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

Undergraduate Academic Programs Assessment of Student Learning Annual Report (2011-2012)

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OEAE
Oficina de Evaluación del Aprendizaje Estudiantil • UPRRP

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Report on the Third Cycle of Assessmentof Student Learning Process in the Undergraduate Academic Programs (2011-2012 Academic Year)

Introduction

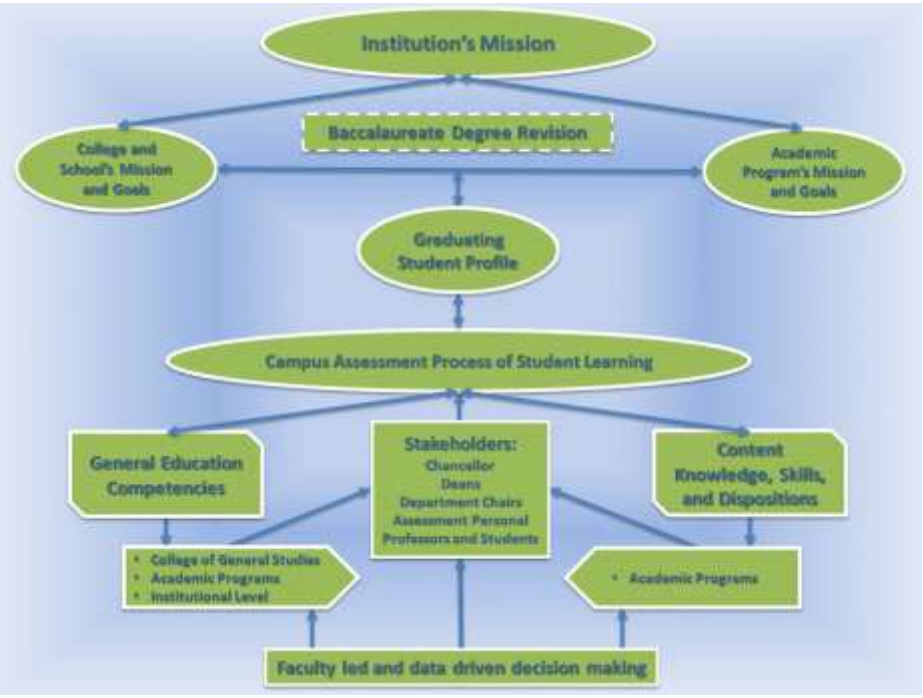
The Assessment of Student Learning at the University of Puerto Rico Río Piedras Campus (UPR-RP) is undergoing its third cycle in most of the undergraduate academic programs (2009-2010; 2010-2011; 2011-2012). For the purpose of this evaluation process, an assessment cycle was defined in accordance with the following stages: 1) selection of the competencies or learning outcomes to be assessed aligned with both the academic program and the UPR-RP Baccalaureate Student Graduating Profile, 2) identification of the educational activities in which the learning outcomes are going to be assessed, 3) adapting or developing assessment instruments to collect pertinent data, 4) selection of the different check points–in the same course or across courses–for gathering data, 5) analysis and interpretation of the data collected, and 6) proposal of transforming actions. In the next assessment cycle the implemented transforming actions will be evaluated and new learning outcomes will be added to those already assessed. The time frame established for each cycle is one academic year.

The Assessment of Student Learning in Campus continued as designed and planned during the 2011-2012 academic year, and followed the guidelines traced in the Evaluation of Student Learning Plan approved by the Academic Senate in April 2006 (Appendix I) as described in the Periodic Review Report, Progress Report, and Monitoring Report to the Middle States on June 2010 and June 2011, and April 2012, respectively (Appendixes II, III, and IV). The Office for the Evaluation of Students Learning (OEAE for its Spanish acronym) was created by the Deanship of Academic Affairs. Its mission is to coordinate and institutionalize student learning assessment efforts through the implementation of the Student Learning Evaluation Plan of the

University of Puerto Rico, Rio Piedras Campus. All information related to the assessment process in undergraduate academic programs, and workshops related to developing and supporting a Campus assessment culture, is available at http://www.oeaeuprrp.blogspot.com. The website includes assessment plans for each undergraduate academic program, competencies and learning objectives evaluated, assessment rubrics and educational activities, and the annual reports, among other documents (see Appendix V for the services rendered by the OEAE). Support to this Office establishes the Campus commitment to an organized, systematic and sustained process of assessment.

The process of assessment of student learning carried out in UPR-RP is faculty led, data driven, and course embedded. The learning outcomes of the Campus mission, as stated in the Alumni Student Profile (Appendix VI), are assessed for two general learning areas in all undergraduate academic programs: (1) General education competencies from the perspective of the discipline, and (2) Content knowledge, skills and dispositions that characterize each discipline. The following diagram presents a schematic representation of the UPR-RP Assessment of Student Learning Process. A detail description of the implementation of this process follows.

Diagram 1: Integrated process of assessment of student learning



General Education

Component

The general education competencies, such as: oral and written communication in Spanish and English, scientific reasoning, social responsibilities and information literacy are assessed in the College of General Studies. They are also assessed at the academic programs level from the perspective of the disciple since the 2008-2009 academic year.

Assessment of student learning of general education competencies at the level of General Studies College

Since 2009-2010, students' scientific reasoning skills and social responsibilities began to be assessed in laboratory reports of the Biological Sciences and Physical Sciences courses at this College. The development of the learning objectives to be assessed and the rubric to be used– and its validation–involved participation of all faculty members from these Departments. The assessment of this learning outcome began as pilot projects in some sections of these courses. Analysis of the findings from these pilot projects identified areas of students' need that required to be addressed. In a Departmental meeting, faculty members proposed different transforming actions to be implemented in the assessment efforts of the next academic year. They proposed giving the rubric to the student along with the laboratory assignment, that class meetings should include discussion of how to write and submit scientific findings in laboratory reports, including establishment of the hypothesis. These transforming actions were implemented and the analysis of assessment findings in the following years produced better learning outcomes. The Social Sciences Department of the College of General Studies also started assessment measurements during this period by means of case studies that involved issues of social concern such as environmental awareness, national heritage, gender problems, and ethics situations.

In January 2010, the Deanship of Academic Studies named Dra. Sonia Balet in charge of systemizing the assessment of General Education competencies at the level of General Studies College until June 2012 with the collaboration of the College's Assessment Coordinator, Dr. Vanessa Irrizary. This process included: (1) the assessment of written and oral communication skills, in Spanish and English courses, (2) scientific reasoning in the Physical and Biological

Sciences courses and (3) social responsibility in the Social Sciences courses. With the assistance of Dr. Sonia Balet and the OEAE personnel, during the first two months of the first semester of the 2011-2012 academic year, numerous meetings were held in order to train faculty members to write adequate learning objectives to be assessed, to select or design the rubric to be used, to provide information related to the rubric validation process, the need to set an expected outcome and the desirability to use a uniform rubric. This effort was geared to address the MSCHE remarks regarding a sustained assessment effort in general education competencies as pointed out in the respond to the UPR-RP's Periodic Review Report. A detail description of the on-going process in the College of General Studies is presented thoroughly in the Monitoring Report to the MSCHE (Appendix IV). The continued assessment processes of General Education Competencies in this College will be supervised by Dr. Vanessa Irrizary during the 2012-2013 academic year.

All undergraduate academic programs are required to assess general education competencies, as described in the Alumni Student Profile from the perspective of the discipline as well as the content knowledge, skills, and dispositions that characterize each academic program. The general education competencies of the General Education component of the Baccalaureate Degree are also assessed at the institutional level and by the College of General Studies as described above.

Assessment of Student Learning at the Institutional Level

Information literacy and logical-mathematical reasoning competencies are being assessed at the institutional level.

Assessment of Students' Information Literacy Skills

The assessment of information literacy competencies is coordinated by the Campus Library System Director, Dr. Snejanka Penkova, in collaboration with the person responsible for coordinating the assessment of the general education competencies of the College of General Studies, Dra. Sonia Balet, and with the OEAE. Some libraries outside of the campus library system such as the Library of the School of Architecture and the Library of the College of

Natural Sciences, are also participating in the assessment of these competencies. An operational definition for these competencies adapted from ACRL was made, and learning objectives were designed at the initial and developmental level (Appendix VII). A series of workshops, aimed toward training faculty in the assessment of these competencies—writing learning objectives to measure this competency and including them in the course syllabus, selecting an appropriate learning activity to measure this competency and designing a rubric—were offered during this year and sponsored by the Center for Academic Excellence and the OEAE.

These competencies have already been measured by the Library of the School of Architecture, College of Business Administration, the College of Natural Sciences and the College of Education in a team teaching process. Online modules designed to strengthen these competencies are provided to their students.

A systematic assessment of these competencies has been planned with the Library System in the College of General Studies, the School of Architecture, and the College of Natural Sciences in order to assess these competencies at the initial level, for freshmen students in first year course sections. This activity is supported by a Circular Letter 14 (2010-2011) from the Dean of Academic Affairs addressed to the academic community and coordinated by Dr. Sonia Balet with support from the OEAE (Appendix VIII). Workshops were offered during the first weeks of the 2011-2012 academic year, as training for the involved faculty. Significant efforts to advance assessment processes in the second semester by each of the six departments of the College of General Studies —Biological Sciences, Physical Sciences, Social Sciences, Humanities, Spanish, and English— were:

- Assessment matrixes with student learning objectives were developed and approved by the respective curriculum committees;
- A student learning general objective regarding information literacy skills was included in all course syllabi;
- Revised course syllabi were published at the College of General Studies' webpage;
- A first draft of rubrics for information literacy competencies skills was developed to assess relevant criteria;
- Educational activities were implemented in various sections of different courses;

- With the exception of the Social Science Department, all academic units carried out a pilot project during the first semester; analyzed the data gathered and revised the educational activities and rubrics as a result of transforming actions proposed.
- A second pilot project was carried out in the second semester, and data was gathered, analyzed and submitted for assessment purposes.

