

# School of Informatics and Computing

## PRAC Annual Report

### Assessment of Student Learning Outcomes 2012-2013

#### Introduction

2012-2013 saw the newly merged School of Informatics and Computing! The impact of the merger with Systems Library Information Science (now Library Information Science) and the restructuring of the School and existing programs provide tremendous opportunities for advancement. Three specific areas are:

- **Breadth:** The merger provides balanced and strong coverage of the triad we often talk about: technical foundations, a broad range of applications, and human and societal implications and issues. From an information perspective, we span the array of organizing, managing, analyzing, visualizing and utilizing data and information.
- **Research:** The merger enables us to fully address the spectrum of technical, application and human issues in important research areas including big data science, network science, security and privacy, health informatics and more. It already has reinvigorated IU's research emphasis in social informatics, and is playing a major role in the developing IU institute in network science.
- **Education:** The merger allows us to design new educational programs in some of the areas mentioned above, such as big data science, but also will help us address the increasingly important societal challenge of providing information and technological education to students trained in the liberal arts.

The School of Informatics and Computing PUL 2012-2013 report is minimal at best. The significant work placed on the re-structuring of the School, administration, newly appointed career services director, and faculty have resulted in the lack of reported data for this academic year. The School's focus for the upcoming year will reflect improvement including the efforts to define, measure, and improve student learning outcomes for all of the programs.

This report provides assessment results from PULS associated with undergraduate courses in the Media Arts and Science Program and the Undergraduate Informatics Program.

**Program Specific Assessments for the  
School of Informatics and Computing  
UNDERGRADUATE PROGRAMS**

<b>SoI - HIA BS Program</b>							
	<b>Degrees Awarded</b>	<b>Certificates Awarded</b>	<b>Percentage Passing Registry Examination</b>	<b>Continued Accreditation</b>	<b>Percent Employed</b>	<b>Average Salary</b>	<b>Grad School Placement</b>
<b>2009-2010</b>	18	3	50%	Yes	66%	42,000	
<b>2010-2011</b>	29	9	82%	Yes	95.83%	35-45K	5
<b>2012-2013</b>	29	8	67%	Yes	86.2%	35-45K	1

**Assessment Project 1**- Improve graduate’s proficiency in the Health Information Administration (HIA) Baccalaureate Degree Entry-Level Competencies as outlined by the American Health Information Management Association.

Learning Outcomes: The Registered Health Information Administrator’s (RHIA) examination includes the following domains and the competencies in which the graduate must obtain entry-level knowledge through the (HIA) program curricula:

- Domain I - Health Data Management – which includes Health Data Structure, Content and Standards, Healthcare Information Requirements and Standards, Clinical Classification Systems and Reimbursement Methodologies
- Domain II- Health Statistics, Biomedical Research and Quality Management – which includes Healthcare Statistics and Research and Quality Management and Performance Improvement
- Domain III - Health Services Organization and Delivery – which includes Healthcare Delivery Systems and Healthcare Privacy, Confidentiality, Legal and Ethical Issues
- Domain IV: Information Technology & Systems – which includes Information and Communication Technologies, Data, Information, and File Structures, Data Storage and Retrieval, Data Security and Healthcare Information Systems
- Domain V: Organization and Management which includes - Human Resources Management, Financial and Resource Management, Strategic Planning and Organizational Development and Project and Operations Management

PRAC Questions:

**a) What general outcome are you seeking?**

To improve HIA graduate scores on the national RHIA credentialing examination.

**b) How would you know it (the outcome) if you saw it? (What will the student know or be able to do?)**

Students will maintain RHIA examination scores at or above the national average on all domains and competency areas.

**c) What opportunities do students have to learn it? ( in class or out of class)**

Through successful completion of course curricula which is determined by the American Health Information Management Association's Model Curriculum for Baccalaureate Degree Program.

**d) How are you measuring each of the desired behaviors listed in (b.)?**

1. Through ongoing analysis of registry examination results that are included on the American Health Information Management Association's School Score Report. This report is forwarded to the HIA Program Director on a quarterly basis.
2. Through ongoing assessment of course content during the HIA annual program evaluation conducted by the HIA faculty in May of each year. This assessment is ongoing and is a requirement for accreditation through our accrediting body the Commission on Accreditation for Health Information and Informatics Management Education (CAHIIM).

**e) What are the assessment findings?**

An analysis of the RHIA examination results from Indiana University graduates indicates an improvement in examination scores in all but two of the required domains. NOTE: The HIA Program Director reports annually to the accrediting body, CAHIIM on a report called the Annual Program Assessment Report (APAR). This report contains aggregate data that has been collected from all other HIA baccalaureate programs allowing directors to compare their program results to other programs across the nation.

