32, etc.?
- 2.1.3 Identify numbers up to 100 in various combinations of tens and ones.
 - Example: $32 = 3 \text{ tens} + 2 \text{ ones} = 2 \text{ tens} + 12 \text{ ones}$, etc.
- 2.1.5 Compare whole numbers up to 100 and arrange them in numerical order.
 - Example: Put the numbers in order of size: 95, 28, 42, 31.

Julia-Assessment Tool

Question 2

Using base ten blocks: Are you familiar with using base ten blocks?

Are these two amounts equal? (have 3 longs, 1 unit; 2 longs, 11 units)

How did you decide?

Is there another way to represent this amount?

How can you write out that number? (using words)

Question 3

97

Can you show me what (point to paper with 97 on it) means using these materials (base ten blocks)?

If yes...

Can you think of another way to show 97 using these materials?

Another way?

What We Hope to Learn

- Is performance on Benchmark II predictive of the ability to "teach" all children?
- Can performance on Benchmark II be tied to graduates' ability to facilitate student learning?

Measures of Success of an Academic Program

William Agbor-Baiyee, Ph.D.
Assistant Professor, Department of Family Medicine
Director, Master of Science in Medical Science Program
Director, Special Programs, Medical Student Affairs
Indiana University School of Medicine

Thursday, April 13, 2006

A Presentation to the IUPUI Program Review and Assessment Committee

Presentation Focus Points

- Introduction
 - Indiana University School of Medicine (IUSM) - General Information
 - IUSM - Degree-Granting Programs
- The Master of Science in Medical Science (MSMS) Program
 - Mission
 - Objectives
 - Administration
 - Academic Experience
 - Enrollments
 - Outcomes
 - Cost
- Concluding thoughts

Introduction

- IUSM - General Information
 - Mission: Indiana University School of Medicine, the second largest US medical school, seeks to advance health in the State of Indiana and beyond by promoting innovation and excellence in education, research, and patient care
 - Core Values: Excellence, Respect, Integrity, Diversity, and Cooperation
 - Distributed Medical Education Centers: Indianapolis (main campus), Bloomington, Evansville, Fort Wayne, Gary, Muncie, South Bend, Terre Haute, West Lafayette

Introduction (cont'd)

- IUSM - Degree-Granting Programs
 - Undergraduate Programs: Clinical Laboratory Science, BS; Cytotechnology, BS; Histotechnology, Certificate and AS; Medical Imaging Technology, BS; Nuclear Medicine Technology, BS; Paramedic Science, AS; Radiation Therapy, BS; Radiography, AS; and Respiratory Therapy, BS
 - Graduate Programs: Most MS and PhD degrees are offered by the IU Graduate School
 - Professional Programs: Medicine, MD; Public Health, MPH; and Medical Science (MSMS)

The Master of Science in Medical Science Program

Mission

- Indiana University School of Medicine established the Master of Science in Medical Science (MSMS) Program in 1995 to provide a unique academic experience for the student to develop into a confident and prepared person ready for the challenges of medical school and the practice of medicine



Objectives

- To increase the diversity of IUSM's student body
- To promote the future academic success of MSMS Program participants in the medical school curriculum by providing an introductory graduate level instructional program in the basic medical sciences
- To enhance successful admission of especially disadvantaged applicants to IUSM

Administration

- Executive Associate Dean for Educational Affairs
 - Ensures compliance with medical school's academic standards
- Faculty Advisory Committee
 - Ensures that the MSMS Program curriculum is relevant and challenging
 - Provides oversight on matters of academic policy and student progress
- Admission Advisory Committee
 - Responsible for interviewing, reviewing and recommending prospective students to the IUSM Admissions Committee
- Program Staff
 - Program Director aided by a staff are responsible for daily operations of the MSMS Program

Academic Experience

- MCAT Preparation Program
 - 10-week intensive academic preparation for the MCAT
 - Runs from June through August
 - Curriculum: Biology, General Chemistry, Physics, Organic Chemistry, Verbal Reasoning, and Writing
 - Students spend 32.5 hours per week in formal instruction and tutorial sessions
 - Development of critical thinking skills is stressed
 - Academic advising is an integral component of programming
 - Average overall increase of 3 points on the test

Academic Experience (Cont'd)

- MSMS Program
 - The 2-year program's 36 credit hours include didactic and laboratory graduate medical science courses taught by IUSM faculty, collaborative problem-based learning and a research experience
 - Curriculum, Year 1: Biochemistry; Histology; Physiology; Functionally-Oriented Human Gross Anatomy; Infectious Microbes and Host Interactions; and Problem-Based Learning (PBL) in Medical Science

Small Group Learning



Student Research Presentations



Academic Experience (Cont'd)

- MSMS Program (cont'd)
 - Curriculum Year 2: Basic Human Genetics; Regenerative Biology and Medicine; Drugs, Diseases and Poisons; Neurobiology; and Guided Research in Medical Science
 - Students must maintain a B (3.0) grade point average in the program
 - Academic advising is an integral component of programming
 - First and second year students may apply for medical school admission

Current First Year MSMS Students



2004 Cohort and 2005 Graduating Class



Outcomes: Medical School Admission

	1995	1996	1997	1998	1999	2000	2001	2002	2003	Totals
Class Size	12	14	10	12	17	18	21	14	17	135
IUSM	6	5	4	7	3	10	8	4	8	55 (41%)
Other	2	7	1	2	6	7	9	4	2	40 (29%)
Total	8	12	5	9	9	17	17	8	10	95 (70%)

Outcomes: Medical School Admission (Cont'd)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	Totals
Class Size	12	14	10	12	17	18	14	21	14	135
After year 1	5	6	5	5	6	13	12	6	7	60 (44%)
After year 2	3	6	--	4	3	4	5	2	3	35 (26%)
Totals	8	12	5	9	9	17	17	8	10	95 (70%)

Outcomes: Placement in Residency Programs from IUSM

	Cohorts						Totals
	1995 ^a	1996 ^b	1997 ^c	1998	1999	2000 ^d	
# Admitted	6	5	4	7	3	10	35 (26)
Anesthesia	3	--	2	1	--	--	6 (23%)
Emergency Medicine	--	1	--	2	--	--	3 (12%)
Family Medicine	--	1	1	1	3	--	6 (23%)
Medicine	1	--	--	--	--	1	2 (8%)
Med & Peds	--	--	--	1	--	--	1 (4%)
Obst & Gynecology	--	--	--	--	--	1	1 (4%)
Pathology	--	--	--	--	--	1	1 (4%)
Pediatrics	--	1	--	1	--	--	2 (8%)
Phys Med & Rehab	1	--	--	--	--	--	1 (4%)
Surgery	--	1	--	1	--	1	3 (12%)

a-1 student was dismissed; b-1 student was dismissed; c-1 student deferred her admission; d-1 student was dismissed; *additional data is pending

Other Outcomes

- Medical school performance
- Retention at IUSM (93%)
- Leadership in medical student organizations
- Medical student scholarship awards to former MSMS students at IUSM: Rawls scholarships, 4 students; Lilly Scholarship, 3 students; Army Scholarship, 3 students; Navy Scholarship, 1 student; National Health Service Corps Scholarship, 2 students; Indiana Primary Care Scholarship, 2 students
- Admission to alternative careers: Ph.D. Programs, 4 graduates; Indiana University School of Law, 2 graduates; education, 2 graduates; Pharmacy, 1 graduate; Lab technicians, 5 graduates
- 52 (39%) MSMS degrees awarded to the 1995-2003 cohorts

Other Outcomes (Cont'd)

■ Student satisfaction

- "...I just wanted to tell you that I have been accepted to IU School of Medicine!! I will never forget about the MSMS program! I will tell everyone my story and tell them how this experience has changed my life forever. God Bless You."
Joanna Renee' Fields, IUSM first year medical student
- "I chose this program because I felt it would offer me an unparalleled transition into medical school."
Selika Owens, IUSM second year medical student
- "I was so well prepared that I really felt my first year of medical school was a review of what I had learned the year I spent in the MSMS Program."
Robert L. King, IUSM fourth year medical student

Cost - 2005-2006

	Cr. hrs	Resident		Non-Resident	
		Cost/Cr.	Total	Cost/Cr.	Total
MCAT	4	187.50	750.00	531.75	2,127.00
MSMS – F1	12	214.95	2,579.40	620.40	7,444.80
MSMS – S1	9	214.95	1,934.55	620.40	5,583.60
	21		4,513.95		13,028.40
MSMS – F2	9	214.95	1,934.55	620.40	5,583.60
MSMS – S2	6	214.95	1,289.70	620.40	3,722.40
	15		3,224.25		9,306.00
	36		8,488.20		24,461.40

Concluding Thoughts

■ Possible Explanations for MSMS Programmatic Success

- Institutional support
- Faculty involvement
- Program management and leadership
- Academic advising
- Collaborative learning context
- Challenging and relevant academic experience
- Student engagement

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Program Review and Assessment Committee

Thursday, May 11, 2006

UL1126

1:30-3:00 p.m.

Karen Johnson, Chair

Joshua Smith, Vice Chair

AGENDA –

1. Approval of the April Minutes K. Johnson
2. Discussion of Annual Reports J. Smith and K. Johnson
3. PRAC Grant Report Mark Urtel
4. Discussion of PRAC Members' Survey K. Johnson and J. Smith
5. Update on PRAC Year-End Report K. Johnson
6. Report on ABET Criteria Study T. Banta
7. Adjournment K. Johnson

MINUTES –

Members Present: Drew Appleby, Rachel Applegate, Trudy Banta, Karen Black, Polly Boruff-Jones, Katie Busby, William Crabtree, Andrew Gavrin, Michele Hansen, Linda Houser, Karen Janke, Karen Johnson, Susan Kahn, Joyce Mac Kinnon, Howard Mzumara, Joanne Orr, Kenneth Rennels (Elaine Cooney), Joshua Smith, Russell Vertner, Debra Winikates, Marianne Wokeck, Charles Yokomoto and Betty Jones.