A complete description of the process, as well as results by criteria assessed, is presented in Appendix IX.

Assessment of Students' Logical-Mathematical Reasoning Skills

A committee composed of faculty members from the colleges of Natural Sciences, Education, Business Administration, General Studies, Social Sciences, a professor from the College of Education with ample experience in developing tests for the College Board, as well as personnel from the OEAE met on several occasions with the assignment of designing a test to measure students' logical-mathematical reasoning skills. All the faculty members participating in this committee have taught or are teaching these courses. The Campus General Logical-Mathematical Reasoning Test (CG-LMRT, hereafter) was administered in May 2011, after a pilot study in December 2010. A detail description of this process and the results obtained were detailed in the Progress Report to the MSCHE (**Appendix III**).

The committee members met at the beginning of the first academic semester of 2011-2012 to discuss the test results and identify the learning objectives where students' low performance was observed in these skills. Once identified, a meeting with the Chairperson of the Mathematics Department was scheduled to discuss test results and the need to strengthen the teaching of those learning objectives in their courses in order to advance students' logical-mathematical reasoning skills. Also, a presentation was given by the OEAE personnel to faculty members of the Mathematics Department and a thorough discussion of the findings–item by item–was provided. As a result from this discussion, some professors proposed transforming actions. It was agreed to implement a series of out of class tutoring sessions to students enrolled in MATE 3105, MATE 3001, MATE 3036, MATE 3041, and MATE 3042 courses in order to strengthen their logical

mathematical reasoning skills, which are currently underway. Also, during the second semester 2011-2012, additional measures geared to course modifications and tutor training were worked on to strengthen student learning in this learning outcome and assess the effectiveness of the tutoring program.

As described in the June 2011 Progress Report to the MSCHE (**Appendix III**), a similar test was designed to measure logical-mathematical reasoning skills and administered to students from the College of Business Administration who take the Pre-Calculus (Quantitative Methods – MECU 3031) course to comply with the requirements for this learning outcome. A comparable process was carried out to develop the College of Business Administration's Logical-Mathematical Reasoning Test (CBA-LMRT). Findings were discussed with the faculty members who teach this course and with the Department Chairperson. It was decided that a revised version of the CBA-LMRT should be administered as a Departmental final examination in all course sections to measure these competencies in a course embedded situation. Since the use of a calculator for class assignments and partial examinations in MECU 3031 was permitted, the revised version of the CBA-LMRT administered in December 12, 2011 allowed students to use it. Findings revealed that 72% of the students (out of a total of 145) obtained at least 15 correct answers (70% or more), thus achieving the expected outcome proposed by the Quantitative Methods faculty. A detailed analysis revealed that the expected outcome was met in 15 out of 22 competencies assessed.

The CBA-LMRT was administered again in May 2012 in order to compare results under similar administration conditions regarding the first semester. Findings revealed that 51% of the students (74 out of a total of 145) achieved a performance level of 15 correct answers or more (70% or more). A detailed analysis revealed that the expected outcome was met in 10 out of 22 competencies assessed. Results were lower than expected, but the faculty considers it a typical outcome since students that enroll in the second semester are usually repeating the course.

Results from both administrations of CBA-LMRT were discussed with faculty members who teach these courses. The discussion resulted in a major revision of all three Quantitate Methods

Courses (MECU 3001, MECU 3031, and MECU 3032), which is currently underway. Some of the transforming actions proposed were:

- Exchange application type exercises among professors from different departments.
- Offer a Summer Immersion program in the Quantitative Methods Courses during the 2012 Summer Session geared to recently admitted Business Administration freshmen students who obtained low scores in the Mathematics Achievement section of the College Board College Entrance Examination.
- Revise the course content in the Quantitative Methods courses: MECU 3001 (General Mathematics), MECU 3031 (Pre-Calculus), and MECU 3032 (Calculus).
- Create a website geared to the students enrolled in Quantitative Methods Courses to reinforce topics discussed in the classroom.
- Strengthen the Quantitative Methods Courses tutoring program.

Results from both administrations of CBA-LMRT along with assessment results from other learning outcomes from students of the College of Business Administration will be presented in the Self Evaluation Report to the Association of Advance Collegiate Schools of Business (AACSB) due in October, 2012. This College is currently completing a five year program accreditation, which will conclude in March, 2013 with an AACSB Team Visit and an Accreditation Decision Report.

A different approach was used to measure these skills in the mathematics course that students from the College of Natural Science take to comply with the general education component (MATE 3151 – Calculus). Learning objectives of this learning outcome were aligned with both the course objectives and the Graduating Student Profile regarding logical mathematical reasoning skills. These competencies were measured through specially designed test items in four partial departmental examinations of the Calculus course. In partial exams one through three, two test items were assessed: a theoretical type question and an applied problem situation, while in the fourth partial exam two applied-type problems were assessed. It was expected that at least 66% of the students assessed achieved a score of five or more points in the Sky-Math Scoring Rubric for open-ended items on a scale of 0 to 8 points. Findings revealed that the goal was met in the second problem of the fourth partial exam. Assessment findings were discussed

with faculty members in a departmental meeting where transforming actions were proposed to promote a better achievement in student performance in this course. They will be implemented in the next year assessment of student learning cycle.

Assessment of Students' Effective Written Communication Skills in Spanish

As stated in the Periodic Review Report, one of the four learning outcomes to be assessed in all academic undergraduate programs was effective communication skills, as established in the UPR-RP's Evaluation of Student Learning Plan. As a first instance, it was decided that information regarding this learning outcome was to be gathered at the institutional level through an essay-type test administered to a cohort of freshman students. With the assistance of the College Board, the OEAE personnel administered the test in August 2008 to the incoming class. As a follow up to the assessment of this learning outcome at the institutional level, a similar activity was planned to be carried out some years after.

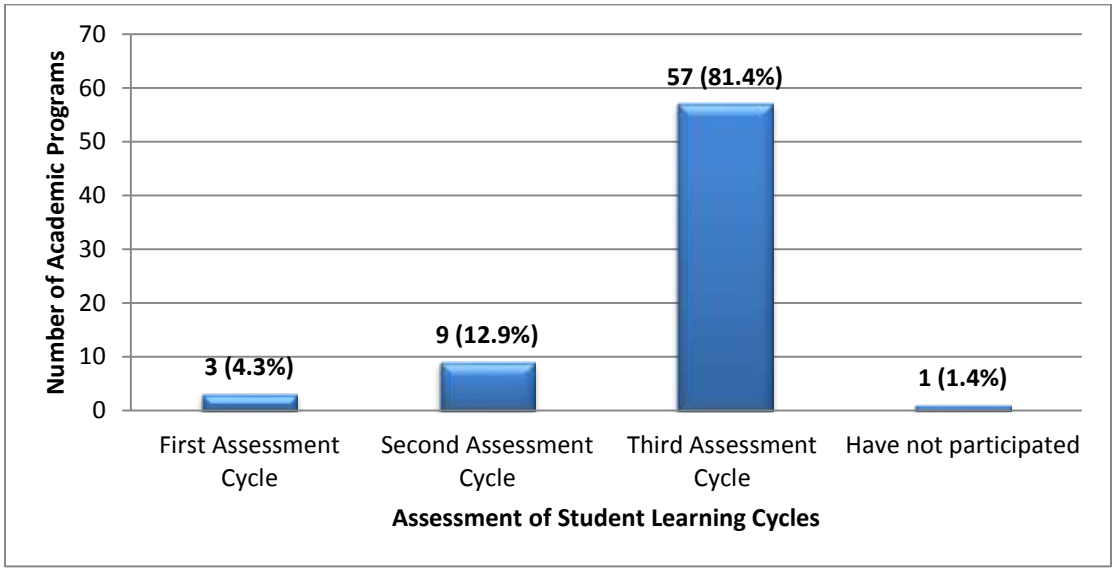
During the 2011-2012 academic year, the OEAE personnel planned the second instance of an institutional assessment of student learning regarding effective written communication in Spanish. It was decided that in this occasion the Institution will be in charge of all aspects of this effort. Toward this end, a committee of experts was appointed to be in charge of the following: 1) deciding the statement on which students will develop a short essay, 2) adapting a rubric to be used as an assessment instrument, 3) revising all relevant information to be given to the student, and 4) grade all essays in two rounds of independent evaluations.

It was decided that the test should be administered in August 16 2012, during the day in which the Institution schedules the course registration analysis of the upcoming academic semester. A communication was sent to the incoming class to invite them to participate in this activity (Appendix X). It is planned that results will be sent to students via their institutional email and that findings will be discussed with pertinent academic units and faculty. Results of this effort will be submitted in the next OEAE's Annual Report.

Assessment of Student Learning at the Undergraduate Academic Programs

Assessment of Student Learning at the undergraduate academic programs has been engaged in a systematic and ongoing process since the learning and formative assessment experience was implemented in the 2008-2009 academic year. During the 2008-2009 academic year the focus of the process centered on providing to the academic community a series of workshops related to the implementation of the Assessment of Student Learning Plan in the Undergraduate Academic Programs, as well as much needed individual assistance. Therefore, as reported on the 2010 Periodic Review Report to the Middle States Commission of Higher Education, the first formal assessment of student learning cycle was carried out a year later, in the 2009-2010 academic year. As of June 2012, 81.4% of the undergraduate academic programs--70 in total--are undergoing their third assessment cycle and 13% of them are in their second cycle as shown in Graph 1. The number of academic programs that have participated in an assessment of student learning cycle from 2008-2012 is presented in the next page, in Graph 2.