Based on aggregate data from the most current APAR the national RHIA examination results from the time period of 07-01-12 through 06-30-13 indicates that Indiana University graduates did not meet the American Health Information Management Association's (AHIMA) national mean passing rate. The AHIMA's national passing rate was 71% for this time period and our program's passing rate was 67%. This is a good indicator of our programs performance, however continued assessments must be made to improve graduate scores in the domains in which graduates scored below the national average.

**f) What improvements have been made based on assessment findings?**

More rigorous textbooks have been chosen for several courses, including the coding courses (M355, M356, M455, M456, & M457), Pathophysiology (M450), Quality Improvement (M462), Directed Study (M490) and Healthcare Statistics (M315). By updating the course content to better mirror the core competencies established by the Commission on Accreditation for Health Informatics and Health Information Management Education (CAHIIM), students will be better prepared to successfully write the Registered Health Information Administrator (RHIA) exam and improve domain scores.

The program has also brought on board a new program director and two new faculty members. The new HIA leadership will move the program forward and expand the scope and reach of the education opportunities students receive. The new faculty team also reduces our reliance on an excessive number of adjunct faculty.

The Capstone Experience (M499) was changed for the students. While the emphasis was still project and presentation-based, for the first time the HIA students presented their Capstone projects at the same event as the other Informatics students.

The Professional Practice Experience (PPE) (M443 & M444) has also been revised to align with AHIMA and CAHIIM guidelines. The practicum sites have been expanded beyond the traditional acute care hospital setting. Students are now placed in wide range of health information practicums, including software development, home health care, coding audit systems, physician practices, and specialty surgical facilities. This change allows the students to have greater depth in valuable real-world experience which should translate into a wider pool of job opportunities upon graduation.

### **Assessment Project 2** - Graduate employment performance

Learning Outcomes: Graduates of the HIA program should be proficient in the following areas:

1. Knowledge Base – Cognitive Domain
2. Practice Proficiency – Psychomotor Domain
3. Behavioral Skills – Affective Domain

#### **a) What general outcome are you seeking?**

Employers of HIA graduates either, generally agree or strongly agree that the students are proficient in the above outlined areas. This information is gathered through the use of an online survey forwarded to employers of recent HIA graduates.

#### **b) How would you know it (the outcome) if you saw it? (What will the student know or be able to do?)**

Students will demonstrate their knowledge through critical thinking, time management, technical and problem solving techniques necessary to function in a Health Information Management (HIM) department.

Each year an Employer Survey is sent to employers of recent HIA graduates. Surveyed employers rate on the following learning outcome scale:

- 5 = Strongly Agree
- 4 = Generally Agree
- 3 = Neutral (acceptable)
- 2 = Generally Disagree
- 1 = N/A Not Applicable

#### **c) What opportunities do students have to learn it? ( in class or out of class)**

Students gain knowledge through the HIA course curricula including examinations, homework, and hands-on projects.

#### **d) How are you measuring each of the desired behaviors listed in (b.)?**

Behaviors are measured through the results of the Employer Surveys.

#### **e) What are the assessment findings?**

Based on the results from the most recent survey administered in January 2013, the overall rating was a 5 which indicates that the employers strongly agree that our graduates are proficient in the Learning Outcomes listed above.

**f) What improvements have been made based on assessment findings?**

The survey indicates that our graduates are proficient in the areas needed to be successful within a HIM department. There were, however, three areas in which the respondents only “generally agreed” that the students were proficient. Activities will be added to the course curriculum which incorporates more problem solving and time management skills to improve respondent results in these areas.

**Assessment Project 3-** The Health Information Administration assessment focuses on the course, Professional Practice Experience (PPE) – which includes the following two courses taken during the HIA student’s senior year:

- 1) M443 – Professional Practicum in Health Information Management I;
- 2) M444 – Professional Practicum in Health Information Management II.

These courses are designed to provide professional practice experiences to the students in an approved clinical site under the direction of an HIA faculty member and an onsite professional practice instructor. Students also receive didactic and practicum experience in the classroom. Throughout these courses emphasis is placed on clinical science, health information management, and business administration and information systems.

**1. PPE Site Facility Visit Outcomes**

- Ability to apply didactic knowledge in the professional practice setting in the following areas; CPT coding, quality improvement, hospital planning and systems, computer applications, seminar and in-service, long term care, alternate delivery systems, healthcare reimbursement and psychiatric record systems.
- Application of common health information techniques and practices in simulated settings.
- Application of the technical and administrative skills necessary to function in health information services area.
- Ability to communicate clearly and effectively with diverse populations, including students, practitioners and clinical instructors.
- Ability to quantitatively analyze data which are commonly utilized by the health information profession.

