Appendix II

OEAE's full report - Periodic Review Report to MSCHE
(June 2010)

University of Puerto Rico Rio Piedras Campus
Office of the Dean of Academic Affairs
Office of Evaluation of Student Learning

Report on Assessment of Student Learning in Undergraduate Academic Programs

Introduction

The University of Puerto Rico, Rio Piedras Campus is engaged in a systematic and ongoing process of assessment of student learning since the Institutional Student Learning Evaluation Plan (SLEP) was approved by the University Senate on April 2006 (Link 1 – Evaluation of Student Learning Plan). Prior to its approval, the Plan was thoroughly discussed in different campus groups and through public hearings. The recommendations collected in those forums and those of the Committee of Academic Affairs of the Academic Senate were incorporated to the document. As approved by the Academic Senate, the SLEP constitutes the framework for the assessment of student learning. The SLEP is to be implemented in cycles that periodically increase the number of domains and learning objectives being assessed, both in terms of competencies included in the graduating student profile and in program learning objectives. A primary reason for this endeavor is to improve student learning and to honor our institutional commitment in developing a culture of assessment. As an institution, we want to know, and want our students to know, how well they are learning to use the complex knowledge and abilities that faculty articulate as essential to their learning. A second reason is to provide realistic answers to legitimate questions about student learning that arise from external evaluation by peers, policy makers, and the public. In addition, in 2006 the Campus approved a graduating student profile for all undergraduate students independent of program of study (Link 2 – Certification Num. 46, 2005-2006). For these reasons, the University is committed in developing a deeper understanding of the level and quality of student learning in each of its academic programs[1]. Concurrently with this commitment, the University of Puerto Rico at Rio Piedras underwent a campus wide effort revising 70 undergraduate academic programs on campus. Details of this process and its linkage to learning assessment are presented in Chapter 2 of this report.

Description of the Implementation Process

The Office of Evaluation of Student Learning (**OEAE** for its Spanish acronyms) was created under the Deanship of Academic Affairs. The mission of the OEAE is to coordinate and institutionalize student learning assessment efforts through the implementation of the Student Learning Evaluation Plan of the University of

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[1] In this context, *program* may refer to a program, curriculum, a major, a department, or an entire school.

Puerto Rico, Río Piedras Campus. Also the OEAE provides support services to program assessment coordinators about the selection of suitable quantitative and qualitative instruments, and the disclosure of assessment results within the campus. An institutional coordinator from the College of Education and a Research Assistant were appointed to the OEAE in August 2006. In January and August 2008 an Associate Coordinator, from the College of Natural Sciences and an Assessment Technician were appointed respectively. The Assessment Technician gives support to the academic programs in the statistical analysis of assessment findings. All information related to the assessment process and workshops held so far is available at http://www.oeaeuprrp.blogspot.com. The website includes assessment plans for each program, the competencies and learning objectives evaluated, the assessment rubrics and the activities, and the annual reports, among others (See link 3 for the services rendered by the OEAE). Support to this Office establishes the Campus commitment to a sustained process of assessment.

Since 2001, the Río Piedras campus has been training its faculty members in the evaluation of academic programs and in the assessment of student learning. Through the Center for Academic Excellence, Summer Assessment Institutes (scheduled in June 2001, 2003 and 2004) and *Cycles for designing a proposal for the Evaluation of Student Learning Plan* were offered. From the second semester of academic year 2004-2005, efforts have been intensified through workshops or activities in themes related to the teaching and learning processes and its assessments. A total of 894 faculty members participated in 38 workshops or activities and 269 faculty participations in 6 assessment cycles. The OEAE programmed education workshops in order to train the assessment coordinators in the assessment processes and in the development of the assessment plans. Also, presentations of outstanding assessment's plans were given by the assessment coordinators in order to continue strengthening the culture of assessment at the institution (For a complete list of assessment related activities offered since the second semester 2004-2005 see Link 4).

In 2007, nine faculty members were appointed as Assessment Coordinators to be in charge of the development and implementation of the Student Learning Evaluation Plan at the program level, and for the coordination and supervision of related assessment activities. They were given release time or compensation equivalent to 3 credits-hours for this effort. Budget was reoriented for this task. As of 2008, 43 faculty members from eight Colleges or Schools were appointed as assessment coordinators for their respective academic programs. In some Colleges or Schools, one coordinator is in charge of the assessment activities of more than one program. All Assessment Coordinators named so far have been trained. Some Colleges or Schools appointed assessment coordinators at the college level to overview the assessment process of their academic programs. The College of General Studies appointed a General Education Coordinator to supervise the assessment activities of the general education competencies such as: communication skills in Spanish and English, research and social responsibility (For a complete list of Assessment Coordinators see Link 5). These processes show a strong support and commitment from the institution to the assessment of student learning. Through the academic years 2008-2010 individual meetings with assessment coordinators have been

scheduled to discuss their assessment plans and the design of the assessment instruments. Also, these sessions served to analyze their assessment findings and the proposed transforming actions in the annual reports. During the academic year 2007-2008, the Academic Senate approved Certification 33 (see Link 6), which establishes an institutional policy for the partial evaluation of the student's academic progress. This evaluation period is scheduled for the eighth and ninth week of the semester for students to take the corresponding actions before the partial withdrawn dates. This also guarantees to both students and faculty members the necessary information for academic planning and decision-making.