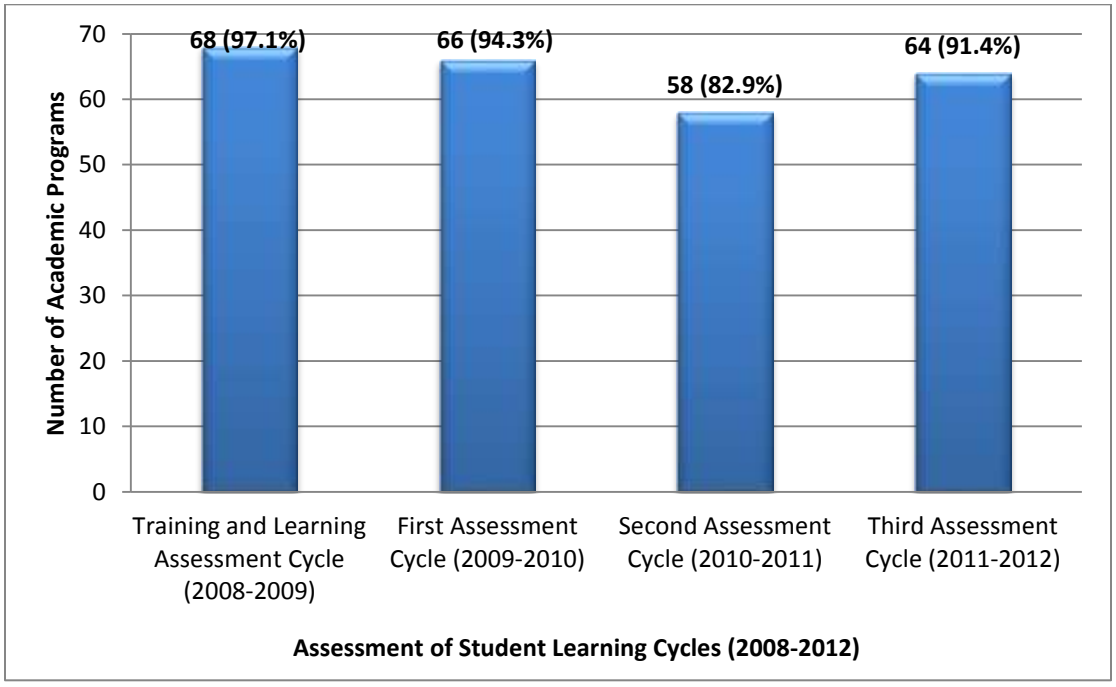
Graph 1: Undergraduate Academic Program Assessment Cycles (2009-2012)



All undergraduate academic programs participating in this third assessment cycle (2011-2012) appointed Assessment Coordinators to be in charge of developing and coordinating the assessment efforts of their academic programs. Some were given release time or compensation equivalent to three credits hours for this effort, while others that coordinated the previous

assessment cycle continued working ad-honorem in this endeavor. In some Colleges or Schools, one coordinator is in charge of the assessment activities of more than one academic program. Also, other schools appointed Assessment Coordinators at the College level to overview the assessment process at their academic programs. For a complete list of Assessment Coordinators see Appendix XI. The College of General Studies appointed a General Education Coordinator to supervise the assessment activities of the general education component at this College. These measures also show a strong commitment from the Institution to the assessment of student learning.

Graph 2: Number of academic programs that have participated in an assessment of student learning cycle from 2008-2012



Strengthening the Campus Assessment of Student Learning Process

In order to continue developing and enforcing a culture of assessment in the Río Piedras Campus, throughout this academic year, 2011-2012, personnel from the OEAE programmed a series of meetings with assessment coordinators, department chairpersons and professors from

different colleges to discuss the process of assessment of student learning carried out in campus. Emphasis was given to:

- The importance and quality of the documents to be submitted (Assessment of Student Learning Plan, Annual Report, Curricular Matrix, and Five-Year Plan).
- A continuous revision of the Five-Year Plan and Curricular Matrix in light of previous assessment results.
- The importance of the implementation of the transforming actions that resulted from last year assessment process in each academic program to ensure improvement of student learning.
- The need to assess the impact of the transforming action implemented regarding student learning, and to close the assessment cycle when these assessment transforming actions are assessed.
- Promote an increase in the participation from all stakeholders involved in the teaching and learning process in the different academic programs in order to strengthen their commitment with the processes of assessment of student learning.
- The need to use multiple measures to assess one learning outcome in order to triangulate assessment results.
- The need to measure one learning outcome in more than one instance to corroborate assessment findings.
- The importance of assessing student learning by criteria and presenting its corresponding results in terms of the expected outcome.
- Encourage academic programs to include the following learning outcomes as part of their assessment plans for this academic year (2011-2012): effective communication, research and creation, critical thinking and information literacy as well as content knowledge, skills or dispositions that characterizes each academic program.
- Incorporate learning objectives for each learning outcome assessed in the course syllabi.
- Assist Assessment Coordinators, professors and teacher assistants in developing adequate assessment instruments.

Last year's Annual Assessment Reports were thoroughly discussed with each one of the programs' Assessment Coordinators in order to improve the assessment of student learning

process in their academic programs for future assessment cycles. Also, this effort will reinforce the campus culture of assessment of student learning. Individual training was also given by the Office of Evaluation of Student Learning personnel to the professors responsible for the coordination of the assessment process in their academic programs. Continued guidance was provided in the design of assessment instruments and in the recommendation of possible educational activities that could be used to measure student learning. Personnel from OEAE also provided assistance in analyzing and evaluating assessment of student learning results, and in assuring that transforming actions were planned, when needed, and which will be implemented during the next assessment cycle. Furthermore, the following assessment workshops or activities were offered (those coordinated through the Center for Academic Excellence –CEA, its Spanish Acronym– are marked with an asterisk):

- Assessment of General Education Competencies at the Undergraduate Level Symposium (Sponsored by the Campus Dean of Academic Affairs).
  Offered in September 9, 2011, by Dr. Virginia Anderson, Towson University

- How to write (and assess) effective learning objectives*
  Offered in September 21, 2011, by Prof. Julio Rodriguez and Prof. Nadia Cordero

- Presentation to Academic Associate Deans and Assistant Deans of Student Affair
  Offered in October 14, 2011, by Prof. Nadia Cordero

- How to develop rubrics to assess critical thinking*
  Offered in October 21, 2011, by Prof. Julio Rodriguez and Prof. Nadia Cordero

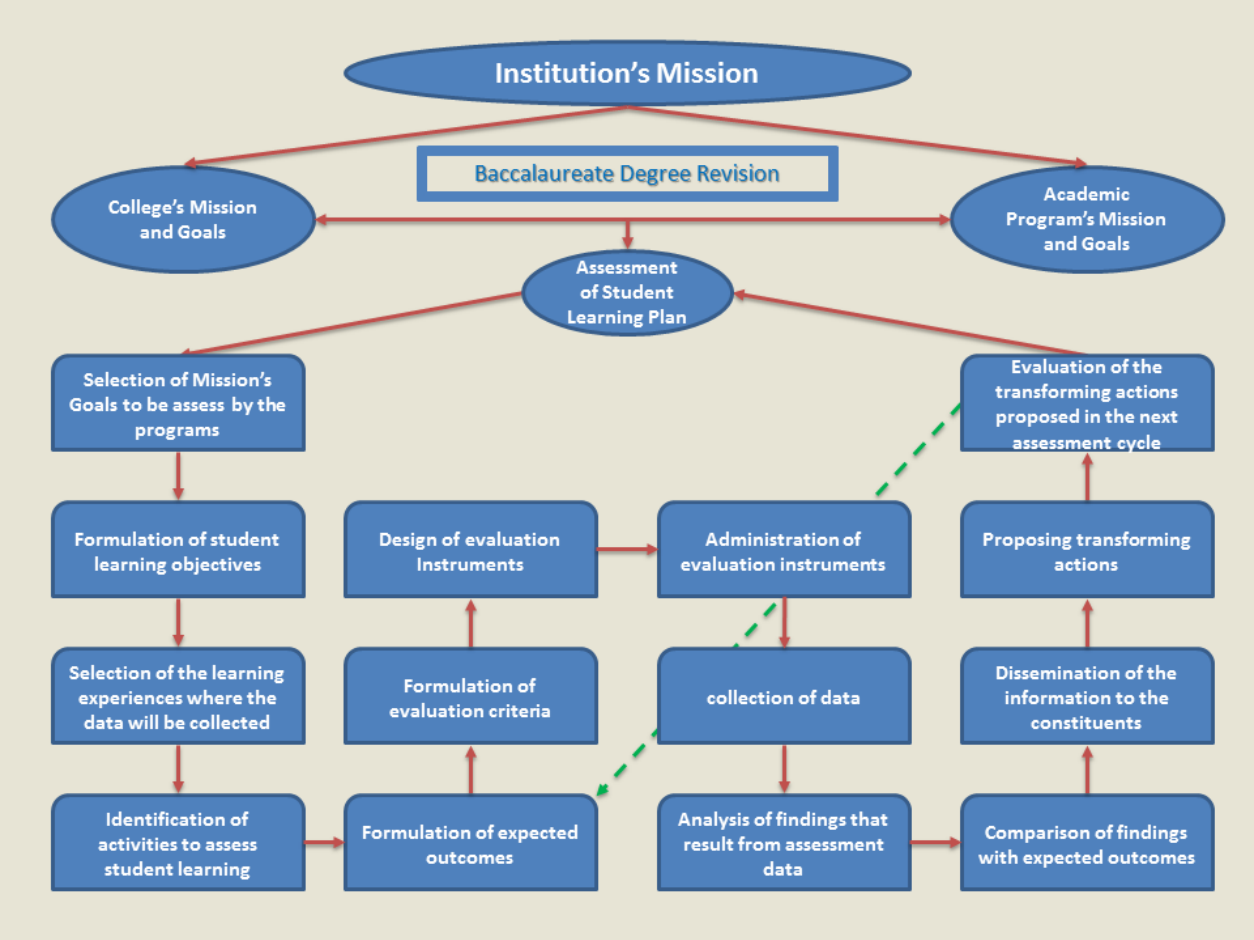
- Professors' learning centered syllabus vs. Official course syllabus: Different perspectives*
  Offered in March 9, 2012, by Prof. Nadia Cordero (virtual presentation)

- Successful Assessment of Student Learning Experiences in the UPR-RP*
  Offered in April 27, 2012, by Dr. Ángel I. Rivera, Prof. María E. Mercado, Dr. Elizabeth Dvorsky, and Dr. María del Pilar Angulo – Assessment Coordinators

The Assessment Plan and the Annual Report consist of two parts: assessment of the general education learning outcomes stated in the Alumni Student Profile and the assessment of content

knowledge, skills and dispositions that characterize each program. A brief narrative describing the analysis of the assessment results and the proposed transforming actions should also be submitted with the Annual Report. Diagram 2, describes the integrated process plan of the Evaluation of Student Learning at the UPR-RP.

