

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

Contact Information

Master of Science in Medical Science Program
 635 N. Barnhill Drive
 Medical Science Building 265
 Indianapolis, IN 46202
 Tel.: (317) 278-1724
 Fax.: (317) 278-5364
 E-mail: msms@iupui.edu
 Web Site: www.msms.iu.edu