Implementation Stages

For the purpose of this report, the *Student Learning Evaluation Plan* (SLEP) refers to the framework that guides the evaluation processes at the institutional and program level, and the *student learning assessment plan* establishes the course of action through which each academic program will assess student learning.

Designing of a student learning assessment plan

A thorough research of the assessment and evaluation literature was made for a simple, user friendly but suitable format for the assessment plan and the annual report to be used by each academic program. The OEAE chose a table-type format for those documents that included a brief narrative, which explained the learning activities to be assessed, the assessment instruments to be used, and the transforming actions identified to enhance student performance. The documents consisted of two parts: assessment of the learning outcomes stated in the baccalaureate student profile and the assessment of the content knowledge, skills and dispositions that characterizes each program. The format for the assessment plan designed by the Office for the Evaluation of Student Learning and its annual report were discussed and approved by the assessment coordinators (Link 7 – Plan and Annual Report formats). Group and individual trainings were given in the development of the assessment plans.

Assessing of student learning at the program level

The SLEP establishes that the assessment of student learning should start with four learning outcomes from the institution's Mission and graduating student Campus Profile approved in the bachelor curricular revision. These learning outcomes are: Effective Communication, Research and Creativity, Social Responsibility and Critical Thinking. Each program selected, at least, two of these four learning outcomes and one content knowledge, skill or disposition that characterize each program to start the first cycle of the assessment process.

For the purpose of this evaluation process an assessment cycle was defined in accordance to the following stages: selection of the competencies or learning outcomes to be assessed, establishment of the learning objectives related to the learning outcomes, identification of the educational activities,

designing the instruments and metrics to collect pertinent data, selection of the different check points for the collection of data, analysis of the data collected and the proposal of transforming actions. In the next cycle the implemented transforming actions are evaluated and new domains are added to the ones already assessed. The time frame established for each cycle is one year. Each program must submit a five-year student learning assessment plan in which they include at least six of the learning outcomes or competencies stated in the graduating student learning profile. The academic programs are responsible for disseminating the learning outcomes to faculty members; academic advisors and the student body and providing transforming actions after the collected assessment data have been analyzed.

As of May 2010, 52 programs (79%) are in their second assessment cycle. Since during the first initial stage of the implementation process the focus was centered in the training of faculty members in order to develop a culture of assessment, it was decided that these academic programs continue the assessment of student learning evaluating the same domains selected during the first year. Nevertheless, during the next year they will add two different competencies to the student learning assessment plan. By 2010-2011, each program will be in the second cycle of their assessment process and 52 programs will begin their third cycle.

Academic program's assessment approaches differ due to the complexity of the educational process and the diversity of our campus learning environments. Collective faculty efforts and commitment is required to establish learning goals for academic programs in order to implement and sustain a set of ongoing teaching and learning, assessment, and feedback practices that will allow faculty to be more aware of the effectiveness of their work. The Office of Evaluation of Student Learning designed a web blog (http://www.oeaeuprrp.blogspot.com) for this purpose. This site has been created to support faculty in that endeavor and at the same time to disseminate the ongoing assessment process to the different constituents. This dissemination process will provide evidence on how well the institution is achieving its mission and goals regarding the academic profile of its graduates.

Although the assessment of the student learning process is being done for the first time in 66 out of 70 undergraduate academic programs at the Rio Piedras Campus, forty-four of them (63%) also undergo an accreditation process by external agencies. Even though the Philosophy Program at the College of Humanities submitted an assessment matrix of student learning, at this moment they are not involved in the assessment process. Since the institutional Student Learning Evaluation Plan is tied to the revision of the Baccalaureate Degree (details of the Baccalaureate Degree revision process are presented in Chapter 2) the last three academic programs submitted for approval by the Academic Senate, included an alignment matrix with the expected leaning outcomes, the proposed assessment activities and the assessment instruments to be used as part of the revision proposal.

In academic year 2006-2007, nine (9) programs were revised and approved by the Academic Senate. During the 2007-2008 academic year the academic programs developed their assessment plans under the guidance and support of the OEAE. By 2008-09, 58 revised undergraduate programs were approved by the Academic Senate. Once revised, they designed their assessment of student learning plans (see chapter 2 in relation to the revised academic programs approved by the Academic Senate). The plans were discussed thoroughly by each academic program faculty and they started to collect the assessment data and analyze the results of their assessments. Examples of assessment plans designed by the academic programs and their annual reports can be found in the OEAE blog (http://www.oeaeuprrp.blogspot.com).

As of May, 2010, sixty six programs out of 67 (99%) designed their Student Learning Evaluation Plan. Sixty five of these 66 programs (97%) collected assessment data, 64 of them (96%) analyzed their findings and fifty eight programs (87%) proposed transforming actions closing the assessment loop. Ninety-three percent of all undergraduate programs have submitted a partial annual report on the assessment results for the first semester of the academic year 2009-2010 (see Figure 1).