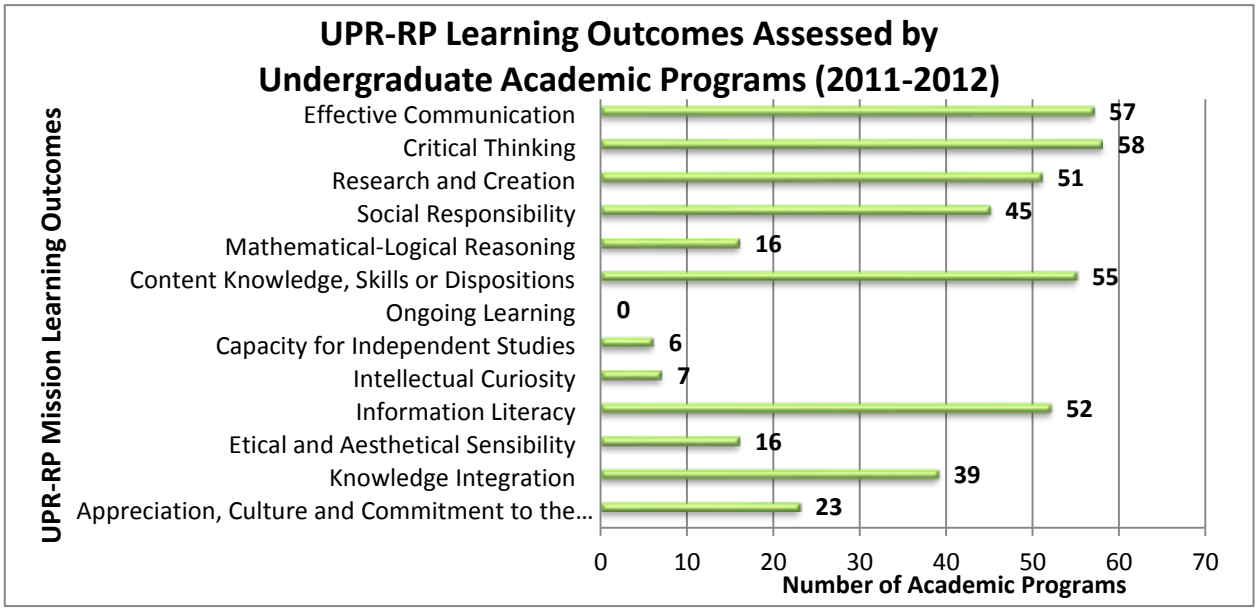
Diagram 2: Integrated process plan of Evaluation of Student Learning



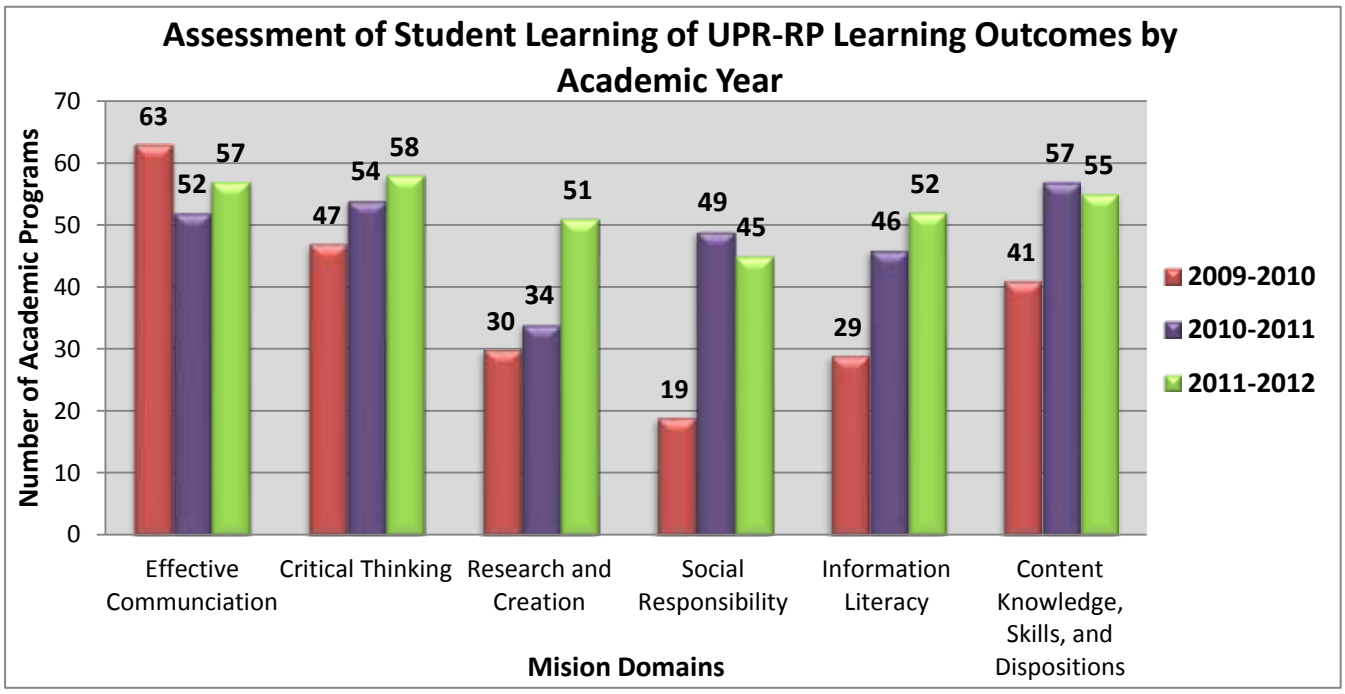
Samples of Assessment of Student Learning Plans, Annual Reports, and Rubrics developed by UPR-RP's professors and OEAE personnel are available in the OEAE official blog site (http://oeaeuprrp.blogspot.com) that has been created to assist faculty in this endeavor and, at the same time, to disseminate the ongoing assessment process to the different stakeholders.

Due to the ample academic offerings available for the students, and the diversity of the learning processes, one can observe different approaches of assessment of student learning. As expressed before, 64 (91.4%) of the 70 undergraduate academic programs participated in the third assessment cycle. Graph 3 presents the learning outcomes that were assessed during the academic year (2011-2012) and the number of academic programs that assess each one of them.

Graph 3: UPR-RP Learning Outcomes Assessed by Undergraduate Academic Programs (2011-12)



Graph 4: Assessment of Student Learning of UPR-RP Learning Outcomes by Academic Year



As shown in Graph 4, in the previous page, the number of learning outcomes assessed by undergraduate academic programs is similar to previous year's assessment cycle. An increase in the number of programs that measure students' research and creation skills can be observed. This growth from previous assessment cycles is the result of the OEAE personnel continuous guidance to strengthen this learning outcome in our undergraduate academic programs, since our institution is classified as a high research activity university by the Carnegie Foundation for the Advancement of Teaching.

Discussion of Assessment Results – Assessment Findings and Transforming Actions: Third Cycle

In this section, findings and transforming actions from the assessment activities of the learning outcomes that most academic programs assessed this academic year are presented. Those learning outcomes were: effective communication, critical thinking, research and creativity, social responsibility, information literacy, and content knowledge, skills or dispositions (discipline specific learning outcomes). This OEAE Annual report primarily discusses those learning outcomes that were assessed by most academic programs. A complete detailed description of assessment findings and transforming actions of all learning outcomes assessed this year by undergraduate academic programs can be found in Appendix XII – Table of Assessment Findings and Transforming Actions by Colleges and Academic Programs in the Academic Year 2011-2012.

Effective Communication Learning Outcome

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

Of the 64 academic programs that engaged in the assessment of student learning process, 57 (89.1%) assessed effective communication skills. Of those programs, 42 (73.7%) reported

positive learning outcomes results[1] in this competency according to expected results established by the programs. Fifty-five programs (85.9%) proposed transforming actions as a result of the assessment process.

Fifty-two programs (81.3%) used at least two different activities to collect data, and an equal number of academic programs reported having assessed this learning outcome in at least two instances. 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: laboratory reports, design projects, research article reviews, critiques, research papers and projects, essays and oral presentations, persuasive arguments, and supervised practicum, etc.

As an example of a program that assessed this learning outcome, the Biology program used a rubric in the BIOL 3350 course (Genetics) in order to assess if students (N=90) were able to effectively communicate their ideas and findings in Spanish in laboratory reports. It was expected that at the end of the baccalaureate experience, 10% of the students assessed would have achieved the 'excellent' level, 80% the 'good', and 10% the 'regular'. Findings showed that 66% of the students assessed performed at 'excellent' level, 28% at the good' level, 3% at the 'regular' level, and 3% 'did not comply'. Although the expected outcome was achieved, the program faculty considers appropriate the possibility of creating a laboratory activity with both students enrolled in this course and the laboratory teaching assistants to discuss what is expected of the former when writing a laboratory report and how their performance will be assessed by the latter.