PRAC Questions:

**a) What general outcome are you seeking?**

The general outcome of these two courses are to enable students to communicate clearly and effectively with diverse populations, incorporate ethical decision-making, and participate in activities which affect social and professional policies.

**b) How would you know it (the outcome) if you saw it? (What will the student know or be able to do?)**

- Students will demonstrate the ability to communicate clearly and effectively with diverse populations, including students, faculty and guest lecturers.
- Use effective writing techniques on all assignments.
- Learn to be flexible by accommodating changes in plans and managing multiple concurrent assignments.
- Demonstrate ethical decision-making into practical experiences.
- Commit to abiding by the ethical standards of the health information profession.
- Use information technology by utilizing PowerPoint and other visual aids when making presentations to fellow students and faculty.
- Commit to academic honesty.
- Demonstrate their ability to critique professional literature
- Analyze rationales for reliability and validity
- Conduct literature reviews, collect data, analyze data and present results.

**c) What opportunities do students have to learn it? ( in class or out of class)**

Students will learn many of the outcomes while at the healthcare facility they are assigned to and also during the in-class practicum in the classroom with the HIA faculty.

**d) How are you measuring each of the desired behaviors listed in (b.)?**

- During the in-class practicum students are required to complete in-class discussions regarding their previous facility visit and complete assigned projects relevant to the previous facility visit.
- During the facility visits students are required to complete Task, Inquires and a Narrative Summary of the unit(s) assigned for that visit. This information is then reviewed for content to ensure the student received the information and knowledge intended for that visit.

**e) What are the assessment findings?**

The completion of each unit depends on the facility a student is assigned to. For example, not many facilities have a Cancer Registry; therefore the student cannot complete the requirements for this unit. Revenue Cycle is another area in which students may or may not get to complete the required elements of the unit.

**f) What improvements have been made based on assessment findings?**

Based on student feedback the following will be continued for the in-class practicum of the PPE:

- Sharing experiences at the beginning of class
- No homework outside of the in-class PPE sessions
- Group work “sprinkled with” individual assignments
- Groups of 3-4 people
- Instructor feedback (i.e. instructor completes the same assignment/project as students so students can see how the instructor approached the assignment/project; give feedback during the in-class PPE session instead of when grading in Oncourse)
- Requiring all students to attend in person
- Use of Diigo
- Learning how to use new tools
- Showing students how to do something new

- Instructors sharing resources with students

Things that may be eliminated include:

- Writing assignments
- Groups of 1 or 2 students
- Research (students would like more hands-on activities)

Projects for 2013/2014

Assessment Project 1- Improve graduate's proficiency in the Health Information Administration (HIA) Baccalaureate Degree Entry-Level Competencies as outlined by the American Health Information Management Association

Assessment Project 2 – Improve student's scores on the Mock Registry examination.

Assessment Project 3 – Assess the new PPE model and student's satisfaction rate on knowledge learned and how it applied to their employment.

## PUL ASSESSMENT

**Program:     Media Arts and Science**

The Media Arts and Science Program selected the N100 Foundations of New Media course for reporting PUL data.

### **1. Assessment: Written Assignment – Comparison Paper**

#### **A. Assessment Written Assignment: First-Year Student Research Paper**

In this assignment, first-year students in the program wrote a comparison paper on a technology topic (e.g., analog vs. digital technologies) of their choice. This assignment required each student to conduct introductory research into an area of technology that would show a marked contrast in the evolution of technologies used in Media Arts and Science

##### **a. What general outcome are you seeking?**

This assignment provides information on students' ability to demonstrate critical thinking in the discipline (PUL 1 – Core communication skills and PUL 2 – Critical Thinking). In this assignment, students demonstrated the ability to apply, analyze, evaluate, and create a comparison paper.

##### **b. How would you know it if you saw it? What will the student know or be able to do?**

Student papers were graded. Comments, analysis of writing skills, and suggestions for improvement were provided.

##### **c. What opportunities do students have to learn it?**

Students used content from the lectures, content from courses N101 Multimedia Authoring and N102 Digital Media imagery, and their own personal knowledge of the topic to inform their choice.

**d. How are you measuring each of the desired behaviors listed in (a)?**

A rubric and instructor review, consisting of ‘track change and recommendations’ were used to assess each student’s paper.

**e. What are the assessment findings?**

Findings from these courses, offered during the fall 2012 and spring 2013 semesters is presented.

The fall 2012 semester enrollment was n =75. The spring 2013 semester enrollment was n = 43.