Guests Present: Mark Urtel

Minutes from the April meeting were approved without correction.

Discussion of Annual Reports

K. Johnson opened the meeting by asking PRAC members to talk about annual reports. Specifically, she asked members to describe how the reports were utilized in the units. J. Mac Kinnon described the annual report as a component of their larger strategic planning report. L. Houser indicated that the report was shared with the School's administrative team, but not the faculty at large. The findings of the annual report tend to reinforce what faculty already know from other assessment evidence. M. Hansen indicated that University College asks for an extension so they can incorporate GPA, retention, and other spring outcome data. D. Appleby opened a line of comments about how the annual reports support program review. He suggested that annual assessment reports would be more prominent in the reviews if departments made them available to the external/internal review team. K. Johnson echoed that sentiment and stated that during the English review, she inserted a link to the PRAC reports.

T. Banta inquired about the relationship between assessment work, PRAC member communication, and decisions about curriculum and instruction. Several members described built-in or ad hoc mechanisms for data-informed decision making around curricular issues. For example, R. Vertner talked about how the Kelley School of Business faculty have incorporated

PULs in the curriculum with a business spin. The Kelley Undergraduate Policy Committee looked at PUL assessment results and made changes in some course content and alignment. In February, there is an accreditation visit, which further facilitates the core campus relationship with IUB. He spoke about the strength of having a committee designated specifically to facilitate assessment initiatives. Other units including Engineering, Science, and University College reported that they had formal or informal assessment committees.

PRAC Grant Report

Mark Urtel reported the findings from his PRAC grant. He examined similarities and differences between students who completed H363 via distance or face-to-face delivery. Several years ago he was asked to develop an online course to help increase FTEs for his unit. He discovered that in the first few semesters, there was a bimodal distribution of grades in distance courses: lots of As and Fs. The major findings of the study demonstrate that for first-year students in distance education, grades were significantly lower and DFW rates higher than for first-year students in the face-to-face condition. Additionally, African-American students underperformed in the distance education condition. PRAC members asked both methodological and pedagogical questions to understand better the current results and how they are informing future course offerings.

PRAC Member Survey

K. Johnson led a discussion about the PRAC member survey that was conducted at the last meeting. T. Banta reiterated the catalyst for the survey—a study of assessment of general education at several institutions, including IUPUI, conducted by Richard Shavelson of Stanford University. S. Kahn created a survey based on sections from the Shavelson report to get a better handle on the local perspective. K. Johnson was concerned with faculty responses to items 2, 5, 6, & 7 and inquired how PRAC might look forward to increasing faculty understanding, visibility, and ownership of assessment at IUPUI. R. Vertner suggested that a monthly or bimonthly brown bag luncheon to discuss assessment strategy, process, and success might help colleagues not in PRAC to see/hear more about PRAC. C. Yokomoto added that effective assessment is a lot of work and until IUPUI faculty realize that assessment should be as valued as teaching and research, not much will change. M. Wokeck pointed out that communication was a real problem and that access to PRAC reports is difficult. She suggested a more intentional public relations effort that clearly makes a connection between IUPUI and the role of PRAC. The conversation ended with a consensus that a more concerted effort to recognize the importance of assessment is necessary at all levels (unit, school, and university).

Report on the Effectiveness of ABET Criteria

T. Banta recognized C. Yokomoto's retirement, noting his unwavering commitment to assessment and leadership on PRAC. She thought it appropriate to end the year with sharing the results of a path-breaking report from ABET. It demonstrates how assessment makes a difference in students' learning outcomes. Penn State conducted a four-year study to reflect the impact of the ABET shift to accreditation based on learning outcomes assessment as opposed to looking primarily at curriculum and courses. Results are based on feedback from employers, 200 program chairs, 3,000 faculty, 40 Deans, 1994 and 2004 graduates (13,000 each) and 1,600 employers. Chairs/faculty reported seeing increased skill and knowledge on the learning outcomes, including increased active learning. Employers stated that 2004 graduates are better prepared on several indicators, particularly on learning outcomes defined in the new ABET standards. The study represents the first large scale study that shows clearly the benefits of effective assessment in improving student learning.

Meeting adjourned at 3:07 p.m.

ENGINEERING CHANGE

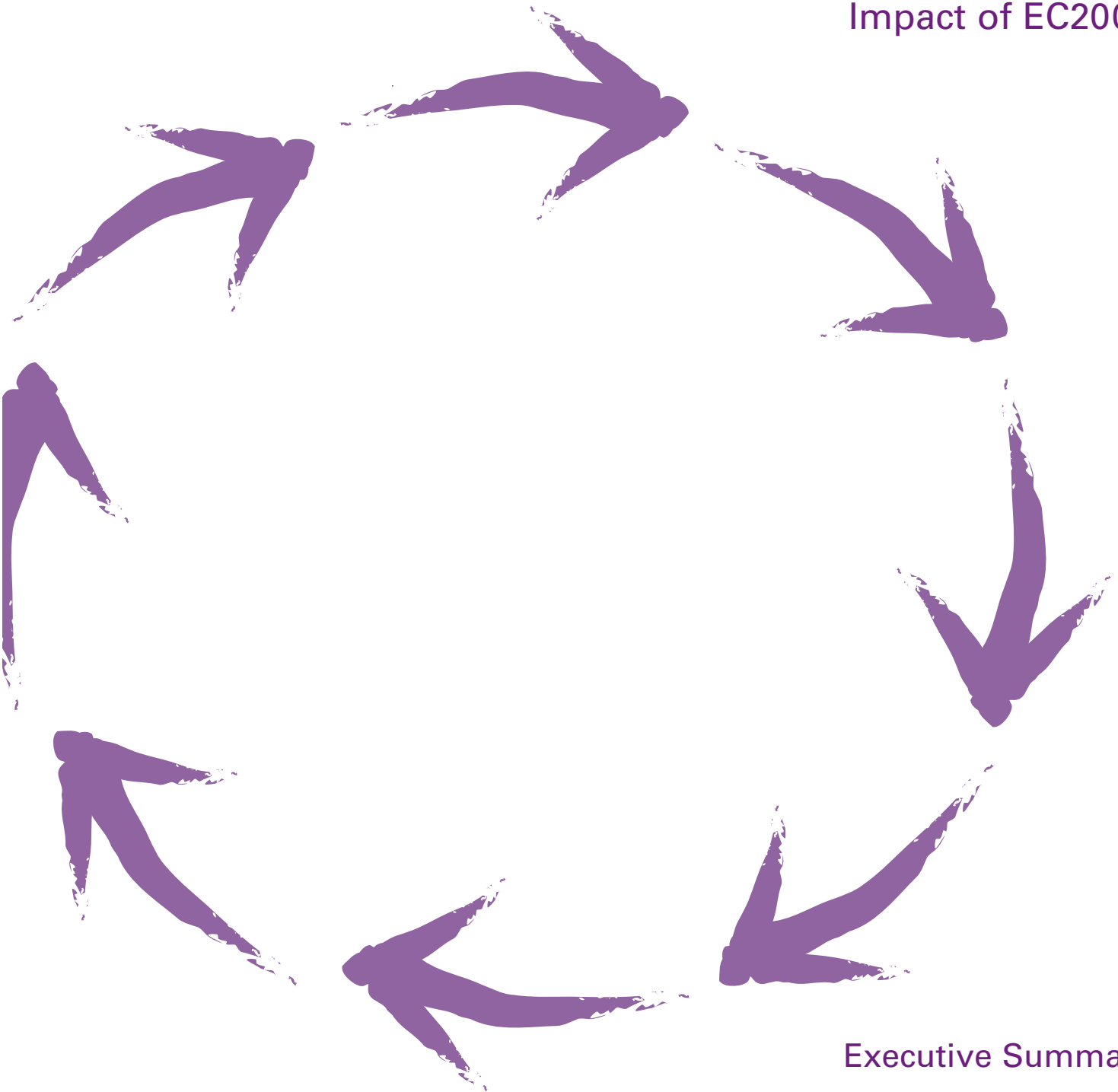
A Study of the
Impact of EC2000



Executive Summary

ENGINEERING CHANGE

A Study of the
Impact of EC2000



Executive Summary

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Acknowledgements

A study of this complexity and magnitude requires the assistance of a large number of organizations and individuals. We wish to acknowledge the many and important contributions of the following to the success of this study:

- The 28 professional and technical societies that constitute ABET, Inc., and thus supported this study.
- Those societies representing the seven disciplines on which this study focused, for their endorsements and assistance, and their members who responded to the survey of engineering employers: The American Institute of Aeronautics and Astronautics, the American Institute of Chemical Engineers, the Institute of Electrical and Electronics Engineers, Inc., the American Society of Civil Engineers, the American Society of Mechanical Engineers, and the Institute of Industrial Engineers.
- The American Society for Engineering Education for access to its engineering program database, which enabled us to identify and specify the study population and develop our sampling design.
- The National Science Foundation for its financial support of portions of our study (NSF Grant No. EEC-9812888).
- The members of our National Advisory Board (see Appendix C) for their sage advice and steady support.
- The deans, department chairs, faculty members, 1994 graduates, and 2004 graduates of the 40 institutions that participated in our study; without their cooperation, this project could not have happened.
- The Penn State College of Engineering faculty members and students, the ABET Industry Advisory Council, and others who assisted us with instrument refinement, pilot testing, and other forms of advice.
- The ABET executive staff members who provided ongoing support, guidance, and autonomy.

We are grateful to all these people and organizations. Without their assistance, the study would have been greatly diminished. We also wish to say it has been a pleasure and honor to participate in the national conversation on quality in engineering education.