Figure 1

Baccalaureate academic programs' assessment status*
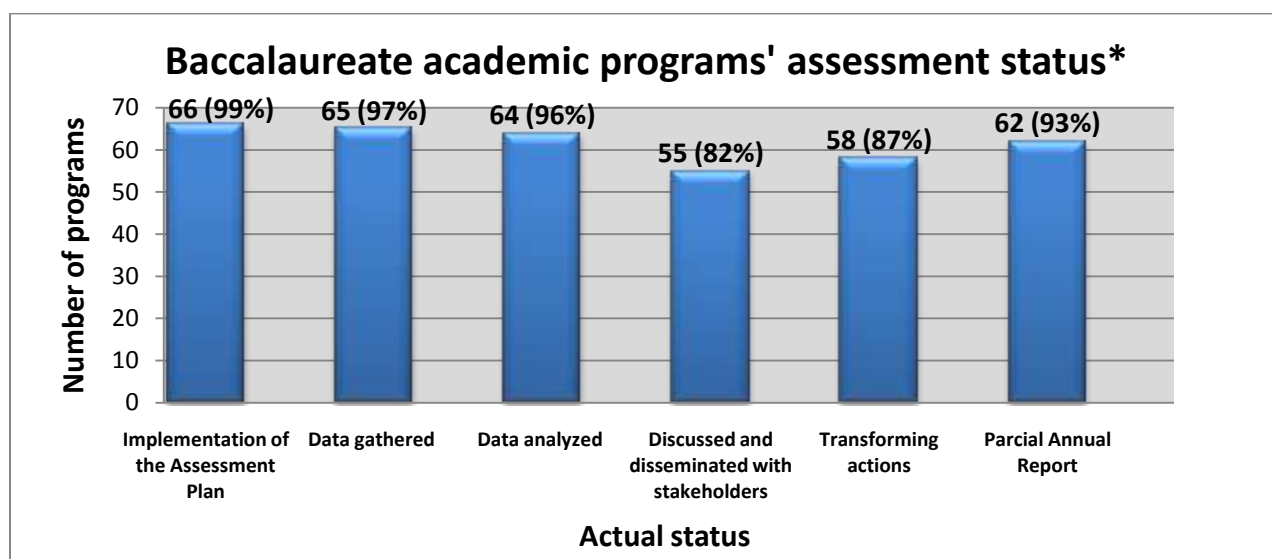
*Revised May, 2010. The status reflects academic programs with revised baccalaureate degrees only. As of December 2009, the curricular revision of 3 academic programs hasn't been approved by the Academic Senate of the University of Puerto Rico, Rio Piedras Campus.

The approved SLEP to be implemented in cycles begins assessing two of the following four mission domains or competencies: Effective Communication, Critical Thinking, Research and Creation and Social Responsibility (Link 8 – Domains assessed by Colleges and Academic Programs including assessment activities and instruments). This is shown in the high percentages presented in the

following table. All programs were to assess communication competencies. This competency was also assessed at the institutional level (see Chapter 2 for further details of this endeavor).

The learning domains assessed by the 66 programs that implemented the Student Learning Evaluation Plan, and the number of programs that evaluated them are described in the following table:

Table 1

Domains being assessed	Number of academic programs assessing it	Percentage	Domains being assessed	Number of academic programs assessing it	Percentage
Effective Communication	62	93%	Integration of Knowledge	1	1%
Critical Thinking	48	72%	Lifelong learning	1	1%
Research and Creation	26	39%	Information Literacy	8	12%
Social Responsibility	41	62%	Ethical and Aesthetical Sensibility	1	1%
Content Knowledge, Skills or Dispositions	43	65%	Use of Technology	1	1%
Intellectual Curiosity	2	3%	Logical and Mathematical Reasoning	4	6%
Capacity for Independent Study	1	1%	Globalization	1	1%

Assessing Student Learning at the institutional level

- Communication in Spanish and English

  As part of the institutional efforts, the Office of Evaluation of Student Learning (OEAE) together with the Office of the College Board for Puerto Rico and Latin America developed a Project to evaluate the writing skills of the incoming class. During the 2007-2008 academic year, a writing test was administered to students from the first nine academic programs that started the revised curriculum. (Physics, Mathematics, General Science, Biology, three programs from the School of Communication, and two programs from Humanities: Arts and Interdisciplinary Studies). Four hundred and nine (409) students participated in this test administration. This number of students represented 58% of the total population. The areas evaluated were: theme and structure, lexical competency, domain of syntactical structures and grammatical correctness. The College Board developed a rubric and the grading process of the essays produced by the students. The results indicated that 21% of the students showed limited writing skills. Results were presented and discussed among the deans, associate deans and student learning assessment coordinators for the corresponding actions. The students were referred to the Center for Linguistics Competencies.

Some of the comments made by the language experts who graded the test in terms of difficulties showed by students were:

- Lack of domain on the basic structure of an essay.
- Transitional errors between paragraphs.
- Lack of linguistics correctness due to a limited vocabulary.
- Poor and redundant vocabulary usage.
- Poor use of connecting words (prepositions and conjunctions).
- Lack of knowledge of verb tenses and the subjunctive.