Another example can be observed in the Comparative Literature program. The professor that taught the LITE 3045 course used a rubric to assess students' oral communication skills in an oral presentation of a critical essay. It was expected that 75% or more of the students assessed will score 4 points or higher in a 6 points scale rubric in all criteria assessed. Findings revealed

[1] A positive result implies that the learning outcome was achieved in at least 70% of the instances measured. An instance was considered to be met if at least 70% of its corresponding criteria were achieved.

that only one student performed below the expected outcome. Although the expected outcome was achieved, the program is working to incorporate the use of technology in all classes. Along with improving student informational literacy as well as effective oral communication skills (a transforming activity proposed in last year's assessment report), the program is working on integrating audio and visual elements into their classrooms, and in the future, the program will assess student use of technological aids in their oral presentations. Also, the program is considering assessing student learning regarding this learning outcome in at least two instances during the semester, one at the mid-term and the other at the end of the semester to be able to assess how the students have improved during the course.

As the result of the 2011-2012 assessment of student learning process regarding the effective communication skills outcome, the following sample of transforming actions by academic programs will be implemented in the next assessment cycle (2012-2013):

- *Business Administration Core Programs:* oral communication workshops will be offered to MERC 3115 students.
- *Hispanic Studies:* Additional assessments measures will be carried out to gather more information about the attainment of the effective communication learning outcome.
- *Nutrition and Dietetics:* Revise the instrument used and develop strategies to improve English written communication in courses or supplemental workshops with the English Program.
- *Sociology* - In all the Sociology courses exercises will be offered in which students will prepare oral and written reports, in order to develop a written and oral culture in answering questions and using Spanish clearly, coherently and in an organized manner.
- *Information and Journalism:* Advice students during their course registration process that they should have approved the COPU 4016 course before enrolling in COPU 4148 course in order to have the necessary knowledge to satisfactorily approve this last course.

See Appendix XII for other examples of assessment results and transforming actions from these and others programs that assessed this learning outcome.

Critical Thinking Learning Outcome

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

A similar number (58, 90.6%) of programs that assessed students' effective communication skills also assessed a critical thinking related outcome. Of those programs, 39 (67.2%) reported positive learning outcomes results in this competency according to expected results established by the programs. Fifty-four programs (93.1%) proposed transforming actions as a result of the assessment process.

Thirty-seven programs (63.8%) used at least two different activities to collect data, and 51 (87.9%) reported having assessed this learning outcome in at least two instances. Most programs used direct measures and course-level activities to collect data regarding this learning outcome. Evidence of student ability to think critically was assessed through the following activities: laboratory reports, design projects, research article reviews, critiques, research papers and projects, essays and supervised practicum, among others.

Two examples of programs that assessed this learning outcome are the Philosophy and Sociology programs. The Philosophy program presents an important aspect of assessing student learning: using different instances within one semester –and particularly within one course– to assess a learning outcome, monitor progress, and corroborate its findings. In the FILO 4025 course a rubric was used to assess conceptual knowledge and critical reflections concerning philosophical doctrines in a written test. The assessment was carried out in two different instances: September 2011 and December 2011. In both instances, it was expected that students would achieve a performance level of 70% (7 points or higher) as stated in the rubric. In the first instance, findings revealed that 73% of students assessed achieved a score of 70% or higher, a percentage that is slightly above the expected outcome. However, when the information was gathered in the second instance, findings revealed that only 63% of students assessed achieved a score of 70% or higher. If the Philosophy program had only assessed one instance, its conclusion would have been based on its findings, whether positive or negative. But, having assessed two instances with

two different findings provides an inconclusive case regarding this learning outcome, and therefore the programs needs to gather additional information and implement transforming actions that would increase student achievement. To this end, the program has proposed that it will offer more exercises to explain philosophical texts more thoroughly, and, consequently, provide additional educational activities where students can strengthen their abilities.

Another example that places forward an emphasis on multiple instances, but also incorporates the notion that multiple measures are needed to ensure the validity of assessment of student learning findings, can be observed in the Sociology program. Its reports states that the same kind of rubric was used in three courses [SOCI 3245 (Principles of Sociology), SOCI 3267 (Sociological Research Techniques), and SOCI 4187 (Research Seminar)] to assess students critical thinking skills in two activities: 1) to find out if students have a firm grasp on reading, synthesizing and analyzing literature on basic sociology, and 2) by means of a critical reflection-type essay, to evaluate social problems and phenomena and explain them considering sociological studies. It was expected that students would achieve an average score of 70% in the five-points rubrics used, where 1-2 is emerging, 3-4 is intermediate and 5 is advanced. Results showed that the average score obtained was 4.2 (84%), thus achieving its goal as an aggregated result. Notwithstanding the positive results obtained, the program established the following transforming action: "In all Sociology courses open discussion and critique of the diverse theories and methodologies of the discipline and the debate on the formulation and the sociological knowledge will be encouraged. Furthermore, exercises will be designed where the students will prepare monographs, presentations and essays in which they can implement critical thinking skills". This action represents an important fact about the assessment process: transforming actions can be established to make certain that positive results can continue to be observed.

As per the result of the 2011-2012 assessment of student learning process regarding the critical thinking outcome, the following sample of transforming actions by academic programs will be implemented in the next assessment cycle (2012-2013):

- *Office System Management:* Revise and analyze where this competency is learned, developed, and applied. Verify the status of the process and develop new teaching/learning strategies that allow the student to acquire this competency.
- *Art History:* Emphasis will be given to critical thinking skills such as problem identification, interpretation and conclusion inferences, discussions of the problems stated when students need to write a critical-type essay. Also, discussions implications and possible solutions to the problem stated as an assessment criterion in all examinations and projects will be assigned in all courses of this Program. The rubrics will be provided to the students before assigning any project or activity.
- *Chemistry:* New ways of motivating students to study for exams while the material is being discussed in the classroom are needed to improve student performance in higher order cognitive exam questions.
- *Labor Relations:* Continue strengthening these skills through homework assignments and formative evaluations.

See Appendix XII for other examples of assessment results and transforming actions from these and others programs that assessed this learning outcome.

Research and Creation Learning Outcome

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.

Of the 64 academic programs that engaged in the assessment of student learning process, 51 (79.7%) assessed students' research and creation skills. Of those programs, 39 (76.5%) reported positive learning outcome results in this competency according to expected results established by the programs. Twenty-four programs (47.1%) proposed transforming actions as a result of the assessment process.

Thirty-six programs (70.6%) used at least two different activities to collect data, and 47 (92.2%) reported having assessed this learning outcome in at least two instances. Most programs used direct measures to collect data on this learning outcome. Currently, reported assessment methods for this competency are embedded in the discipline courses throughout the curriculum. Evidence of student ability to demonstrate research and creation skills was assessed through the following activities: laboratory reports, design projects, research article reviews, critiques, research papers and projects, essays, oral presentations, undergraduate thesis, surveys, and supervised practicum, among others.

As a research oriented institution, students' research skills are of paramount importance to all undergraduate programs. Most programs that assessed students' critical thinking skills, also gathered information about a research and creation related outcome. The Interdisciplinary Program in Natural Sciences (IPNS) and Art History are two undergraduate programs that assessed students' research skills, but with two different approaches. The IPNS program gathered information in seven instances, three in the first semester and four in the second, and used different types of educational activities such as laboratory reports, research proposals, poster sessions, and research reports. It is interesting to note that its assessment process uses information from other Natural Science departments, such as the Physics courses FISI 3013 and 3014, since due to the nature of its curriculum, students can enrolled in Natural Science College Core courses (i.e., Biology, Chemistry, Physics, Mathematics), and other courses that are geared to their interests, including those available in other colleges around Campus. However, its capstone course is a common experience for these students, and it's precisely where the IPSN faculty professors gathered its last instance of assessment of student learning information regarding program and institutional outcomes.

For example, a rubric was used in the CNEI 4012 course (Capstone 2) to assess the capstone course research reports. Two expected outcomes were established: 1) 70% or more of the students will obtain a score of 80 points or more on a scale of 0 to 100 points in the draft of the final report and in the final report, and 2) 70% of the students will maintain or improve their score in the final report. Results showed that in the final report draft, 94.4% of the students obtained 80 points or more (89.6 ±7.4), and that 97.4% of the students improved their score in

the final report. Regardless of the positive results obtained, the program noticed that the students didn't have enough skills in statistical analysis, and in the way they cited their bibliographical references in their assignments and reports. Toward this end, the program faculty will offer a Statistics and Citing Bibliographical References Workshop for the Capstone 1 students, hoping that this experience will improve their performance in the Capstone 2 course. In order to improve students' research skills, the program will also develop an Introduction to Research course, that will be geared to second year students, and will include subjects like scientific writing, information research, statistics, scientific research ethics, and the design of presentations and posters. The programs expect that this experience will provide students with the necessary tools in order to improve their research skills by the time they enroll in the Capstone course.

Another program that assessed the research and creation learning outcome was the Art History program. During the assessment of student learning process it gathered information regarding this learning outcome in nine instances, two within the ARTE 4142 (History of Art Seminar I), and four within the ARTE 4242 (History of Art Seminar II). In the latter course, a rubric was used to assess student research skills in the first and second draft of their undergraduate thesis as well as in their final version. It was expected that 70% of the students assess performed at the levels of "excellent" or "good" in the rubric used. Although the expected outcome was not achieved in the first instance (only 67% complied with the expected outcome), by the second and third time it was assessed, 90% of students achieved the expected outcome. The program reports that the rubric used was shared with students previous to the assignment of the first draft of the undergraduate thesis. After assessment results were gathered in the first instance, it was shared with students in order to pinpoint areas that needed to be strengthened. Also, the rubrics were uploaded to the course website and writing was highlighted as a criterion to be assessed in all the examinations and assigned projects. After discussing the results of the research project, the group of students carried out a group exercise to clarify concepts and answer relevant questions.