Lisa R. Lattuca
Patrick T. Terenzini
J. Fredricks Volkwein

University Park, PA
March 2006

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Engineering Change: A Study of the Impact of EC2000

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Are post-EC2000 engineering graduates any better prepared to enter the profession than were their pre-EC2000 counterparts of a decade ago? That question is at the heart of this three-year study, titled *Engineering Change: A Study of the Impact of EC2000*.

In 1996, the ABET Board of Directors adopted the new set of standards, called *Engineering Criteria 2000* (EC2000). EC2000 shifted the basis for accreditation from inputs, such as what is taught, to outputs — what is learned. The new criteria specify 11 learning outcomes and require programs to assess and demonstrate their students' achievement in each of those areas. EC2000 retains earlier accreditation standards' emphases on the development of students' mathematical, scientific, and technical knowledge, as well as standards for program faculty and facilities, but it also emphasizes developing other professional skills, such as solving unstructured problems, communicating effectively, and working in teams. In addition, EC2000 stresses awareness of ethical and contextual considerations in engineering.

In 2002, ABET, Inc., commissioned the Center for the Study of Higher Education at Pennsylvania State University to undertake a three-and-a-half-year study to assess whether the implementation of the new EC2000 evaluation criteria is having the intended effects. *Engineering Change: A Study of the Impact of EC2000* was designed to answer two primary questions:

- What impact, if any, has EC2000 had on student learning outcomes in ABET-accredited programs and institutions?
- What impact, if any, has EC2000 had on organizational and educational policies and practices that may have led to improved student learning outcomes?

Origins of EC2000

Since 1932, ABET, Inc., has been the recognized U.S. accreditor of postsecondary degree-granting programs in engineering. ABET currently accredits nearly 2,000 engineering programs at more than 350 institutions.

ABET accreditation requires, among other things, that engineering programs adhere to a set of quality standards called accreditation criteria. For most of the second half of the 20th century, ABET's accreditation criteria dictated all major elements of an accredited engineering program, including program curricula, faculty, and facilities. In the mid-1990s, however, the engineering community collectively began to question the validity of such rigid accreditation requirements. Following a year of intense dialogue within the engineering community, ABET crafted new and unique accreditation criteria for engineering programs. These criteria became known as *Engineering Criteria 2000* or EC2000.

To answer these questions, the Penn State research team examined educational practices in engineering programs and assessed student performance pre- and post-implementation of EC2000. The conceptual model guiding the study (see Figure 1) summarizes the logic of the study's design.

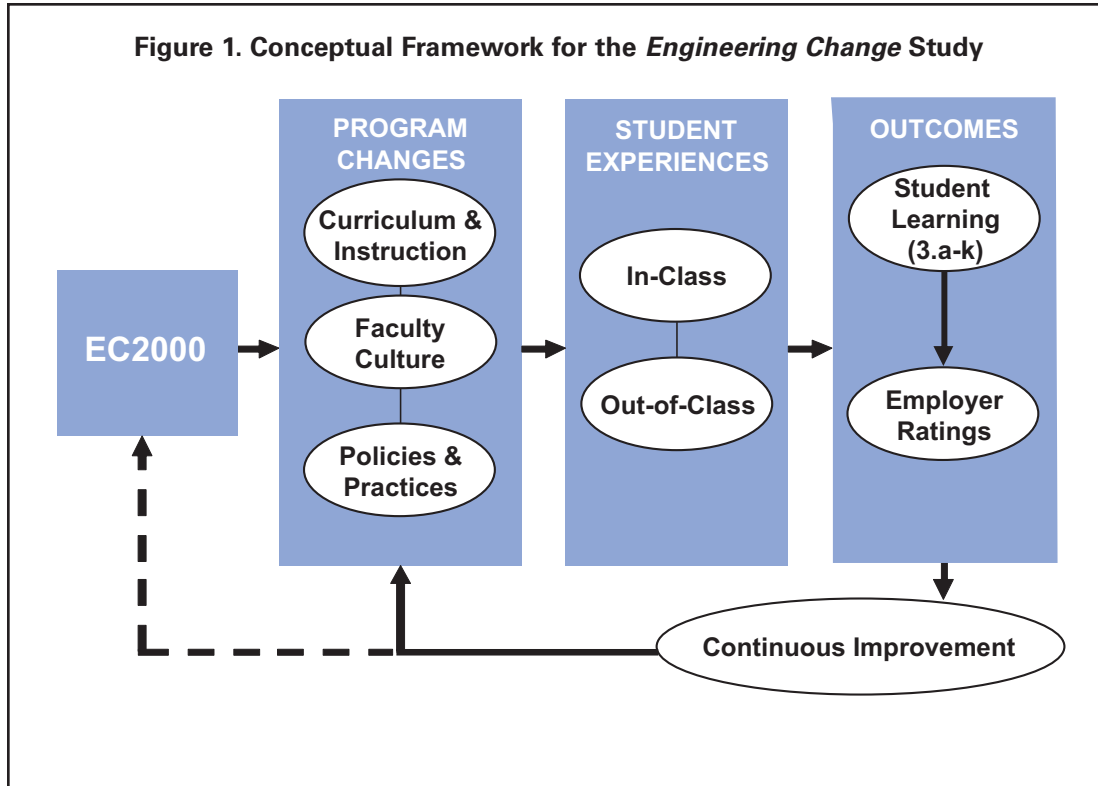


Figure 1 assumes that, if implementation of the EC2000 evaluation criteria is having the desired effect, several changes in engineering programs would be evident:

- Engineering programs would make changes to align their curricula and instructional practices with the 11 learning outcomes specified by EC2000 (Criterion 3.a-k, see Appendix D).
- Alterations in the faculty culture would be evident as faculty members engaged at a higher rate than before EC2000 in activities such as outcomes assessment and curriculum revision.
- Faculty and program administrators would adjust program practices and policies regarding faculty hiring, salary merit increases, tenure, and promotion criteria to give greater recognition to the kinds of teaching and learning required by EC2000.
- All of those program changes would reshape students' educational experiences inside and outside the classroom, which would in turn enhance student learning (defined as improved student performance on measures of the 11 EC2000 learning outcomes).

- Employers would report improvements in the knowledge and competencies of the engineering graduates they have hired since implementation of EC2000.

The EC2000 study evaluated these connections to assess whether any changes in engineering programs and improvements in student learning are a consequence of EC2000 rather than other factors.

Research Design and Sample Selection

The EC2000 study utilized a cross-sectional, pre- and post-EC2000 design that drew on multiple sources of evidence to provide a 360-degree view of the impact of the EC2000 accreditation criteria on the preparation of undergraduates for careers in engineering. Table 1 provides the sample size and response rate for each population studied. By social science standards, the response rates are quite respectable for studies of these populations, and the numbers of respondents provide more than adequate statistical power. [A summary of the study’s research design and methods appears in Appendix A.]

Data Sources	Target Population	Number of Responses	Response Rate
Programs	203	147	72%
Faculty	2,971	1,243	42%
Deans	40	39	98%
1994 Graduates (Pre-)	13,054	5,494	42%
2004 Graduates (Post-)	12,921	4,330	34%
Employers	unknown	1,622	N/A

Findings from the EC2000 Study

Major findings from the EC2000 study are reported according to the logic of the conceptual model given in Figure 1.

Changes in Engineering Programs

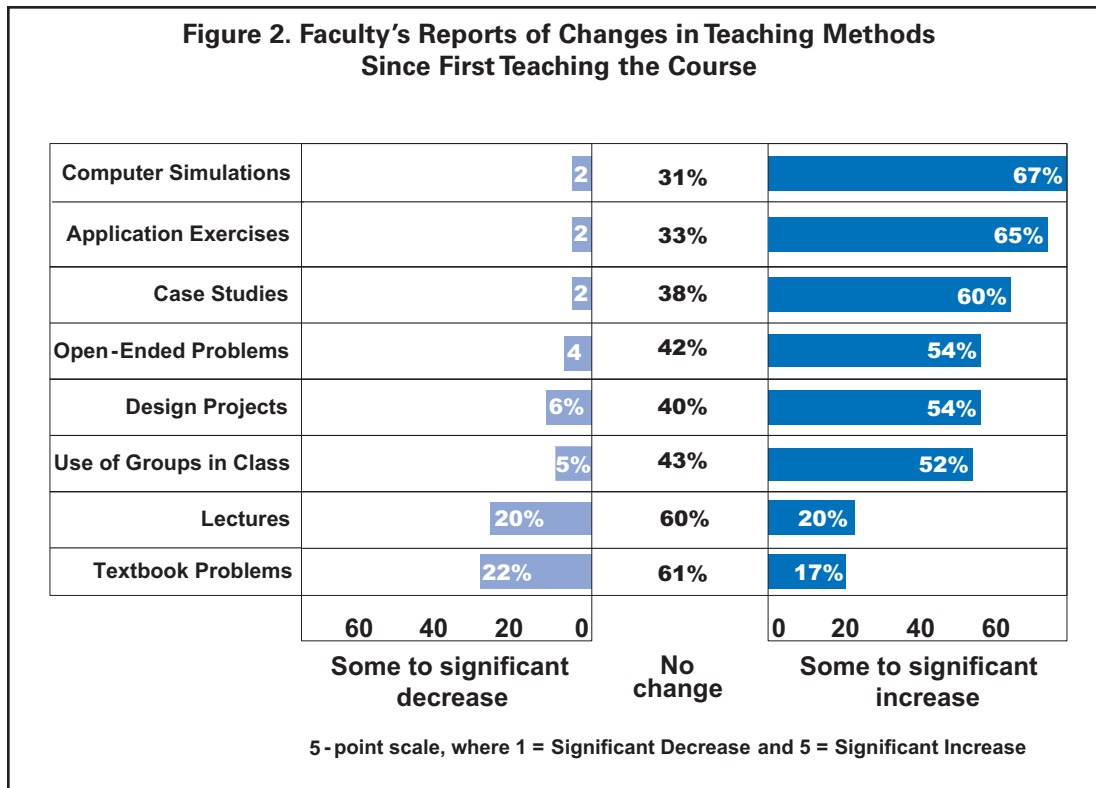
According to program chairs and faculty members, engineering program curricula changed considerably following implementation of the EC2000 criteria. Although few programs reduced their emphasis on the foundational topics in mathematics, basic science, and engineering science, both program chairs and faculty members report increased emphasis on nearly all of the professional skills and knowledge sets associated with EC2000 Criterion 3.a-k. Three-quarters or more of the chairs report moderate or significant increases in their program’s emphasis on communication, teamwork, use of modern engineering tools, technical writing, lifelong learning, and engineering design. Similarly, more than half of the faculty respondents report a moderate to

Key Findings: Changes in Engineering Programs

- Greater emphasis on professional skills and active learning after EC2000.
- High levels of faculty support for continuous improvement.
- Mixed emphasis on teaching in faculty reward structure.

significant increase in their emphasis on the use of modern engineering tools, teamwork, and engineering design in a course they taught regularly.