Collaborative efforts with the College Board continued during the 2008-2009 academic year. A writing test was administered during that year to a sample of 1,604 newly admitted students. This sample represented 82% of the student body from the revised curriculum. For this test administration, results indicated that 88% of the students showed poor writing skills. The areas identified as problematic for the students were similar to the ones during the first year of the Project. These areas were:

- Lack of domain on the basic structure of an essay.
- Lexical restrictions.
- Orthographic errors.
- Transitional errors between paragraphs.
- Lack of linguistic correctness due to a limited vocabulary.
- Poor use of connecting words (prepositions and conjunctions).
- Lack of knowledge of verb tenses and the subjunctive.

The discrepancy observed in the two test administration results might be explained by the heterogeneity of the two groups that were tested. The first group tested was composed of the highest-ranking students admitted during the 2007 year. This was a pilot study to assess written communication skills of the incoming students. The second group included all students admitted in the incoming class of the 2008 academic year.

The results were presented and discussed with the student learning assessment coordinators. In light of these findings the following actions were taken and implemented since then: 1) coordination of writing workshops with the Center for Linguistics Competencies; 2) development of a writing program called Writing Zones in the College of Education, where all the teacher candidates attend the workshops (attendance to the workshops is mandatory); 3) offerings of writing skills workshops in Spanish and English at the College of Business Administration; 4) creation of a writing seminar in the School of Communication. Students identified with writing difficulties are since then assigned to one of the above institutional initiatives. According to the student's academic needs, programs have integrated activities in their curriculum in a consistent and systematic way.

As part of the institutional efforts, and in coordination with the College Board, an English Language Assessment test (ELASH II- English Language Assessment System for Hispanics II) was administered to a sample of 819 newly admitted students in 2008-2009 to evaluate listening and writing comprehension, and language use. The results were shared with the student learning assessment coordinators, the deans and academic associate deans of the different Colleges and Schools. The scores were categorized by the CEEB in four levels: Advanced, High intermediate, Low intermediate and Novice. Scores on the Low intermediate and Novice indicate low performance in the skills measured by the test. The results showed that 10.4% of the students performed in the Low intermediate and Novice category in Listening. Forty two percent scored Low intermediate and Novice in Language use; and 43% in Reading Comprehension. The English Department from the College of General Studies designed a pilot project in order to study the skills that have to be enforced in the English courses (see Chapter 2 for a detail description on the General Studies English Department Report on evaluation of competencies in the General Education component).

In August 2009 a post test on writing skills in Spanish was offered to a sample of 201 students who obtained low scores on the previous Spanish pre-test offered on October 2007 and August 2008. Results revealed that 68% of the students (136) continue showing difficulty in syntactical structures, lexical competency and grammatical correctness. These results were shared this semester (second semester 2010) with the Student Learning Assessment Coordinators and with representatives from the General Student Council. These tests were a first formal diagnostic of newly admitted students strengths and weaknesses in writing skills. Findings evidence the need to continue with development and assessment of these skills across the curriculum and from the perspective of the disciplines.

The English Department from the College of Humanities started an evaluation process in Oral Communication Competencies for students who are taking English as a Second Language (ESL). Rubrics have been developed for the evaluation process. The rubrics will be administered during the second semester of the 2009-10 academic year.

Research skills and social responsibility competencies were assessed on introductory science courses at the College of the General Studies as part of the General Education component. The University Library System is in charge of organizing, developing and assessing information literacy competencies in all academic programs (see Chapter 2 for a detailed description of the assessment of these competencies). The OEAE actively participated in the organization, training, sampling, and in the analysis of findings of the assessment activities. It also look out that the proposed transforming actions were attainable.

Dissemination of the Assessment Process

Since January 2008, numerous meetings and activities have been coordinated with diverse groups at different administrative levels and by different means, including electronic media, to inform our constituents about the student learning assessment process that has been taking place at the University of Puerto Rico, Río Piedras Campus. Moreover, diverse activities to advance this endeavor were programmed by the Office of Evaluation of Student Learning. Among the different activities we can mention meetings with deans, associate deans, department chairs, assessment coordinators, and the Student Council to inform on the status of the assessment process on Campus (for a list of meetings with academic community members see Link 9). Information related to the assessment plans, institutional activities to gather data, and the results of the assessments from the different programs and schools can be found at the OEAE's Blog (www.oeaeuprrp.blogspot.com).

Discussion of Assessment Results - Assessment Findings and Transforming Actions

In this section, findings and transforming actions will be presented from the assessment activities on the first four learning outcomes chosen by each academic program for their initial evaluation process. These learning outcomes, as mentioned before, are: Effective Communication, Critical Thinking, Research and Creativity and Social Responsibility. Also, findings and transforming actions will be presented from the assessment activities of Content Knowledge, Skills or Dispositions, which are characteristic of each academic program.

Communication Skills Competency

Definition: Ability to express oneself effectively in oral and written language that insures a clear, coherent and accurate communication.