As the result of the 2011-2012 assessment of student learning process regarding the research and creation skills outcome, the following sample of transforming actions by academic programs will be implemented in the next assessment cycle (2012-2013):

- *Performing Arts:* Maintain the rigorous standards that allow for a high quality product, quantifiable through surveys and visual documentation while the students' exchange of the theatrical product from this academic program is promoted locally, nationally, and internationally.
- *Environmental Science:* Highlight research opportunities and experiences in the new student Orientation Day and during student academic counseling. Develop a new interactive webpage with research and internship opportunities. Increase the number of special seminars on research opportunities and research experiences currently available to students.
- *Anthropology:* In all Anthropology courses the research component will be strengthened in order for students to be prepared in the research techniques of an ethnography and archeological scope, and provide the theoretical tools that will help them in the comprehension of human research process.
- *Comparative Literature:* There is a need to develop more thoroughly the students' ability to formulate hypotheses, specify premises, develop conclusions, etc., throughout the students' trajectory in our department's courses. Because this course was the capstone course of the major, in which students are expected to write their undergraduate thesis, it is important that the students be able to demonstrate their critical thinking and research abilities through this final paper/thesis. Also, the programs must provide professional development activities for faculty members and monitor all professors who teach these courses to ensure that they are including information literacy as an essential skill to be developed in research activities in our classes.

See Appendix XII for other examples of assessment results and transforming actions from these and others programs that assessed this learning outcome.

Social Responsibility Learning Outcome

Definition*:* The ability 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.

The forty-five programs (70.3%) that participated in the assessment of student learning process during the 2011-2012 academic year assessed a social responsibility related outcome. Of those programs, 31 (68.9%) reported positive learning outcome results in this competency according to expected results established by the programs. Forty-three (95.6%) proposed transforming actions as a result of the assessment process.

Thirty-seven programs (82.2%) used at least two different activities to collect data, and 41 (91.1%) reported having assessed this learning outcome in at least two instances. Academic programs used direct and indirect measures to collect data on this learning outcome. Currently reported assessment methods for competency in social responsibility skills are embedded in the discipline courses throughout the curriculum. Evidence of student ability to demonstrate social responsibility in the community and towards their peers in their immediate working community and in applying moral and ethical principles, was assessed through the following activities: case studies, field experiences, discussion of environmental nature situations, critiques, community and social related group discussions, focal groups, open ended test items concerning situations regarding reflection of tolerance, values, respect, and appreciation of cultural diversity that affect collective social welfare, assignments, and practicum, among others.

As an example of an academic program that assessed this learning outcome, a rubric was used in the Teaching Methodology course from the Teachers Preparation Program to assess students' social and community responsibility skills in their field experiences. It was expected that the students would obtain 3 points or higher in the 4 point rubric used. Findings revealed that 90% of the teacher candidates obtained a performance level of 4 points (excellent) in the rating scale. The rubric used during this assessment process is a revised version that is the result of the implementation of a last year's proposed transforming action to measure student performance in this learning outcome. The revision is a result of previous assessments gathered by the Office of Evaluation of the College of Education and findings in the pedagogical situation of the Teacher Certification Test (PCMAS), which combined suggested a more in depth development and assessment of the future teachers' disposition towards the teaching profession.

The Biology program used a rubric in the BIOL 3349 course (Genetics) in order to assess if students can identify and contribute solutions to problems in the area of sustainable development, health, biotechnology, and information technology applied to everyday life. The final product was the production of a video to be published in *YouTube*. It was expected that the students enrolled in this course identify a topic applied to everyday life and communicate their findings by means of a video. Findings revealed that 100% of the students in the course identified a genetics topic applied to the above mentioned situations and communicated it through a video. These videos can be access at http://www.youtube.com/user /BIOL4980MCB. As a transforming action, the Biology Program is planning to offer an orientation for professors on the activities that promote social responsibility in their courses and promote that this learning outcome be assessed in other courses of this program.

Another example can be observed in the Audiovisual Communication Program. The professor that taught the COMA 4315 course used a rubric to assess if students ponder ethical responsibility skills in the process of writing scripts for media and communication. It was expected that the average score will be 80% or more in all criteria assessed in the rubric used. Results showed an average performance score of 86%, which means that the expected outcome was met. The Audiovisual Communication Program established the following three transforming actions: 1) the thematic content of the course will continue to emphasize the responsibility of the scriptwriter towards his public, in both ethical and social concepts, 2) the themes to be developed in the script have to cover affairs directly and indirectly linked to the social problems of the country, and 3) the treatment of themes and the development of characters must pay attention towards diversity and their potential public, as well as contribute to the understanding of the social transformations that are progressing.

As the result of the 2011-2012 assessment of student learning process regarding the social responsibility outcome, the following sample of transforming actions by academic programs will be implemented in the next assessment cycle (2012-2013):

- *Political Science:* Increase the number of courses that discuss and assign the subject of gender equality to students. Assign students to research in newspapers, Internet and other

reliable sources in order to gain more knowledge of gender equality in government, public policies, and laws.

- *Computer Science:* A new instrument will be designed and this learning outcome will be measured again in Fall 2012.
- *Sociology:* In all Sociology courses critical thinking skills that will promote social, cultural, environmental, and civic responsibility will be encouraged. Also, media communication practices, artifacts, and expressions that are part of the complex processes of human formation and their identities of ethnicity, race, class, gender and sexuality, among others, will be emphasized. Moreover, a program of activities that go beyond the university in order to spread sociological knowledge to the outside Campus community will be developed.
- *Performing Arts:* Continue strengthening civic engagement as part of the commitment that the Performing Arts Department has with Puerto Rican society.

See Appendix XII for other examples of assessment results and transforming actions from these and others programs that assessed this learning outcome.

Information Literacy Learning Outcome

Definition*:* A set of abilities requiring individuals to recognize when information is needed and be able to locate, evaluate, and effectively use the needed information (adopted from the Association of Colleges Research Libraries - ACRL).

A comparable number (52, 81.2%) of academic programs that assessed students' research and creation also assessed an information literacy related outcome. The OEAE personnel recommended that both learning outcomes be assessed within one assignment, since the relation between research and creation, and information literacy skills is evident. Of the programs that assessed students' information literacy skills, 36 (69.2%) reported positive learning outcome results in this competency according to expected results established by the programs. Forty-five programs (86.5%) proposed transforming actions a result of the assessment process

Twenty-nine programs (55.8%) used at least two different activities to collect data, and 42 (80.8%) reported having assessed this learning outcome in at least two instances. All programs used direct measures to collect data on this learning outcome. Currently, reported assessment methods for the information literacy competency are embedded in the discipline courses throughout the curriculum. Evidence of students' information literacy skills was assessed through the following activities: Project for the Integration of Information Literacy to the Curriculum (PICIC project in the College of Education, for its Spanish acronym), portfolio, undergraduate thesis, essays, research projects, research papers, research proposals, monographs, tests, film discussions, news articles, radio reports, group projects, research posters, course exercises, annotated bibliography, online modules, and oral presentations, among others.

Among the undergraduate programs that assessed students' information literacy skills are the History and the Nutrition and Dietetics programs. These programs have placed an emphasis on developing students' information literacy skills as early in their curriculum as possible in order to prepare them adequately for advance courses with a strong research component. In the History program, a rubric was used to evaluate an annotated bibliography in order to assess students' information literacy skills in terms of the quality of sources they were able to use for a historical research-type paper, and if they were able to evaluate them regarding the new focuses of historical methodology. It was expected that 70% of the students would achieve a performance level of at least 3 points in a four points scale rubric. Findings revealed that 75% of students met the expected outcome, 50% of which exceeded expectations. Although the results are positive, the program considers that it must improve, because this learning outcome is one of the basic skills of the discipline. They reported that students received various orientations in the Campus General Library and the College of Humanities' Center for Historical Research on the bibliographical resources at their disposal, as well as the use of Internet databases for historical-type research papers. Since it is the first time that this skill was assessed systematically, the program considers that additional information regarding this outcome must be gathered in the next assessment cycles to develop and strengthen students' information literacy skills. The program considers that the professors of other courses need to assign additional exercises to assess this skill, like an additional annotated bibliography assignments, use of databases, and short research projects, among others.

The Nutrition and Dietetics program assessed students' information literacy skills for the second time on the 2011-2012 assessment of student learning cycle. A rubric was used in NUTR 4198 course to assess students' information literacy skills. Students were required to develop a research proposal by the end of the semester in which they needed to be able to use current information technologies to locate and apply evidence-based guidelines and protocols in order to use adequately relevant, valid and authoritative references. It was expected that students' average scores will be 75% or more, when assessing this activity as a whole. Findings revealed that students average performance score was 90%. Since two consecutive assessment of student learning cycles have resulted in positive outcomes, the program decided that it would continue to implement this type of activity to ensure that students have the necessary mastery of information literacy skills by the end of their baccalaureate degree.

As the result of the 2011-2012 assessment of student learning process regarding the information literacy skills outcome, the following sample of transforming actions by academic programs will be implemented in the next assessment cycle (2012-2013):

- *Teacher Preparation Programs:* Add additional courses to the Project to integrate information literacy skills to the curriculum (PICIC, its Spanish acronym) such as EDFU 4007 course (Introduction to Educational Research). Also, promote the inclusion of evidence on the development of information literacy in the Electronic Portfolio developed throughout the baccalaureate experience.
- *Comparative Literature:* The program needs to develop and implement a departmental policy of requiring effective use of technology and the relevant databases as part of its courses. This is especially true in the core courses, such as LITE 3045, Introduction to Comparative Literature; the monographic courses at the 4000 level; and most especially in its capstone course at the 4000 level, in which students are expected to write their undergraduate thesis. Also, the program needs to offer professional development activities to all professors who teach these courses to ensure that they are including information literacy as an essential skill to be developed in research activities in their classes
- *Anthropology:* In all courses from this program, research, evaluation, and the use the information in a critical way will be encouraged. Also, the comprehension and

interpretation of the information by means of the exchange of opinions with other students will be validated by experts and exercise professionals in the area.