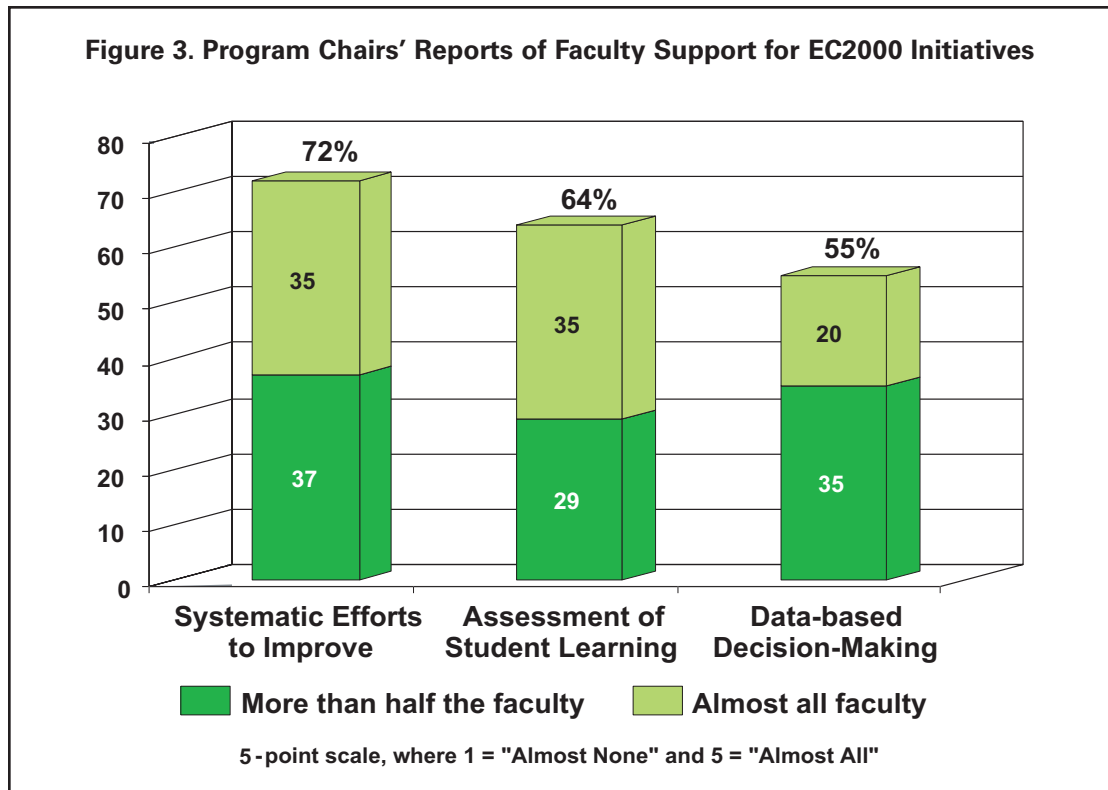
EC2000's focus on professional skills might also be expected to lead to changes in teaching methods as faculty members seek to provide students with opportunities to learn and practice their teamwork, design, and communication skills. Consistent with that expectation, half to two-thirds of the faculty report that they have increased their use of active learning methods, such as group work, design projects, case studies, and application exercises, in a course they teach regularly (See Figure 2).



Are these curricular and instructional changes attributable to EC2000 or to other influences shaping engineering education? Program chairs are much more likely than faculty to credit ABET (70% vs. 28%, respectively) and industry (78% vs. 28%) with having a moderate to strong influence on curricular changes in their programs. Faculty are more likely to take personal credit (82%) for changes they have made in their courses or to cite student feedback (54%) as having a moderate or great deal of influence. When other possible influences on curricular change at the course and program levels are controlled, however, faculty members believe ABET has had a statistically significant and independent influence on all measures of curricular or instructional change, and program chairs see a significant and independent ABET influence in two of three curricular areas. Industry feedback, however, is viewed as having a significant influence on only two of three course-level changes. Program chairs did not consider industry feedback as having a significant, independent influence on any changes at the program level.

EC2000 also requires that engineering programs assess student performance on the a-k learning outcomes and use the findings for program improvement. Program chairs report high levels

of faculty support for these practices (see Figure 3). More than 75 percent of the chairs estimate that either more than half or almost all of their faculty supported continuous improvement efforts, and more than 60 percent report moderate to strong support for the assessment of student learning. Faculty corroborated this finding: Nearly 90 percent of the faculty respondents report some personal effort in assessment, and more than half report moderate to significant levels of personal effort in this area. For the most part, moreover, faculty members do not perceive their assessment efforts to be overly burdensome: Nearly 70 percent think their level of effort was “about right.”



Learning how to do assessment or incorporate active learning methods into courses may also influence faculty members' engagement in professional development opportunities focused on teaching and learning. This study finds that more than two-thirds of the faculty members report reading more about teaching in the past year, and about half engage in formal professional development activities, such as attending seminars or workshops on teaching, learning, and assessment, or participating in a project to improve engineering education. Depending on the activity, one-fifth to one-quarter of the faculty members say that in the past five years they have increased their teaching-and-learning-related professional development efforts.

One of the most important influences on faculty work in colleges and universities is the institutional reward system, which can encourage or discourage attention to teaching. The EC2000 accreditation criteria require that engineering programs be responsible for the quality of teaching, learning, and assessment, but do faculty members believe that their institutions value their contributions in these areas when making decisions about promotion, tenure, and merit-based salary increases? About half of the program chairs and faculty surveyed see no change in their institution's reward system over the past decade. About one third of the pro-

gram chairs, however, report an increase over the past decade on the emphasis given to teaching in faculty hiring, promotion, tenure, and salary and merit decisions. In contrast, roughly one-quarter of the faculty respondents believed the emphasis on teaching in their reward systems had decreased in the same time period. Senior faculty members, however, tend to report increased emphasis on teaching in promotion and tenure decisions whereas untenured faculty are more likely to report decreased emphasis.

Differences in Student Experiences

Have the program changes reported by chairs and faculty had a measurable impact on the educational experiences of engineering undergraduates? The evidence suggests they have. Indeed, the experiences of the 2004 graduates differ in a number of ways from those of their counterparts of a decade earlier. The direction of seven of the 10 differences, moreover, is consistent with what one would expect if EC2000 were putting down roots. Compared to their 1994 counterparts, and after taking differences in graduates' and institutional characteristics into account, 2004 graduates reported:

- More active engagement in their own learning;
- More interaction with instructors;
- More instructor feedback on their work;
- More time spent studying abroad;
- More international travel;
- More involvement in engineering design competitions; and
- More emphasis in their programs on openness to diverse ideas and people.

Although they tend to be small, seven of 10 statistically significant differences between pre- and post-EC2000 graduates persist even after adjusting for an array of graduate and institutional characteristics.

The exceptions are the absence of differences in instructor teaching skills and the hours spent in cooperative or internship experiences, as well as the 2004 graduates' reports of a somewhat chillier diversity climate than that cited by their predecessors. The latter finding may be related to several factors: differences in the gender and racial/ethnic mix in 1994 and 2004, graduates' awareness of diversity issues, and/or their willingness to discuss and challenge prejudice or discrimination. The evidence provides no guidance in the way of an explanation.

Differences in Learning Outcomes

Assessments of graduates' skill levels on each of nine scales¹ reflecting EC2000 Criterion 3.a-k learning outcomes are based on graduates' self-reports of their ability levels at the time of graduation (using a five-point scale, where 1="no ability" and 5="high ability"). A growing body of research over the past 30 years has examined the adequacy of self-reported measures of learning and skill development as proxies for objective measures of the same traits or skills. When self-reports are aggregated to compare the performance of groups, they are generally considered to be valid measures of the skills under study. Although results vary depending on

¹ In statistical analyses, two of the 11 scales developed a priori to operationalize the a-k criteria collapsed into other scales, leaving a total of nine measurement scales to reflect student learning.