Assessment/Action Plan:

Of all 66 academic programs that engaged in the assessment of student learning process, 62 (93%) assessed effective communication skills. Of those 62 programs, 58 (94%) reported positive learning outcomes in this competency according to expected results established by the programs. Fifty five percent of the academic programs have implemented transforming actions as a result of the assessment process. For example, in the Physics Department the communication skills were assessed in two courses (FISI 3174 and FISI 4077). The expected outcome was that all students would demonstrate effective written communication skills in laboratory reports according to the standard of 70% or more in the rubric. In FISI 3174 only 67.5% of the students achieve the expected outcome. In FISI 4077, a more advanced course, the students obtained 85%, achieving the expected outcome. As a transforming action they send letters to the students that did not met the criteria in which they were asked to go for tutoring sessions to the Center for Linguistic Competencies.

For other examples of the competencies assessed, learning outcomes and transforming actions see [Link 10 – Table of assessment findings and transforming actions by Colleges and Academic Programs](#).

Forty one programs (66%) used at least two different activities to collect data. All programs used direct measures to collect data on this learning outcome. Currently, reported assessment methods for competency in written and oral communication are embedded in the discipline courses throughout the curriculum. Evidence of student ability to communicate effectively was assessed through the following activities and techniques: the College Board Writing Skills test, laboratory reports, design projects, research article reviews, critiques, research papers and projects, essays and oral presentations, persuasive arguments, oral presentations, and supervised practicum, among others ([see Link 8 – Domains assessed by Colleges and Academic Programs including assessment activities and instruments](#)). Fifty six percent of them proposed transforming actions, which are already implemented. All academic programs proposed transforming actions, which will be implemented in August 2010, in view to the fact that they started their assessment of student learning process during the academic year 2009-2010. Transforming actions proposed by the General Education component are detailed in Chapter 2.

As a result of the assessment process, the academic programs implemented the following transforming actions:

- *All programs* - Courses syllabi have been modified to include objectives centered in student-learning processes.
- *Most programs* - Referral of incoming students that showed low performance in the College Board Writing Skills Test to the Center for Linguistic Competencies at the College of General Studies.
- *School of Architecture* – Selection of key courses to measure communication skills in introductory courses (ARQU 3121) and advanced level courses (ARQU 4214).
- *School of Architecture* – Addition of a new topic in Information Literacy (5 hours) to a course syllabus (ARQU 3121).
- *College of Education* - Mandatory assistance of all teacher candidates to the Writing Zones Project at the College of Education as part of their pre teaching practicum courses.
- *School of Communication* - Students that showed low performances in Spanish are required to take a non-credit course in Spanish.
- *Most programs* - Tutoring and workshop sessions in both languages were offered at the Center for Linguistics Competencies.
- *Nutrition and Dietetics Program* - Students were given the opportunity to revise their assignments to assure that they understand their mistakes.
- *General Science program at the College of Natural Sciences* - Writing courses were required to the students that showed low performance on their Spanish and English courses.

- *Information and Journalism program (INFP 4001, INFP 4002)* - Two courses were revised to include the components of sound and photography as well as writing for the Internet, video, and creation of web pages.

The following transforming actions will be implemented in August 2010:

- *Fine Arts* - Use of electronic forums to continue developing effective communication skills in Spanish and English.
- *Political Science* – Focus group discussions to assess students' perceptions about how well the program prepares them in this competency will be organized.
- *Geography* - Oral presentations to develop a culture of Spanish and English oral communication in students will be scheduled more frequently.
- *Spanish* Studies - Professors will give more essay type exams or questions in exams, written exercises and critique reports.
- *Sociology and Anthropology* - More written assignments, papers and research projects in Spanish and English will be required to facilitate and to develop comprehension and language acquisition.

In all these assessment processes as well as in the transforming actions to be implemented, the department chairs have an essential role in maintaining an ongoing culture of assessment in the academic programs. To this effect, periodical meetings with academic program directors have been scheduled to discuss evaluation findings.

Critical Thinking Competency

Definition: A thinking skill that enables the student to analyze and interpret the object of study, through judging, criticizing and analyzing the diverse perspectives in a thorough and constructive way, aiming for the development their own criteria.

Assessment/Action Plan:

Of all 66 academic programs that engaged in the assessment of student learning process, 48 (72%) decided to assess critical thinking skills. All programs used direct measures to collect data on this learning outcome. Currently, reported assessment methods for competency in critical analysis and reasoning are embedded in the courses. Evidence of student ability to think analytically was gathered for evaluation through: laboratory exercises and exams, higher thinking skills questions in exams, electronic discussion forums, e-portfolios, design projects in architecture, research articles, critiques, research papers and projects, essays, oral presentations, persuasive arguments, and supervised practicum, among others (see Link 8 – Domains assessed by Colleges and Academic Programs including assessment activities and instruments).