- *Geography:* Include in the Geography courses' syllabus that all students must complete 4.5 hours of workshops every semester in order to acquire the knowledge in the use of the databases of the University of Puerto Rico Rio Piedras Campus' Library System.

See Appendix XII for other examples of assessment results and transforming actions from these and others programs that assessed this learning outcome.

Content Knowledge, Skills or Dispositions in the Academic Program Learning Outcome

Definition*:* Graduating students will demonstrate an in-depth knowledge of the content they learn as part of their academic experience. They demonstrate their knowledge through inquiry, critical analysis, and synthesis of the discipline. 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.

A total of 55 out of the 64 academic programs (85.9%) engaged in the assessment of student learning process, assessed students' content knowledge, skills, or dispositions related to their disciplines. Among those programs, 34 (61.8%) reported positive learning outcomes results in this competency according to expected results established by the programs. Also, 52 programs (94.5%) proposed transforming actions as a result of the assessment process.

Forty-nine programs (89.1%) used at least two different activities to collect data, and 54 (98.2%) reported having assessed this learning outcome in at least two instances. All programs used direct measures to collect data on this learning outcome. Currently, reported assessment methods for competency in content knowledge, skills, or dispositions related to their disciplines are embedded in the discipline courses throughout the curriculum. The programs used the following activities to gather information regarding this learning outcome: case studies, course assignments, papers, tests, internships, electronic portfolios, teaching practicums, field experiences, research-type essays, oral presentations, monographs, comic strips, theater

performances, independent study projects, questionnaires, workshops, laboratory reports, community and organizational activities, among others.

As an example of a program that assessed this learning outcome, the Political Science program used a rubric in the CIPO 3006 course to assess in an exam, if students have the capacity to use the method of comparison effectively in their assignments on political science, or in the comparison of institutions or diverse political systems. It was expected that at least 75% of the students assessed would perform at an 'excellent' or 'good' level according to the rubric used. Findings revealed that the average score percentage of students that achieved the expected outcome was 85.2%, and that the goal was met in all criteria assessed. The program reports that the assessment also revealed that students' performance was superior when they make correct and well explained comparisons, than when they inferred or derived the consequences of the similarities and differences analyzed. Although the expected outcome was met, the program proposed that more emphasis should be given in class to examples of effective comparison during class discussions in order for students to have a better understanding of the application of significant comparison of topics inherent to this course, before a summative assessment can be made in a final exam.

Another program that assessed this learning outcome was Comparative Literature. A rubric was used to evaluate an exam discussion question in order to assess if the student will be able to distinguish literary movements, ranging from Antiquity to Post-modernity, as well as their relationships to other cultural discourses, recognize theoretical schools that have shaped and defined the field of literary studies, and its relationships to other discourses and cultural manifestations. Students also needed to critique texts according to the adaptation and application of relevant theoretical frameworks, above all those that have shaped and defined the field of literary studies and its relationships to other discourses and cultural manifestations. Also, students were required to analyze texts, taking into account technical, formal, historical and thematic aspects. It is expected that 75% or more of the students would receive a score of 4 points or higher in the rubric used. Findings showed that at a mid-term examination, 78% of the students assessed achieved scores of 4 points or higher in all criteria assessed. By the end of the semester, 87% of the students assessed achieved scores of 4 points or higher in all criteria

assessed. Since this is the first time the program gathers information regarding this learning outcome, it reports that this skill will be assessed again in the next assessment cycle (2012-2013).

As the result of the 2011-2012 assessment of student learning process regarding the content knowledge, skills or dispositions outcome, the following sample of transforming actions by academic programs will be implemented in the next assessment cycle (2012-2013):

- *Performing Arts Program:* Strengthen the application of cognitive skills in order to achieve that all students reach the maximum performance level at the TEAT4221 course. Also, continue with these pedagogical resources and strengthen the cognitive skills taught in order to achieve that 90% of the students perform at the highest level possible in all their endeavors. Moreover, continue promoting professional participation experiences of our students as a method to confirm their capacity of applying the acquired knowledge in a working environment performance.
- *Biology: S*pecific objectives of each topic will be revised and curricular material will be designed that promotes learning in the content areas assessed.
- *Mathematics:* Modifications to Pre-Calculus I and II courses (MATE 3023 and MATE 3024) are being studied in order for students to gain a deeper understanding of topics covered in the Calculus I (MATE 3151) course. Present assessment results, along with proposed modifications to Pre-Calculus I and II courses, could imply a course revision as well as the teaching methods employed. Additional measures would be identified when further assessment data is gathered and analyzed, including course modification and complementary training to Teaching Assistants.
- *Labor Relations:* Continue assessing and strengthening work in groups. Also, carry out formative evaluations and make recommendations on how to improve group/team work.
- *Art History:* Propos and develop an intermediate research methodology course for the students of this program.

See Appendix XII for other examples of assessment results and transforming actions from these and others programs that assessed this learning outcome.

Summary of Assessment Results

The following table (Table 1) summarizes the number of academic programs that assessed a specific learning outcome, and the percentage of academic programs that met their expected outcome.

Table 1. *Number of Undergraduate Academic Programs that Assessed Student Learning Outcomes*

Learning outcome assessed	Number of Academic Programs that assessed this learning outcome	Number and Percentage of programs that met their expected outcome
Effective Communication	57	42 (73.7%)
Critical Thinking	58	39 (67.2%)
Research and Creation	51	39 (76.5%)
Social Responsibility	45	31 (68.8%)
Information Literacy	52	36 (69.2%)
Content Knowledge, Skills or Dispositions in the Academic Programs	55	34 (61.8%)
Logical-Mathematical Reasoning	16	4 (25.0%)
Ongoing Learning[2]	N/A	N/A
Capacity for Independent Study	6	4 (66.6%)
Intellectual Curiosity	7	7 (100%)
Knowledge Integration	39	29 (74.4%)
Ethical and Aesthetical Sensibility	16	5 (31.3%)
Appreciation, culture and commitment to the ideals of the Puerto Rican society, Caribbean and International context	23	23 (100%)

Data gathered by student learning outcome reflects a need to increase the number of academic programs that assess the following learning outcomes: social responsibility and ethics, research and creation, and information literacy skills. Furthermore, it reflects the need to reassess in the

[2] The Ongoing Learning Outcome was not evaluated by any of the academic programs of the UPR-RP Campus in the 2011-2012 Academic Year.

next assessment cycle those learning outcomes in which students showed a performance level less than the expected outcome after the implementation of corresponding transforming actions established by academic programs.

The following table (Table 2) summarizes the number of academic programs, organized by College and School, which used multiple measures in multiple instances to assess students' learning outcomes.

Table 2. *Number of Academic programs that used multiple measures and instances*

	Number of Academic Program that have assess student learning in:	
College or School (total programs in parenthesis that participated in the 2011-2012 assessment cycle)	Multiple measures	Multiple instances
Business Administration (10)	10 (100%)	10 (100%)
Education (23)	23(100%)	23(100%)
General Studies (0)	Did not participated	Did not participated
Humanities (12)	9 (75.0%)	11(91.7%)
Natural Sciences (8)	7 (87.5%)	7 (87.5%)
Social Sciences (7)	7 (100%)	7 (100%)
Architecture (1)	0 (0.0%)	0 (0.0%)
Communication (3)	3 (100%)	3 (100%)

Results showed that the current assessment of student learning process has been strengthened through the past cycles. A significantly high number of undergraduate academic programs used both multiples measures and multiple instances to assess student learning outcomes. As has been mention before in this report, assessment findings resulting from cross-corroboration processes are strongly supported.

In Table 3 the OEAE reports the number of academic programs, organized by College and School, who indicated in their Annual Report that they proposed transforming actions, implemented and assessed transforming actions from previous years' assessment cycles (closing

the assessment cycles), and reported that the implementation of some of the transforming actions proposed could imply budget allocations.

Table 3. *Transforming actions proposed by Academic Programs*

`	Number of Academic Program that:		
College or School (total programs in parenthesis that participated in the 2011-2012 assessment cycle)	Proposed transforming actions in at least one learning outcome	Implemented and assessed transforming actions from previous years assessment cycles (closed the assessment cycle)	The implementation of transforming actions could imply budget allocations
Business Administration (10)	10 (100%)	10 (100%)	0 (0.0%)
Education (23)	23 (100%)	23 (100%)	0 (0.0%)
General Studies (0)	0 (0.0%)	N/A	N/A
Humanities (12)	12 (100%)	5 (41.7%)	7 (58.3%)
Natural Sciences (8)	8 (100%)	6 (75.0%)	2 (25.0%)
Social Sciences (7)	7 (100%)	5 (71.4%)	1 (14.3%)
Architecture (1)[3]	1 (100%)	No information provided	No information provided
Communication (3)	3 (100%)	0 (0.0%)	1 (33.3%)

The implemented and assessed transforming actions from previous assessment cycles can be classified as short, intermediate or long term. The OEAE defined these classifications as follows: 1) short term transforming actions are those that can be implemented in a brief period of time, such as during the same semester or within a semester time period, 2) intermediate term transforming actions are those that requires more than one semester, but less than an academic year period to be implemented, and 3) long term transforming actions are those that require more than one academic year to be implemented. Examples of short term transforming actions proposed by some academic programs during the 2011-2012 assessment of student learning cycle were: providing students with the rubric along with course assignments, increasing specific course assignments or exercises, and providing support structures such as tutoring or specific

[3] Although the Environmental Design Program from the School of Architecture participated in the 2011-2012 assessment of student learning cycle, its report does not provide sufficient information that the program implemented and assessed transforming actions from previous years assessment cycles as well as that they could imply budget allocations.

assistance provided by other units in Campus, and requiring workshops as part of a course. Samples of intermediate term transforming actions proposed were: increasing admissions requirements or requiring approving previous courses before enrolling in upper-level courses. Some of the transforming actions proposed that could require long term implementation were: a major curricular change, development and approval by the Curriculum Committee of a new course or a new course sequence, or the organization and time allotted to the teaching of topics covered in consecutive courses. Most of the transforming actions proposed by the academic programs in the 2011-2012 assessment of student learning cycle can be classified as either short or intermediate term (see Appendix XII).