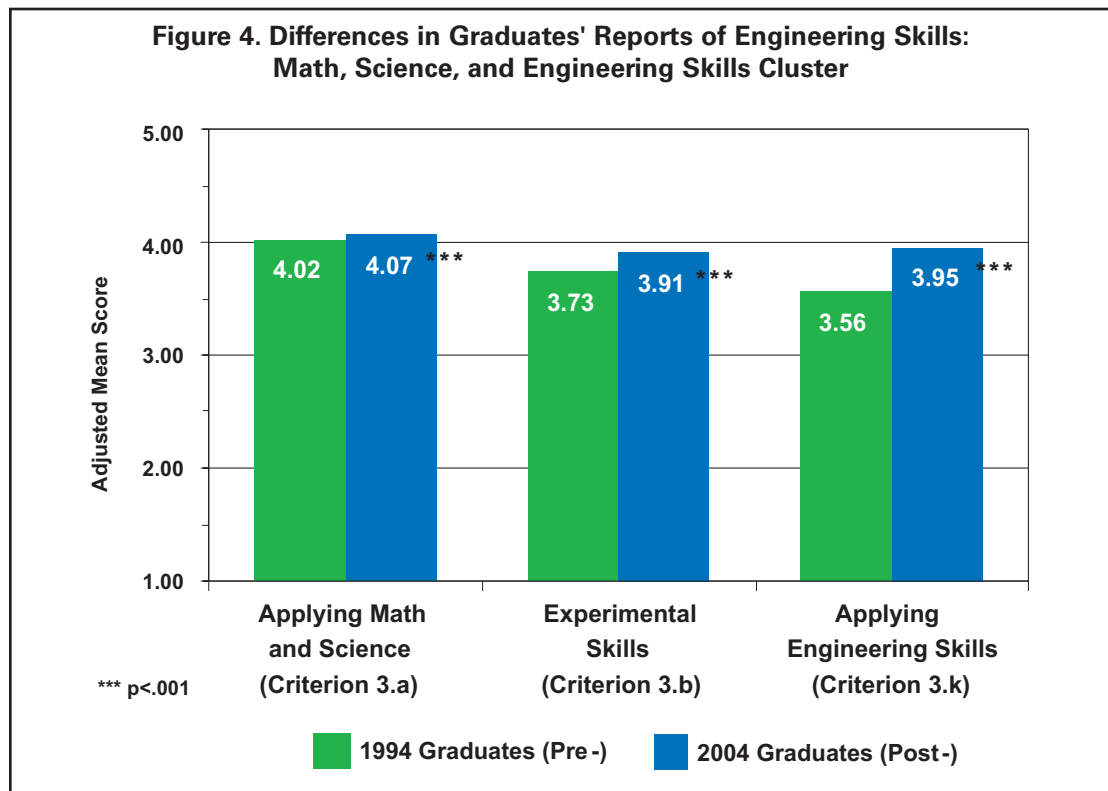
Key Findings: Differences in Learning Outcomes

- 2004 graduates better prepared than their 1994 counterparts.
- Professional skills gained; technical skills maintained.

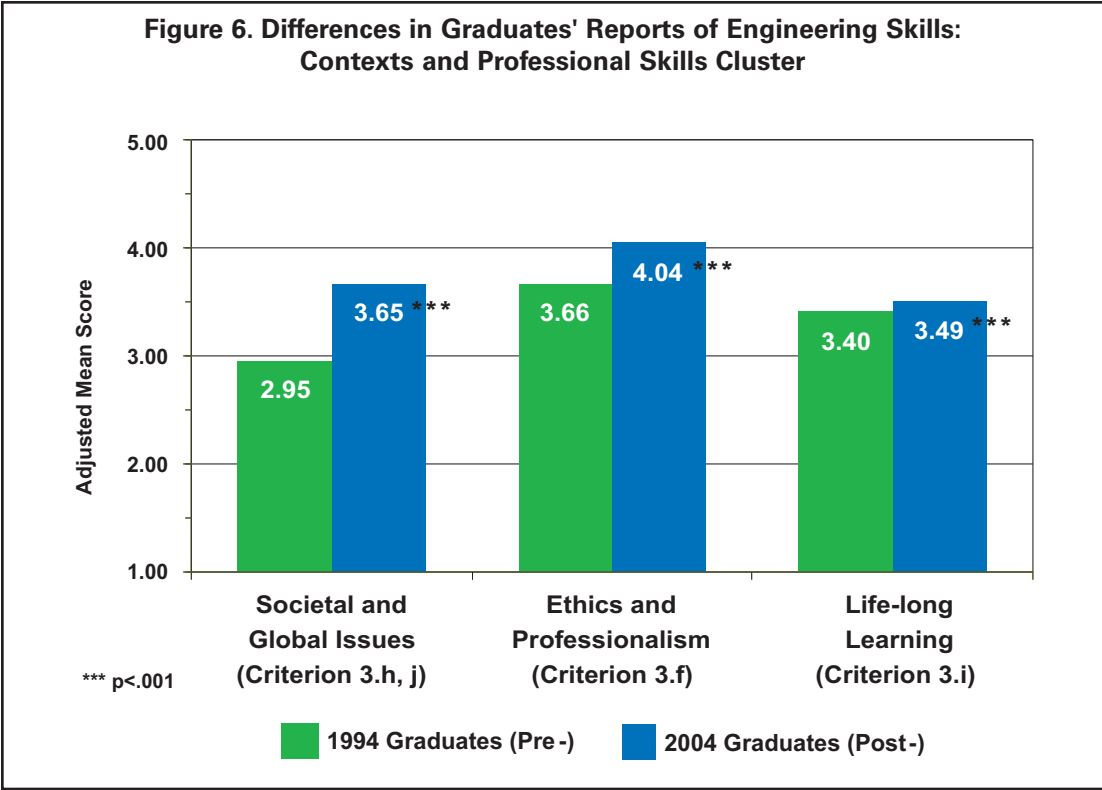
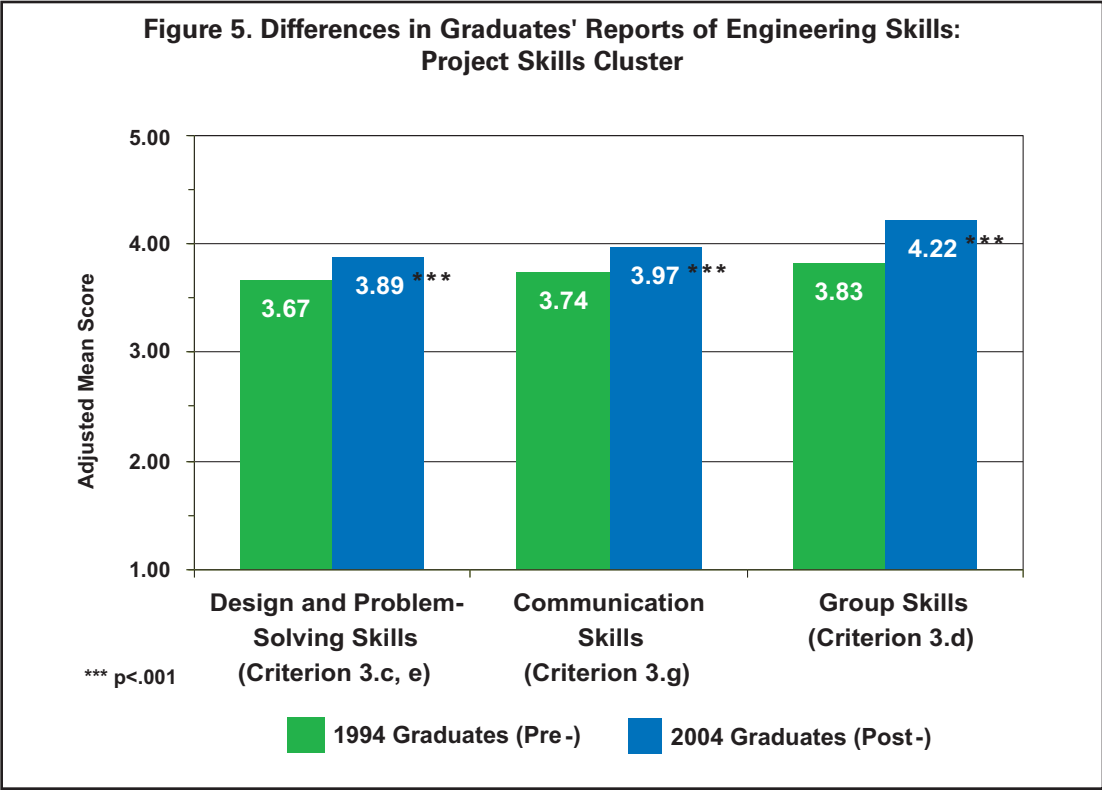
the traits and instruments examined, these studies report correlations of .50 to .70, on average, between self-reports and such objective criterion measures as the ACT Comprehensive Test, the College Basic Academic Subjects Examination, and the Graduate Record Examination. The original research design called for comparison of graduates' scores on the 1996 and 2004 Fundamentals of Engineering examination as a measure of graduates' content mastery. However, the

research team was unable to obtain permission to use those scores.

Figures 4 - 6 show the differences between 1994 and 2004 graduates' reports of their achievements on each of the nine scales reflecting the Criterion 3.a-k learning outcomes. In all cases, the differences are consistent with what one would expect under the assumption that EC2000 is having an impact on student learning. All differences, moreover, are statistically significant ($p < .001$), with effect sizes ranging from +.07 to +.80 of a standard deviation (mean = +.36).² Five of the nine effect sizes exceeded .3 of a standard deviation, an effect size that might be characterized as "moderate."



² An effect size is a standardized measure of the magnitude of the difference between two means after adjusting for differences in the variability of scores on the measure. The effect sizes reported here in standard deviation units can be expressed as estimated percentile-point differences between the groups. Assuming the mean for 1994 graduates' skill level on any outcome marks the 50th percentile, an average increase among 2004 graduates of .2 standard deviations is the equivalent of finding that the 2004s' skill level was at the 58th percentile, or an 8 percentile-point difference. Following are other, sample conversions: .4 SD = a 17 percentile-point difference; .6 = 23 percentile points; .8 = 29 percentile points, and 1.0 = a 34 percentile-point difference.



The largest differences between 1994 and 2004 graduates are in five areas: Awareness of societal and global issues that can affect (or be affected by) engineering decisions (effect size = +.80 of a standard deviation), applying engineering skills (+.47 sd), group skills (+.47 sd), and awareness of issues relating to ethics and professionalism (+.46 sd). The smallest difference is in graduates' abilities to apply mathematics and sciences (+.07 sd). Despite that small but statistically significant difference, this finding is particularly noteworthy because some faculty members and others have expressed concern that developing the professional skills specified in EC2000 might require devoting less attention to teaching the science, math, and engineering science skills that are the foundations of engineering. This finding indicates not only that there has been no decline in graduates' knowledge and skills in these areas, but that more recent graduates report slightly better preparation than their counterparts a decade earlier. The evidence suggests that implementation of EC2000 is not only having a positive impact on engineering education, but, overall, that gains are being made at no expense to the teaching of basic science, math, and engineering science skills. [The study's final report provides information on pre-to-post-EC2000 differences by discipline.]