Forty one of the 48 programs (85%) that measured critical thinking competencies met the expected outcomes according to the benchmarks proposed. Thirty five programs (73%) used at least two different activities to collect data.   All of them proposed transforming actions to be implemented in August 2010. For example, the Psychology program utilized an analytic rubric on two courses (PSIC 3003 and PSIC 4001) to gather data in relation to student's critical thinking skills. Findings revealed that students on the lower level course (PSIC 3003) could not meet the expected 70% outcome on the rubric. Only 2.9% of the students achieved the expected outcome. Nevertheless, when the same rubric was used to measure the same learning outcome on an upper level course (PSIC 4001), 86.7% of the students achieved the expected goal. The analysis of the results showed that the incoming students enrolled on the lower level courses have not developed the required critical thinking skills. However, by the end of their baccalaureate degree, the acquired academic experiences through previous courses enabled them to develop the necessary critical thinking skills as stated in the Psychology Program baccalaureate student profile. As a transforming action to be implemented on August 2010, they propose to include a workshop in PSIC 3003 with exercises that requires the use of critical thinking skills. A pre and post test will be given before and after the workshop to evaluate the effectiveness of this strategy.

As a result of the assessment process, the following transforming actions will be implemented on August 2010:

- *All academic programs* - Critical thinking skills will be measured at different stages throughout the curriculum so that the student, upon graduation, could achieve programs goals concerning this learning outcome will be measured.
- *Teacher preparation program* – An electronic portfolio is been developed through the courses FAED 4001, 4002, and 4003 to document and reflect about education practices in order to enhance a systematic and effective reflection capacity as a fundamental element of critical thinking.
- *Anthropology and Sociology* - Courses will incorporate more open discussions in class.
- *Fine Arts* - Professors will model effective teaching strategies that enforce the development of critical thinking skills prior to the assigned learning activity.
- *Physics* - Include clear learning objectives in the syllabi geared toward the development of critical thinking skills.
- *Physics* - Professors will prepare and distribute rubrics so that students know what is expected of them regarding this competency.
- *Audiovisual Communication* - Professors will make a clear statement about critical thinking in their discipline and the integration of these skills on the learning activities assigned.
- *Geography* - Increase learning activities that emphasize critical thinking in order for students to achieve domain in these skills.

- *History of Europe and the Americas* - Use graduate students as tutors in programmed activities to develop critical thinking skills.
- *Labor Relations* – Change the course level code from 4000 to 5000 (in courses RELA 4006, 4015, and 4055) to enhance the theoretical and philosophical formation necessary for critical analysis, especially important to pursue graduate studies.
- *All academic programs* - Formative evaluations for research or special projects to provide an ongoing development of critical thinking skills on students will be used.
- *Political Science* – Focus group discussions to learn about students' concerns related to their program profile will be organized.
- *Psychology* - Workshops on critical thinking skills will be increased.

For other examples of the competencies assessed, learning outcomes and transforming actions see Link 10 – Table of assessment findings and transforming actions by Colleges and Academic Programs.

Research and Creation Competency

Definition: Mastery of skills needed to design and conduct a systematic, objective and critical investigation, qualitative or quantitative, of a scientific or social problem or issue; the ability to create, develop, and present a work of art or literature.

Assessment/Action Plan:

Of all 66 academic programs that engaged in the assessment of the student learning process, 26 (39%) chose to assess research and creation skills. In general, all 26 programs used both direct and indirect measures to collect data on this learning outcome. Six of those 26 programs (23%) used at least two different activities to collect data. Currently, the reported assessment methods for research skill competencies are embedded in the discipline courses. Evidence of student ability to do research and demonstrate creativity is evidenced through: poster presentations, research article reviews, design of a recreational program, essays, reflections, presentations and critiques, research proposals, papers and projects, surveys for plays presentations and acting roles' perceptions, case studies, literature reviews, architectural designs and works of art and literature (see Link 8 – Domains assessed by Colleges and Academic Programs including assessment activities and instruments).

Twenty programs (77%) that assessed Research and Creativity met the expected outcomes according to the benchmarks proposed. For example, in the Biology Program at the College of Natural Sciences a rubric was used to gather date related to research skills in the laboratory reports. Findings showed that only 51% of the students on the lower level course (BIOL 3101) met the expected outcome as stated on the rubric. Nevertheless, when the same rubric was applied in BIOL 3112 to measure the same learning outcome, 98% of the students achieved the expected goal of 70% or more. The analysis of the results indicated that the

students enrolled on the lower level courses have not developed the required research skills. However, by the end of their baccalaureate degree, the acquired academic experiences through previous courses enabled them to develop the necessary research skills as stated in the academic program's profile. The College of Education, as part of the Baccalaureate revision, included a three-credit course in Educational Research as part of the requirements for graduation. The research skills are also measured at the institutional level, as part of the General Education component, in the Biological and Physical Sciences courses of the College of General Studies. This will guarantee that research skills are assessed in the student body, including students from the College of Natural Sciences that will have the opportunity to develop research skills as stated in the baccalaureate student profile.

Fifty percent of the programs that measured research skills already implemented the following transforming actions:

- *Social Work* - Extended the number of credits in Research Methods from three to six (TSOC 3132).
- *School of Architecture* – A graduate course in Research Methods was recoded as an undergraduate level course.