In fall 2012, 53 students received a ‘Very Effective’ on the PUL scale (70.67%), 12 students received an Effective (16%), 5 students received Satisfactory (5.33%) and 6 students received Somewhat Effective (8%).

In spring 2013, 23 students received a ‘Very Effective’ on the PUL scale (53.49%), 10 students received an Effective (23.26%), 5 students received Satisfactory (11.63%) and 5 students received Somewhat Effective (11.63%).

The results of these findings directly correlate with the course grades reported to students in each semester (e.g., Very effective = A, Effective = B, Satisfactory = C, and Somewhat Effective (D or F).

**f. What improvements have been made based on assessment findings?**

The Media Arts and Science program will begin a comparison of academic findings from previous years’ data and report the results in the upcoming 2013-2014 academic year.

**2. Assessment Project: Capstone Websites (continuing)**

In the MAS program, students produce a final project as the capstone of their academic career in the class NEWM-N499. As part of this endeavor, students describe their projects and provide a profile using a website template at IUPUI (e.g., myPage). In this ongoing assessment project, we evaluated students’ ability to produce these Websites (PUL 3) and use them effectively to communicate (PUL 1A) about their Capstone project. The goal in MAS was for students to present a synopsis of their project and discuss digital media production processes during their capstone experience.

**a. What general outcome are you seeking?**

Students are able to create a public Web site that communicates about their Capstone project and their future plans (PULS 3 and 1A).

**b. How would you know it if you saw it? What will the student know or be able to do?**

The student will produce multi-media material to document their project and present this material through a Website.

**c. What opportunities do students have to learn it?**

Various courses throughout the program, starting at the 100-level, prepare them for this task.

**d. How are you measuring each of the desired behaviors listed in (a)?**

Currently, we are looking at task-completion rates and very basic metrics for quality. We intend to extend this to additional measures in the future.

**e. What are the assessment findings?**

**f. What improvements have been made based on assessment findings?**

Based on the low participation rate in the fall, we changed the way we communicated with students about this task, which resulted in much better task-completion rate in the spring. The fact that some students find this task difficult reinforces our earlier curricular decision to introduce personal portfolios (both as technology and communication medium) as early as the 100-level classes. Further, the high participation rate we observed in the spring implies that we can design additional assessment projects using the Capstone Websites as a vehicle.

**Program: Undergraduate Informatics**

The Undergraduate Informatics program reported PULS for four courses during Spring and Summer I semesters for 2013

INFO I330 Legal and Social Informatics of Security (3 credit hours)

Spring 2013

INFO I330 Legal and Social Informatics of Security (online course) is required for the certificate in legal informatics and is an elective for the paralegal program offered through the School of Liberal Arts. At the end of the semester, there were 40 students enrolled in the course. All assignments in the course were assigned PULs of Major, Moderate and Some Importance.

The PUL of Major Importance in the course is PUL 3: Integration and Application of Knowledge. Students were assessed using this PUL in a Case Study (#2), which is a substantial writing assignment based on a hypothetical, but real-world scenario. For this PUL, 5 students received a rating of Very Effective for the demonstration of their learning through the comprehensiveness and quality of their submission for Case Study #2, 14 students received a rating of Effective, 11 students received a rating of Somewhat Effective and 10 students received a rating of Not Effective. The lower ratings reflect students' dislike/dread of writing as well as failure to read the instructions and respond in a comprehensive fashion to all of the elements/sub-parts of the assignment.

The PUL of Moderate Importance in the course is PUL 2: Critical Thinking. Students were assessed using this PUL related to responses to the weekly Discussion Forum questions. These questions not only cover the material from that week's Module, but also ask students to self-reflect, provide their own opinions and share their expertise. Each student also goes

back to the responses for the previous Discussion Forum and provides feedback to one student, so that students not only receive my comments each week but also those of their peers. For this PUL, 21 students received a rating of Very Effective for the demonstration of their learning through their participation in the Discussion Forums, 13 students received a rating of Effective, 5 students received a rating of Somewhat Effective and 1 student received a rating of Not Effective (which indicates a student who rarely, if ever, participated in the Discussion Forums).

### INFO I453 Computer and Information Ethics (3 credit hours)

In Spring 2013, INFO I453 Computer and Information Ethics, (online course) was offered. This course is a required core course for the Undergraduate Informatics program. At the end of the semester, there were 34 students enrolled in the course. All assignments in the course were assigned PULs of Major, Moderate and Some Importance.