Evaluating Links between EC2000 and Learning Outcomes

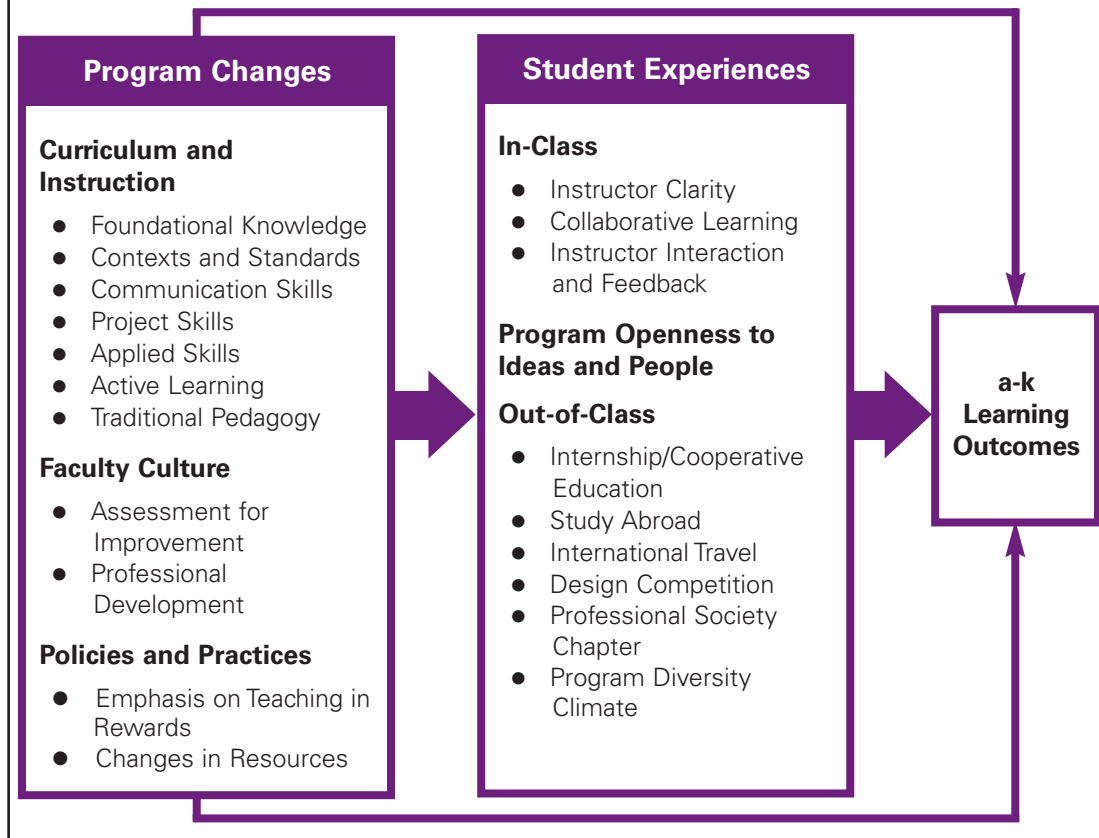
The central question of the EC2000 study was whether implementation of EC2000 is having any impact on the preparation of engineering graduates to enter their profession. The logic of the conceptual framework (see Figure 1) suggests a series of interconnected influences beginning with the effects of implementation of EC2000 on program changes and, subsequently, on students' experiences and, in turn, on graduates' learning.

Following the logic of the conceptual model and based on multivariate statistical procedures, the findings provide moderate to strong evidence that EC2000-related changes in program curricula, policies, and practices, in faculty members' choices of pedagogies, and in the faculty culture more broadly are, indeed, reshaping students' engineering-related experiences (Figure 7 summarizes the analytical model used to evaluate linkages between EC2000 and student learning outcomes). The evidence of such influences remains, even when controlling for a battery of students' precollege traits and for the characteristics of the institutions they attended. Fourteen of 16 changes in program curricula, instruction, administrative practices or policies, or in the general faculty culture had statistically significant independent effects on at least one, and as many as five, student experiences. Ten of the 16 program or faculty changes had a significant influence on three or more student experiences. Pre- to post-EC2000 changes in emphasis on students' foundational knowledge and project skills, faculty reliance on traditional pedagogies (negative), and program emphasis on assessment for improvement are the most frequent influences shaping students' in- or out-of-class experiences. Although the source, direction, and strength of each influence vary somewhat with the student experience affected, a consistent pattern is apparent. The pre- to post-EC2000 changes in program curricula, practices and policies, and faculty activities and culture summarized above are positively related at statistically significant, if sometimes small-to-moderate, levels, even after taking other factors into account.

Key Findings: Links Between EC2000 and Learning Outcomes

- Changes in programs and student experiences empirically linked to higher performance.

Figure 7. Analytical Model for Linking EC2000 to a-k Learning Outcomes



Finally, students' undergraduate program experiences, both in- and outside-the-classroom, are clearly linked to what and how much students learn. Nine of 10 measures of their in- and out-of-class experiences have statistically significant, positive, and sometimes substantial influences on graduates' reports of their ability levels on all nine of EC2000's a-k learning outcome measures. The clarity of the instruction received, the amount of interaction with and feedback from instructors, and exposure to active and collaborative learning experiences are consistently the most powerful influences on learning of any factors in the study, all having a positive influence on learning. Out-of-class experiences, however, also shape student learning. Important out-of-class experiences include internships or cooperative education experiences, participation in design competitions, and active participation in a student chapter of a professional society or association. These experiences significantly and positively affect learning in six or more of the nine skill areas measured. The magnitudes of these effects, however, were smaller than those of students' in-class experiences.

Employer Views

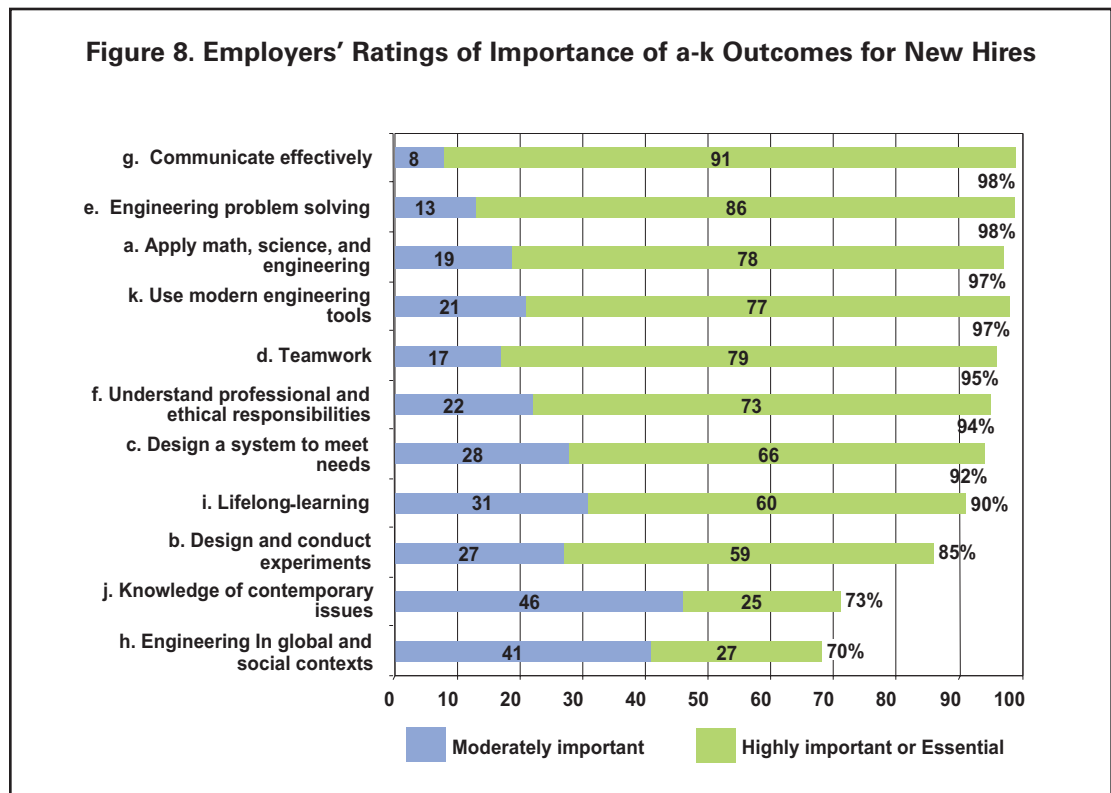
The 1,622 employer respondents in the EC2000 study are highly diverse in their geographic location, industry type, company size, educational attainment, and experience in evaluating engineers. Employers addressed three primary questions: How important is each of the 11 Criterion 3 competencies for today's new hires? How well prepared are your newly

hired engineers (on each of five dimensions reflecting the 11 a-k criteria)? What changes have you observed over the past seven to 10 years in recent graduates' abilities (on each of the five dimensions)?

Figure 8 indicates that EC2000's a-k learning criteria are in substantial harmony with the views of employers on what new graduates should be able to do. For example, seven of 10 employers rate all 11 of the a-k criteria as at least moderately important, and at least six of 10 employers rate nine items as highly important or essential for new hires. Moreover, faculty members in the study indicate that they and their engineering programs are giving increased curricular emphasis to most of the areas that EC2000 emphasizes and that employers rate as most important – effective communication, teamwork, modern engineering tools, and design.