- *Labor Relations* - Faculty members incorporated the use of a style manual (particularly APA) in the syllabi of their courses and required students to use their assignments. Also, a course aiming to strengthen students' quantitative competencies was required (CISO 3155) as part of their curriculum.
- *Computer Science* - Encourage students to enroll in research projects or courses.
- *Chemistry* - Research projects developed by the students in QUIM 3002L were presented in a Poster Presentation activity.
- *Biology* - Syllabi were revised to include learning objectives related to research skills.
- *Nutrition and Dietetics* - Students were given the opportunity to revise mistakes on their research reports.

Some programs proposed the following transforming actions to be implemented in August 2010:

- *Anthropology* and Sociology - The research component in all courses, which includes research techniques and research methods, will be strengthened.
- *Social Work* - Courses will emphasize research skills related to the design of a project.
- *Computer Science* – Student's participation in undergraduate research and research methodology courses will be increased.
- *Social Work* - Emphasis will be given to the statement of the problem, revision of the related literature, and technological tools, such as Excel, SPSS, SAS, Minitab, among others, to improve quantitative competencies in students.
- *Labor Relations* - Proper used of style manuals such as APA, MLA and others will be emphasized.

- *History of the Americas and History of Europe* - Graduate students conducting research will mentor undergraduate students.
- *Biology* - Course experiences to improve revision of primary sources, application of the scientific method and hypothesis testing will be increased.

For other examples of the competencies assessed, learning outcomes and transforming actions see Link 10 – Table of assessment findings and transforming actions by Colleges and Academic Programs.

Social Responsibility Competency

Definition: The capacity to apply knowledge and skills gained through the undergraduate experience toward the development of abilities and attitudes that promote ethics and civic responsibility for the advancement of society.

Assessment/Action Plan:

Of all 66 academic programs that engaged in the assessment of the student learning process, 41 (62%) decided to assess social responsibility competencies. Overall, all 41 programs used direct or indirect measures to collect data on this learning outcome. Currently, reported assessment methods for competencies in social responsibility are embedded in the courses through their inclusion on the syllabus. Student competencies in social responsibility were assessed through group discussions, study cases, College Board Teacher Candidates Disposition Test, field experiences, practicum, research papers, essays, exercises and assignments, oral presentations, reflections, and community work (see Link 8 – Domains assessed by Colleges and Academic Programs including assessment activities and instruments).

Fifteen academic programs (35%) that measured social responsibility met the expected outcomes according to the benchmarks proposed. To improve this outcome, the academic programs proposed different academic activities. For example, the faculty members of the Information and Journalism Program of the School of Communication approved a new course, Introduction to Journalism, which will emphasize ethical values of the profession, among other related themes. Also, the faculty members of the Computer Science Program of the College of Natural Sciences took immediate action after finding that the students showed poor attitudes towards academic ethics in group discussion in the course CCOM 3982. They moved the discussion of ethics to the second week of the first semester of the seminar in order to promote on students a positive attitude towards ethics as they enter the university.

Some programs proposed the following transforming actions to begin in August 2010:

- *Anthropology and Sociology* - Develop a program for the dissemination of activities in the community.
- *Labor Relations* - Emphasize on the different criteria to be used in the evaluation of social responsibility in the courses where this competency is assessed.

- *Business Administration* - Emphasize the use of case studies as a useful tool in the clarification of values.
- *School of Communication* - Offer a course (Introduction to Journalism) on Theoretical Foundations, which will emphasize ethical issues and values for the profession.
- *Office Management System*s - Develop new activities and techniques for the evaluation of this competency.
- *Anthropology* - Emphasize ethical issues in all courses.
- *Environmental Sciences* – Continue the discussion of ethics and social responsibility issues in all Environmental Sciences' courses

Social responsibility skills are also assessed at the institutional level in Social Sciences courses at the College of General Studies. For further details in how these skills are been assess see Chapter 2. For other examples of the competencies assessed, learning outcomes and transforming actions see Link 10 – Table of assessment findings and transforming actions by Colleges and Academic Programs.

Assessment of Content Knowledge, Skills or Dispositions Competencies in the Academic Programs

Definition: Graduating students will demonstrate an in-depth knowledge of the content they learned as part of their academic experience. They demonstrate their knowledge through inquiry, critical analysis, and synthesis of the subject. Students demonstrate behaviors that show that they have acquired the dispositions that responsible citizens show. They also demonstrate the necessary skills that support the content knowledge acquired in their disciplines.

Assessment/Action Plan:

Of all 66 academic programs that engaged in the assessment of the student learning process, 43 (65%) assessed content knowledge, skills or dispositions. Since there are different competencies being assessed, content knowledge, skills, or dispositions, and different activities used by the academic programs to assess them, it is more accurate to present the percentage of learning activities in which the expected outcomes were met. Of all 140 activities assessed, 103 (74%) met the expected outcomes; one hundred twenty nine of them (92%) were assessed using direct measures. The learning activities and their corresponding assessment methods are embedded in the course syllabus. An example of learning activities selected to assess these competencies were: partial and final exams, licensure/certification examinations, case studies, design projects, oral presentations, video recordings of students acting performances, group discussions on electronic forums, practicum, written papers, exercises and assignments, among others (see Link 8 – Domains assessed by Colleges and Academic Programs including assessment activities and instruments).