The PUL of Major Importance in the course is PUL 6: Values and Ethics. I assessed this PUL using the Self-Reflection on Computer and Information Ethics. At the beginning of the semester, I have students complete a Pre-Test on Computer and Information Ethics that contains 31 short vignettes of behaviors/activities that students are asked to evaluate as ethical, acceptable, questionable, unethical or illegal. I do not provide the students with access to their responses. At the end of the semester, I have students complete a Post-Test on Computer and Information Ethics, which contains the same 31 short vignettes. Once students have completed the Post-Test, I release their responses to both the Pre-Test and the Post-Test and then ask them to compare and contrast their responses and then reflect on whether they changed and why. Of course, I am hoping that they indicate the impact that the course had on their views about values and ethics. In terms of this PUL, 15 students received a rating a Very Effective for the demonstration of their learning through their thoughtful and thorough responses to the questions posed in the Self-Reflection, 7 students received a rating of Effective, 3 students received a rating of Somewhat Effective and 9 students received a rating of Not Effective (some of these students failed to complete either the Pre-Test or the Post-Test, making their participation in the Self-Reflection impossible).

The PUL of Moderate Importance in the course is PUL 5: Understanding Society and Culture. I assessed this PUL using the responses to the weekly Discussion Forum questions. These questions not only cover the material from that week's Module, but also ask students to self-reflect, provide their own opinions and share their expertise. Each student also goes back to the responses for the previous Discussion Forum and provides feedback to one student, so that students not only receive my comments each week but also those of their peers. For this PUL, 16 students received a rating of Very Effective for the demonstration of their learning through their participation in the Discussion Forums, 13 students received a rating of Effective, 4 students received a rating of Somewhat Effective and 1 student received a rating of Not Effective (which indicates a student who rarely, if ever, participated in the Discussion Forums).

INFO I400/NEWM N485 Legal and Business Issues in Informatics (3 credit hours)

In Summer I 2013, the online course title, INFO I400/NEWM N485 Legal and Business Issues in Informatics (entrepreneurship), was offered as an elective for our Undergraduate Informatics as well as other programs and is cross-listed as INFO I550 Legal and Business Issues in Informatics. At the end of the semester, there were 15 undergraduate students enrolled in the course. All assignments in the course were assigned PULs of Major, Moderate and Some Importance.

The PUL of Major Importance in the course is PUL 3: Integration and Application of Knowledge. I assessed this PUL using the responses to the weekly Discussion Forum questions. These questions not only cover the material from that week's Module, but also ask students to self-reflect, provide their own opinions and share their expertise. For this PUL, 12 students received a rating of Very Effective for the demonstration of their learning through their participation in the Discussion Forums and 3 students received a rating of Effective.

The PUL of Moderate Importance was 1A: Core Communication: Written, Oral and Visual Skills. I assessed this PUL based on a research/writing assignment that takes place at the beginning of the semester, the Preliminary Company Idea Assignment. For this PUL, all 15 undergraduate students enrolled in the course received a rating of Very Effective for the demonstration of their learning through the comprehensiveness and quality of their submission for the Preliminary Company Idea Assignment.

INFO I470/NEWM N485 Litigation Support Systems and Courtroom Presentations (3 credit hours)

In Summer I 2013, I team-taught an online course, INFO I470/NEWM N485 Litigation Support Systems and Courtroom Presentations. 330 Legal and Social Informatics of Security is an online course that is not only a required course for the certificate in legal informatics, but is also an elective for the paralegal program offered through the School of Liberal Arts. At the end of the semester, there were 7 students enrolled in the course. All assignments in the course were assigned PULs of Major, Moderate and Some Importance.

The PUL of Major Importance was 1C: Information Resources Skills. We assessed this PUL using the SmartDraw Midterm Mini-Project, which required students to use the SmartDraw software to provide a detailed floor plan of the room in their house/apartment/office where they study. This assignment not only evaluates students' competence in using the software, but also their ability to follow the instructions and to provide a floor plan with all of the details requested. Students also provide photographs of their rooms so that we can match what they created with reality. For this PUL, 6 students received a rating of Very Effective for the demonstration of their learning through the comprehensiveness and quality of their floor plans and 1 student received a rating of Somewhat Effective (having failed to follow the instructions and provide all of the requested elements).

The PUL of Moderate Importance in the course is PUL 3: Integration and Application of Knowledge. We assessed this PUL using the responses to the weekly Discussion Forum questions. These questions not only cover the material from that week's Module, but also ask students to self-reflect, provide their own opinions and share their expertise. For this PUL, all 7 students received a rating of Very Effective for the demonstration of their learning through their participation in the Discussion Forums.

### **Student satisfaction, student graduation and employment**

Updated summary data on student satisfaction, student graduation and employment will be reported from the School in the 2013-2014 report.