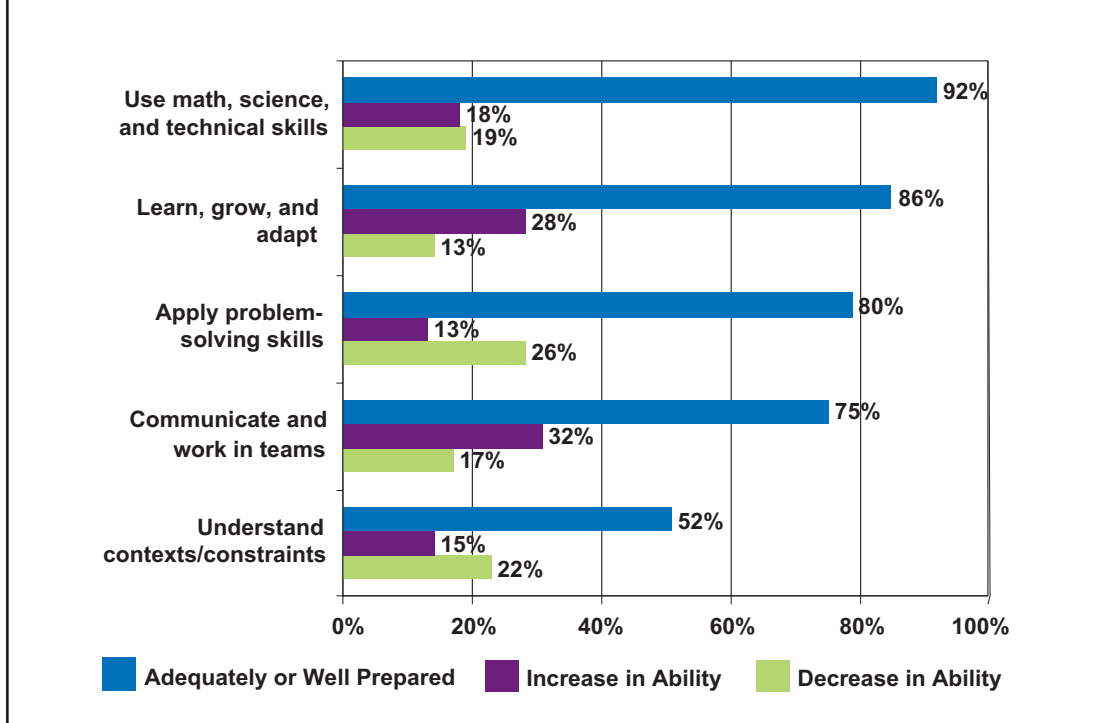
**Key Findings:
Employer Views**

- National employers see more improvements than local firms.
- Employers say a-k outcomes still important.



As shown in Figure 9, over 90 percent of the employers consider new engineering graduates to be adequately prepared or well prepared to use math, science, and technical skills, and about eight of 10 employers give recent graduates passing marks on their abilities to solve problems and to learn, grow, and adapt. Three of four employers assess graduates' teamwork and communication skills as at least adequate. Moreover, and since the introduction of EC2000, these employers report seeing modest increases in graduates' teamwork and communication skills, as well as in their abilities to learn, grow, and adapt to changing technologies and society. Math, science, and engineering skills appear unchanged over the past decade, but according to these employers, graduates' problem-solving skills appear to have

Figure 9. Employers' Reports of Engineer Preparation and Changes in Ability



declined modestly, although eight out of 10 employers judge the problem-solving skills of their new hires to be at least adequate. In contrast, barely half of the employers give an adequate rating to new graduates' understanding of the organizational, cultural, and environmental contexts and constraints of their work. Additionally, graduates' skills in this area, according to their employers, appear to have declined somewhat over the past decade.

Despite their heterogeneity, employers are in substantial agreement not only about the importance of a-k, but also about the preparation of new engineers, regardless of their engineering discipline. An extensive series of tests indicated only a handful of significant differences related to employers' engineering field, industry sector, degree attainment, or geographic location. Analyses indicate, however, that employers from larger companies that recruit nationally and hire the most engineers are more favorable in their judgments both of new engineers' preparation and of the pre-post-EC2000 change than are employers from smaller companies that recruit locally and hire fewer employees. This finding may suggest that the impact of EC2000 is just beginning to become visible to employers, and the larger national companies may be seeing the changes first.

Conclusions

The weight of the accumulated evidence collected for *Engineering Change* indicates clearly that the implementation of the EC2000 accreditation criteria has had a positive, and sometimes substantial, impact on engineering programs, student experiences, and student learning. Comparisons of 1994 and 2004 graduates' self-reported learning outcomes show 2004 graduates as measurably better prepared than their counterparts in all nine learning areas assessed. The greatest differences in student learning before and after EC2000 are in recent

graduates' better understanding of societal and global issues, their ability to apply engineering skills, group skills, and understanding of ethics and professional issues.

Engineering Change assumed that if the new EC2000 accreditation criteria were having an impact, engineering programs would be moving to align their curricula and instructional methods with the goals of the new criteria, thus increasing student engagement in experiences that would promote the learning outcomes specified in the criteria. The findings from this study strongly suggest that improvements in student learning have indeed resulted from changes in engineering program curricula, teaching methods, faculty practices, and student experiences inside and outside the classroom. Although many dimensions of engineering programs shape learning, the findings of this study indicate that students' classroom experiences are the most powerful and consistent influences. Engineering programs and faculty can be confident that their efforts to improve engineering courses and programs will benefit students and the profession.

In the spirit of continuous improvement, ABET made a decision in 2002 to sponsor this study. The completion of the *Engineering Change* project establishes a baseline for the preparation of engineers and provides a model for future assessments of the state of undergraduate engineering education and student learning. As the first national study of an outcomes-based accreditation model, this research also informs ongoing discussions of accreditation policy among regional and professional accreditation agencies, state and federal legislators, and the general public – all of whom want evidence of the rigor of higher education quality assurance practices.

Appendix A: Study Design and Methods

Research Design and Data Collection

The *Engineering Change* study employed a cross-sectional, pre-/post-test design in which graduates of engineering programs who completed their degrees following the initiation of EC2000 were contrasted with graduates who had completed their programs before implementation of the new accreditation criteria. The study relied primarily on survey research methods. Information was collected from 40 colleges or schools of engineering offering more than 200 engineering programs in aerospace, chemical, civil, computer, electrical, industrial, and mechanical engineering. Survey information was collected from 1,243 faculty members, 147 program chairs, 5,494 graduates in the Class of 1994, 4,330 graduates of the Class of 2004, 39 deans, and 1,622 employers. Files maintained by the American Society for Engineering Education (ASEE), the U.S. Department of Education, and ABET provided information on institutional and program characteristics.

Sampling Design

The study population consisted of the 1,024 programs offering degrees in the seven target engineering disciplines accredited since 1990. The study relied on a disproportionate stratified random sample to ensure adequate sample sizes and program representativeness with respect to discipline, EC2000 review schedule, and participation in an NSF Engineering Education Coalition during the 1990s. Adjustments were also made to include engineering colleges serving historically underrepresented populations. Table 2 lists the participating institutions.

Table 2. Participating Institutions

Doctoral Institutions	University of Missouri-Columbia
Arizona State University	University of Notre Dame
Case Western Reserve University	University of the Pacific
Clemson University	University of Texas at Arlington
Cornell University	University of Texas at Austin
Georgia Institute of Technology	University of the Pacific
Howard University	Virginia Polytechnic Institute and State University
Illinois Institute of Technology	Western Michigan University
Iowa State University	Worcester Polytechnic Institute
Lehigh University	
Marquette University	Master's Institutions
Massachusetts Institute of Technology	California State Polytechnic University, Pomona
Ohio State University	California State University, Sacramento
Princeton University	North Carolina A&T State University
Purdue University	Tuskegee University
Syracuse University	Youngstown State University
Temple University	
Texas A&M University	Bachelor's and Specialized Institutions
University of Arkansas	South Dakota School of Mines and Technology
University of California, Los Angeles	Tri-State University
University of Florida	Union College
University of Illinois at Chicago	United States Military Academy
University of Michigan	

Sources of Evidence

Figure 10 summarizes the study's sources of evidence. Check marks indicate which sources contributed data relevant to each component of the study's guiding conceptual model

(see Figure 1). Program information was obtained from ABET, the American Society for Engineering Education, and the U.S. Department of Education's Integrated Postsecondary Education Data System. All other information came from mailed and on-line surveys of program graduates (1994 and 2004), program chairs, faculty members, and employers. Deans were interviewed by telephone. All data were gathered during the 2003-2004 academic year. Although the original research design also called for analysis of graduates' scores on the 1996 and 2004 Fundamentals of Engineering examination as measures of graduates' content mastery, the research team was unable to obtain permission to use those scores.

Figure 10. Sources of Evidence for *Engineering Change*

EC2000 Impact Areas	Data Sources						
	ASEE, ABET, and IPEDS Databases	2004 Graduates	1994 Graduates	Deans	Program Chairs	Faculty	Employers
Institutional and Program Information	✓			✓	✓	✓	
Curriculum and Instruction		✓	✓		✓	✓	
Faculty Culture				✓	✓	✓	
Administrative Policy and Organizational Influence				✓	✓	✓	
Student Outcomes and Educational Experiences		✓	✓		✓	✓	✓
	7 institutional and program characteristics	100 survey items	92 survey items	Interviews	100 survey items	85 survey items	36 survey items

Sample Representativeness

Prior to all analysis, sample respondents were weighted to produce a sample representative of the parent population. Program chairs' responses were adjusted to correct for any response bias by Carnegie Classification and participation in the National Science Foundation's (NSF) Engineering Education Coalition Program during the 1990s. Faculty data were weighted to correct for any response bias related to respondents' sex, discipline, and institutional NSF Coalition participation. Data from the 1994 and 2004 graduates were adjusted to be representative by sex and discipline. Adjustments were also made to correct for differences in institutional response rates within each sampled group (excepting program chairs).