Academic programs used different approaches to assess these competencies. For example, in the Performing Arts Program students' performance on a theatrical play was filmed in order for them to make an auto

evaluation of their acting abilities. This filming process was extended to other program courses, such as Illumination (TEAT 4201), for the students to be able to reflect on their performances. On the Business Administration Accounting core course (CONT 3105), when the ratio analysis concept was assessed using a rubric, only 44% of the students met the expected outcome. It was decided by the faculty members that this concept should be taught on a previous course, Quantitative Methods (MECU 3031), in order for the students to have a basic knowledge before they enroll on an accounting course. The Environmental Design Program of the School of Architecture evaluated student's skills on a design project; the expected outcome was met in three out of five criteria as stated in the rubric. The professors involved proposed that, instead of the actual three credit-hour conferences, the technology and structure courses should consist of a two credit-hour conference and a one credit-hour laboratory in order for students to strengthen the integration of the course content with design exercises.

The strength of our academic programs is also reflected in outcomes such as: 1) the passing rate of our teacher candidates on the Puerto Rico certification exams (on the 2007-2008 year, 92% approved the content part and 88% the professional knowledge; more information is available on https://title2.ed.gov/Title2DR /PassRates.asp), 2) that one hundred percent of the Chemistry majors pass professional revalidation exam (this Program is ranked 10th nationally in Ph.D. degrees granting universities in that field), 3) that ninety one percent of the Chemistry students and 84% of Biology students graduate from their bachelors degree with at least one research experience, and 4) that in the last five years, an average of 83% of Nutritional and Dietetics program's students approved the professional revalidation exam on the first attempt.

Some programs proposed the following transforming actions to begin in August 2010:

- *Chemistry* – Increase the number of higher lever cognitive problems on the partial and final exams.
- *Physics* – Increase skills, techniques and management of laboratory equipment.
- *Computer Science* – Increase the amount of time allotted to the teaching of algorithms on the CCOM 3033 in the course description.
- *Economics* – Establish online working modules on the Blackboard platform for students that showed limited knowledge in searching for economics databases and resources.
- *Anthropology* – Strengthen the research component skills in all Anthropology courses, such as ethnographic and archeological techniques, in order to enhance the comprehension of the human process researched.
- *Nutrition and Dietetics* – Revise the practice guide in the course HOEC 4085 in order to clarify the evaluation criteria.
- Accounting – Increase the time allotted to discuss the topic of governance.

For other examples of the competencies assessed, learning outcomes and transforming actions see Link 10 – Table of assessment findings and transforming actions by Colleges and Academic Programs.

Summary of Assessment results

The following table summarizes, as of May, 2010, the learning outcomes assessed, percentage of academic programs that met the expected outcomes, the number of programs that have implemented transforming actions and the number of programs that are going to implement transforming actions effective August 2010.

Table 2*

Learning outcome assessed	Percentage of programs that met the expected outcome	Number of programs that have implemented transforming actions	Number of transforming actions already implemented	Number of transforming action to be implemented in August 2010
Effective Communication	Fifty eight of 62 academic programs (94%) reported positive learning outcomes in this competency.	Thirty four of 62 academic programs (55%)	60	80
Critical Thinking	Forty one of the 48 academic programs (85%) that measured critical thinking competencies met the expected outcomes.	Twenty eight of 48 academic programs (58%)	40	60
Research and Creation	Twenty of the 26 academic programs (77%) that assessed Research and Creativity reported positive learning outcomes in this competency.	Thirteen of 26 academic programs (50%)	21	36
Social Responsibility	Fifteen of 41 academic programs (35%) that measured social responsibility met the expected outcomes.	Twenty eight of 41 academic programs (68%)	32	15
Content Knowledge, Skills and Dispositions in the Academic Programs	Thirty five of 43 academic programs (81%) reported positive learning outcomes in this competency.	Thirty two of 43 academic programs (74%)	50	31

* Revised as of May, 2010 with the information submitted to the OEAE.

Prospective Plans

To support and promote an ongoing culture of assessment, prospective plans for the following years, include, among others that all academic programs will:

- Review their assessment plans and instruments after these first two assessment cycles;
- Incorporate at least two additional domains to assess student learning in their assessment plans on each cycle;
- Develop a curricular matrix for the assessment of student learning;
- Develop a five year assessment plan;
- Schedule an assessment day in each College or School;
- Engage more faculty members and students in the assessments process;
- Continue assessing content knowledge, skills or dispositions throughout the curriculum.

Conclusion

The University of Puerto Rico, Rio Piedras Campus is well aware of the importance of the assessment of student learning at the institution. The development of benchmarks, assessment activities, and instruments for collecting data, continuous feedback, and reporting mechanisms are key to the improvement of institutional offerings and to increase the rate of student success. As reported in this document, there are currently intensive planning and assessment efforts that focus on the general education program as well as on competencies in areas outside general education. The assessment activities and results will provide feedback to faculty and academic units to enforce the process of teaching and learning at the institution. Current assessment processes have yielded results that have impacted planning, policy and decision making with regard to educational offerings, General Education and student learning.