It must be noted that few of the assessed transforming actions are cost dependent since they could require budget allocations. Other implemented transforming actions could imply the reassessment of the academic programs current assessment process (by revising assessment instruments, revising or adding new educational activities in which a student learning outcome will be measured, as well as the courses in which it will be assessed, increasing the number of faculty members participating in the assessment process, new ways to disseminate assessment findings, revising current methods for analyzing assessment data, among others).

Students' Perception of the Academic Preparation Received during Their Baccalaureate Experience.

An exit survey was administered to a sample of the 2012 graduating class in order to gather information regarding their satisfaction level with the academic preparation received from their academic programs (Appendix XIII). Their perception was assessed in terms of 19 institutional student learning outcomes, and/or skills. When combining the percentage of students that indicated that they had a high or very high satisfaction with the academic preparation received, data showed that in 14 (73.7%) of the 19 institutional students learning outcomes or/skills assessed, students expressed a level of satisfaction higher than 70%. Those learning outcomes in which students indicated that they had a lower level of satisfaction were: oral communication in English (58.8%), written communication in English (58.2%), logical mathematical reasoning skills (55.7%), statistics skills (46.6%), and technology skills (60.9%). Students' perception as an

indirect measure of student learning evidences the need to implement transforming actions geared to strengthening these learning outcome and skills in curricular and extracurricular activities in the undergraduate academic programs. These results are similar to the ones observed in previous graduating student exit surveys. Segregated data of student's perception by College is also included in Appendix XIII.

Highlights of Improvement of the Assessment of Student Learning in Undergraduate Academic Programs at the UPR-RP Campus

An improvement can be seen through the last three years in the assessment of student learning processes carried out by the undergraduate academic programs as faculty and Assessment Coordinators learn from previous experiences and acquire confidence and understanding of this process. Also, it is evident by the number of instances and measures used that there is an increase interest by faculty members that are participating in these processes across undergraduate academic programs. Moreover, Campus administration commitment with the assessment of student learning process contributed to strengthening a culture of assessment on Campus, with the following actions taken:

- Additional Assessment Coordinators at the College level were appointed.
- Budget resources have been allocated for assessment activities such as release time or compensations for program Assessment Coordinators.
- An increase in faculty participation in the assessment process.
- A higher commitment among academic members evidenced by the number of multiple measures used, and in the increase in instances in which a learning outcome was measured.
- An increase of dissemination of assessment results in forums such as faculty meetings, departmental websites and workshops.
- Progress in student learning observed in important general education learning outcomes.
- Most of the transforming actions that are implemented at the program and course levels do not require budgets allocation.

- A high number of academic programs are assessing implemented transforming actions, thus closing the assessment cycles, and therefore providing a continuous effort to maintain or improve student learning.

Additional Assessment Related Efforts Provided by the OEAE Personnel

The OEAE personnel provide in-kind consultant services to institutional assessment initiatives, as well as projects or activities in which assessment of student learning is required. During this academic year, the OEAE collaborated in two different projects: 1) developing a proposal for an evaluation plan for an NSF grant proposal developed by a professor of the Biological Science Department of the College of General Studies, and 2) developing and revising a series of rubrics to be used by the Graduate School of Science and Information Technologies.

The NSF grant proposal by Dr. Lorna Jaramillo-Nieves (Development and Implementation of Inquiry Based Learning Experiences to Improve Student Understanding of Geohazards, Geologic Events Affecting Society, TUES-Type 1 Project – Proposal number 1140698) required an assessment of student learning action plan. However, after a detailed analysis of the proposal to be submitted, the OEAE personnel suggested that an overall evaluation plan of the project should be established that includes a strong assessment of student of learning component. The Principal Investigator (Dr. Jaramillo-Nieves) embraced the OEAE's suggestion, and a proposal for an evaluation plan was developed. The proposal was submitted in May 2012 and is currently pending to be review by a six-member evaluation team.

The Accreditation Committee Members of the American Library Association recommended in the recent evaluation report of the Graduate School of Science and Information Technology of this Campus that this graduate program should strengthen its assessment of student learning component by developing a series of rubrics to measure student learning outcomes in all courses. At their request, OEAE personnel provided information regarding assessment of student learning processes and how to develop different rubrics to assess different educational activities. After developing their first draft, the OEAE personnel provided them relevant feedback and revised four different rubrics geared to evaluate student learning in the following activities: essays, case studies, oral presentations, and online discussion forums. These rubrics were adopted by the

faculty members of the Graduate School of Science and Information Technology and are currently being used by them in their courses.

Two additional collaborations by the OEAE personnel during the academic year 2011-2012 are worth mentioning. First, from January to March 2012 OEAE personnel participated in the development of the Campus Monitoring Report to the Middle States Commission on Higher Education. Specifically, the OEAE personnel, along with Dr. Sonia Balet –Coordinator of the Assessment of General Education Competencies at the Institutional level– developed a response to the MSCHE recommendations regarding its Standard 12 (General Education, see appendix IV) in order to provide evidence about "steps taken to strengthen general education and implementation of a documented assessment process for oral communication, written communication, scientific reasoning, quantitative reasoning, and critical analysis". Also, the OEAE personnel participated in the Campus Committee appointed to develop the final Monitoring Report and provided helpful recommendations regarding its organization, content and presentation. Second, the OEAE personnel collaborated with the Center for Academic Excellence (CEA, for its Spanish acronym) by carrying out four assessment of student learning related workshops (those marked with an asterisk in the *strengthening the assessment process* section of this report). As requested from the Campus Dean of Academic Affairs, the OEAE presented to the Colleges' Associate Deans the current status of the assessment of student learning efforts in all undergraduate academic programs and provide relevant information to address their concerns.

Prospective Plans

To continue supporting and promoting an ongoing culture of assessment, prospective plans for the following year include, among others, which the OEAE personnel will:

- Ask each academic program to review last year's Assessment of Student Learning Plan, the Five Year Assessment Plan and the Curricular Matrix according to the assessment experiences of these last three years cycles.
- Ensure that every academic program will implement transforming actions resulting from this year's assessment processes (2011-2012) in next year's (2012-2013) assessment Plans.

- Follow-up conversations with the Computer Science Department to develop a web-based assessment tool to facilitate gathering assessment data and its analysis.
- Administer a written communication test to a sample of senior students' sections to provide a uniform way to gather information about this learning outcome in order to develop a profile of graduating candidates' effective communication skills.
- Administer a written communication test to incoming students in August 2012, and a follow-up test for this cohort of students at the end of the second semester of the freshman Spanish course.
- Strongly recommend the use of multiple measures in different instances in each academic program for each learning outcome assessed.
- Ensure that each program include in the course syllabus the learning objectives of the learning outcomes assessed in the course.
- Recommend undergraduate academic programs to include critical thinking, social responsibility, research skills, and information literacy in next year Assessment of Student Learning Plans, if they had not been measured in previous years' assessment cycles.
- Recommend undergraduate academic programs that obtained a low or negative result in their assessment of a specific learning outcome to reassess them in the next assessment cycle (2012-2013) after implementing the proposed transforming actions.
- Recommend undergraduate academic programs to assess team work as a discipline related skill in the 2013-2014 assessment of student learning cycle.

To strengthen the Assessment of Student Learning process in all undergraduate academic programs is necessary to:

- Increase the Deans and Department Chairs commitment with the Campus Assessment of Student Learning process.
- Increase the number of persons (professors and students) that participate in the assessment of student learning process in each undergraduate academic program through the deans' and department chairs' commitment.
- Request evidence from each academic program that supports the dissemination of previous years' assessment results among faculty members and students.

- Ensure that the Assessment of Student Learning Plans include an increase in the number of courses assessed in each program each year in order to provide an expanded view of the assessment process through the baccalaureate degree, and hence of the improvement of student learning.
- Evidence the existence of a solid and responsible administrative support to the assessment of student learning process.
- Evidence Campus commitment with the implementation of transforming actions proposed by different academic programs that are the result of years of assessment of student learning efforts.

As third assessment of student learning cycle comes to an end, it is evident that a great progress has been made over the past years. The current process has a well-established support structure in the UPR-RP Campus. A very high number of undergraduate academic programs have appointed a faculty member as an Assessment Coordinators responsible of organizing assessment of student learning efforts with other colleagues in their programs. Moreover, some Colleges and Schools named College-level Assessment Coordinators to ensure that progress is made in their undergraduate academic programs by providing timely feedback and coherence to the overall process. Faculty members' contribution throughout these past academic years, along with a supportive institutional administration to the assessment of student learning process has greatly contributed to strengthening a culture of assessment on Campus.

Assessment findings at the program level are providing evidence of the current state of student achievement in multiple instances in their baccalaureate experience. Although some areas of improvement have been identified, overall results demonstrate that students are achieving expected levels of performance regarding institutional and program learning outcomes as stated in the Graduating Student Profile. Findings support that students are receiving a solid academic preparation that prepares them for graduate studies or to compete favorably in their professional work environment. Current assessment of student learning processes at the undergraduate academic programs shows an optimistic momentum to ensure that students are provided with sufficient opportunities to achieve expected outcomes at the course, program and institutional levels.