Data Analysis

The primary analytical procedures included principal components factor analysis, item and scale analysis, analysis of covariance, and hierarchical, ordinary least-squares multiple regression. In all inferential statistical tests, differences in graduates' pre-college characteristics and in the traits of the institutions they attended were controlled.

Appendix B: *Engineering Change* Study Team

Center for the Study of Higher Education, The Pennsylvania State University

- Dr. Lisa R. Lattuca, Project Director and Co-Principal Investigator
- Dr. Patrick T. Terenzini, Co-Principal Investigator
- Dr. J. Fredricks Volkwein, Co-Principal Investigator
- Dr. Linda C. Strauss, Senior Project Associate
- Graduate Research Assistants: Vicki L. Baker, Robert J. Domingo, Betty J. Harper, Amber D. Lambert, Javzan Sukhbaatar
- Suzanne S. Bienert, Staff Assistant

The Pennsylvania State University's Center for the Study of Higher Education (CSHE) is one of the nation's first research centers established specifically to study postsecondary education issues. For over 30 years, research teams composed of nationally recognized faculty, highly qualified graduate students, and experienced professional staff have examined critical issues that influence the policies and practices of postsecondary institutions. To that end, CSHE is dedicated to conducting and disseminating theory-based empirical research designed to improve higher education practice and policy; providing high-quality data and analysis to institutional, state, and federal policy-makers; and supporting graduate training for students in the Higher Education Program at Penn State.

Persons with questions or wishing additional information are invited to contact Dr. Lisa R. Lattuca, Project Director (lattuca@psu.edu).

Appendix C: Engineering Change National Advisory Board

Dr. Denice Dee Denton

Chancellor
University of California-Santa Cruz

Mr. Thomas Perry*

Director, Educational Services
ASME International

Dr. Norman L. Fortenberry

Director, Center for the Advancement of
Scholarship on Engineering Education
National Academy of Engineering

Dr. Thomas M. Regan

Professor of Chemical Engineering, Emeritus
University of Maryland

Dr. Daniel B. Hodge (ex officio)

Accreditation Director
ABET

Dr. Ernest T. Smerdon

Professor of Civil Engineering, Emeritus,
and former Dean of the College of
Engineering and Mines
University of Arizona

Dr. William E. Kelly

Professor of Civil Engineering and former
Dean of the School of Engineering
Catholic University of America

Dr. Judith Spitz

Senior Vice President, Information
Technology
Verizon

Dr. David Mahan

Former Superintendent of Schools
St. Louis, Missouri

Mr. Robert E. Spitzer

Former Vice-President, External Affiliations
and University Relations
The Boeing Company

Dr. Susan B. Millar

Senior Scientist, Wisconsin Center for
Education Research (WCER)
University of Wisconsin-Madison

Mr. Chor Weng Tan**

Managing Director, Council on Education
American Society of Mechanical Engineers
International

Dr. Eleanor W. Nault

Director, Office of Assessment
Clemson University

Dr. David N. Wormley

Dean of the College of Engineering and
Professor of Mechanical Engineering
The Pennsylvania State University

Dr. Barbara M. Olds

Division Director, Directorate for Education
and Human Resources
National Science Foundation
(on leave from Colorado School of Mines)

*Member, 2004-2006

**Member, 2002-2004

Appendix D: Engineering Criteria 2000

The following is an excerpt from the *Criteria for Accrediting Engineering Programs* that were effective during the 2001-2002 ABET accreditation cycle.

Engineering Change focused on Criterion 3.a-k.

I. GENERAL CRITERIA FOR BASIC LEVEL PROGRAMS

It is the responsibility of the institution seeking accreditation of an engineering program to demonstrate clearly that the program meets the following criteria.

Criterion 1. Students

The quality and performance of the students and graduates are important considerations in the evaluation of an engineering program. The institution must evaluate, advise, and monitor students to determine its success in meeting program objectives.

The institution must have and enforce policies for the acceptance of transfer students and for the validation of courses taken for credit elsewhere. The institution must also have and enforce procedures to assure that all students meet all program requirements.

Criterion 2. Program Educational Objectives

Each engineering program for which an institution seeks accreditation or reaccreditation must have in place:

- (a) detailed published educational objectives that are consistent with the mission of the institution and these criteria
- (b) a process based on the needs of the program's various constituencies in which the objectives are determined and periodically evaluated
- (c) a curriculum and processes that ensure the achievement of these objectives
- (d) a system of ongoing evaluation that demonstrates achievement of these objectives and uses the results to improve the effectiveness of the program.

Criterion 3. Program Outcomes and Assessment

Engineering programs must demonstrate that their graduates have:

- (a) an ability to apply knowledge of mathematics, science, and engineering
- (b) an ability to design and conduct experiments, as well as to analyze and interpret data
- (c) an ability to design a system, component, or process to meet desired needs
- (d) an ability to function on multi-disciplinary teams
- (e) an ability to identify, formulate, and solve engineering problems
- (f) an understanding of professional and ethical responsibility
- (g) an ability to communicate effectively

- (h) the broad education necessary to understand the impact of engineering solutions in a global and societal context
- (i) a recognition of the need for, and an ability to engage in life-long learning
- (j) a knowledge of contemporary issues
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Each program must have an assessment process with documented results. Evidence must be given that the results are applied to the further development and improvement of the program. The assessment process must demonstrate that the outcomes important to the mission of the institution and the objectives of the program, including those listed above, are being measured. Evidence that may be used includes, but is not limited to the following: student portfolios, including design projects; nationally-normed subject content examinations; alumni surveys that document professional accomplishments and career development activities; employer surveys; and placement data of graduates.

Criterion 4. Professional Component

The professional component requirements specify subject areas appropriate to engineering but do not prescribe specific courses. The engineering faculty must assure that the program curriculum devotes adequate attention and time to each component, consistent with the objectives of the program and institution. Students must be prepared for engineering practice through the curriculum culminating in a major design experience based on the knowledge and skills acquired in earlier course work and incorporating engineering standards and realistic constraints that include most of the following considerations: economic; environmental; sustainability; manufacturability; ethical; health and safety; social; and political. The professional component must include:

- (a) one year of a combination of college level mathematics and basic sciences (some with experimental experience) appropriate to the discipline
- (b) one and one-half years of engineering topics, consisting of engineering sciences and engineering design appropriate to the student's field of study
- (c) a general education component that complements the technical content of the curriculum and is consistent with the program and institution objectives.

Criterion 5. Faculty

The faculty is the heart of any educational program. The faculty must be of sufficient number; and must have the competencies to cover all of the curricular areas of the program. There must be sufficient faculty to accommodate adequate levels of student-faculty interaction, student advising and counseling, university service activities, professional development, and interactions with industrial and professional practitioners, as well as employers of students.

The faculty must have sufficient qualifications and must ensure the proper guidance of the program and its evaluation and development. The overall competence of the faculty may be judged by such factors as education, diversity of backgrounds, engineering experience, teach-

ing experience, ability to communicate, enthusiasm for developing more effective programs, level of scholarship, participation in professional societies, and registration as Professional Engineers.

Criterion 6. Facilities

Classrooms, laboratories, and associated equipment must be adequate to accomplish the program objectives and provide an atmosphere conducive to learning. Appropriate facilities must be available to foster faculty-student interaction and to create a climate that encourages professional development and professional activities. Programs must provide opportunities for students to learn the use of modern engineering tools. Computing and information infrastructures must be in place to support the scholarly activities of the students and faculty and the educational objectives of the institution.

Criterion 7. Institutional Support and Financial Resources

Institutional support, financial resources, and constructive leadership must be adequate to assure the quality and continuity of the engineering program. Resources must be sufficient to attract, retain, and provide for the continued professional development of a well-qualified faculty. Resources also must be sufficient to acquire, maintain, and operate facilities and equipment appropriate for the engineering program. In addition, support personnel and institutional services must be adequate to meet program needs.

Criterion 8. Program Criteria

Each program must satisfy applicable Program Criteria (if any). Program Criteria provide the specificity needed for interpretation of the basic level criteria as applicable to a given discipline. Requirements stipulated in the Program Criteria are limited to the areas of curricular topics and faculty qualifications. If a program, by virtue of its title, becomes subject to two or more sets of Program Criteria, then that program must satisfy each set of Program Criteria; however, overlapping requirements need to be satisfied only once.

ABET Member Societies

American Academy of Environmental Engineers (AAEE)
American Congress on Surveying and Mapping (ACSM)
American Industrial Hygiene Association (AIHA)
American Institute of Aeronautics and Astronautics, Inc. (AIAA)
American Institute of Chemical Engineers (AIChE)
American Nuclear Society (ANS)
American Society for Engineering Education (ASEE)
American Society of Agricultural and Biological Engineers (ASABE)
American Society of Civil Engineers (ASCE)
American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. (ASHRAE)
American Society of Mechanical Engineers (ASME)
American Society of Safety Engineers (ASSE)
Biomedical Engineering Society (BMES)
CSAB, Inc.
Health Physics Society (HPS)
Institute of Electrical and Electronics Engineers, Inc. (IEEE)
Institute of Industrial Engineers, Inc. (IIE)
ISA-The Instrumentation, Systems, and Automation Society (ISA)
Materials Research Society (MRS)
The Minerals, Metals, and Materials Society (TMS)
National Council of Examiners for Engineering and Surveying (NCEES)
National Institute of Ceramic Engineers (NICE)
National Society of Professional Engineers (NSPE)
Society of Automotive Engineers (SAE)
Society of Manufacturing Engineers (SME)
Society for Mining, Metallurgy, and Exploration, Inc. (SME-AIME)
Society of Naval Architects and Marine Engineers (SNAME)
Society of Petroleum Engineers (SPE)

