UNIVERSITY OF PUERTO RICO
Río Piedras Campus
Office of the Dean of Academic Affairs
Office of Student Learning Evaluation

Undergraduate Academic Programs Assessment of Student Learning Annual Report

Academic Year 2014-2015

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Oficina de Evaluación del Aprendizaje Estudiantil • UPRRP
Office of Student Learning Evaluation

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University of Puerto Rico

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Annual Report on the Sixth Cycle of the Assessment of Student Learning Process in the Undergraduate and Graduate Academic Programs (2014-2015 Academic Year)

Introduction

The Assessment of Student Learning at the University of Puerto Rico Río Piedras Campus (UPR-RP) underwent its sixth cycle in the undergraduate academic programs (2009-2010; 2010-2011; 2011-2012; 2012-2013, 2013-14). The first cycle of the second stage (of five cycles) began in 2014-15. A total of 51 programs out of 70 (73%) participated and handed in their Annual Reports to the Colleges' Assessment Coordinators and to the OEAE during August and September 2015. For the purpose of the evaluation process in UPR-RP, 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 learning objectives 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 transformative actions. In the next assessment cycle the implemented transformative 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.

During the 2014-15 academic year the Office for the Assessment of Student learning was restructured under the guidance of the Deanship of Academic Affairs. The assessment of student learning in the Graduate program was integrated with the assessment of student learning in the undergraduate programs. The Dean of Academic Affairs wrote a Curricular Letter institutionalizing the Office (Appendix 1). New personnel were hired: two Part-time Directors (6crs, and 3crs, respectively), an Undergraduate Program Assessment Coordinator, a Graduate Program Assessment Coordinator, and a Statistics Analyst. Two Research Assistant were named through the Formative Academic Experience Program (PEAF) (18 hrs./week): one from the Graduate Translation Program in charge of translating all assessment process related documents, and another from the College of Education helping in the evaluation of the assessment reports and instruments used in the

programs assessment process rendered by the academic programs. Two students from the Work and Study Program were also assigned to this office: one from the School of Education and one from the Office System Management Program helping in office related duties. An hourly employee student also helps with the everyday assessment related duties. Support to this Office establishes the Campus commitment to an organized, systematic and sustained process of assessment. Nevertheless, a stronger commitment among the persons in high administrative positions: Chancellors, Academic Deans, Associate Deans, College Deans, and Programs and Department Directors, is needed in order to strengthen the student learning process in all campus academic programs and continue developing the assessment culture in the Campus.

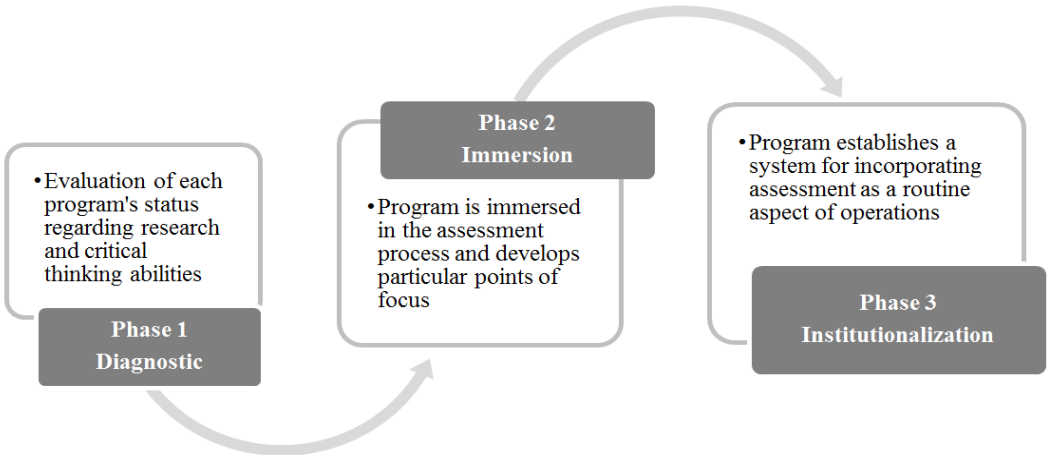
The Office for the Evaluation of Students Learning (OEAE for its Spanish acronym) was created by the Campus Dean of Academic Affairs Office. Its mission is to coordinate and institutionalize student learning assessment efforts through the implementation of the Student Learning Evaluation Plan approved by the Academic Senate in April 2006 of the University of Puerto Rico, Rio Piedras Campus. (Appendix II) The programs that assessed Student Learning in Campus during the 2014-2015 academic year continued the process as designed and planned, and followed the guidelines traced in the Student Learning Evaluation Plan. This process of assessment of student learning is faculty led, data driven and course embedded.
All information related to the assessment process in undergraduate and graduate academic programs, and workshops held so far related to developing and supporting a Campus assessment culture is available at http://oeae.uprrp.edu/

The website includes assessment plans for each undergraduate and graduate academic program, competencies and learning objectives evaluated, assessment rubrics and educational activities, and the annual reports, among others documents. It also includes assessment data and results of the academic programs that participated on the Online Learning Assessment System (OLAS) pilot project during the second semester of 2014-2015. See Appendix III for the services rendered by the OEAE.

The learning outcomes of the Campus mission, as stated in the Graduate Baccalaureate Student Profile (Appendix IV), 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.

Most of the learning outcomes of the Campus Mission are also assessed at the graduate academic programs and all information gathered is analyzed and reported in OEAE Annual Reports. The implementation of the learning assessment process at the graduate level, which began in 2007, can be conceptualized in three

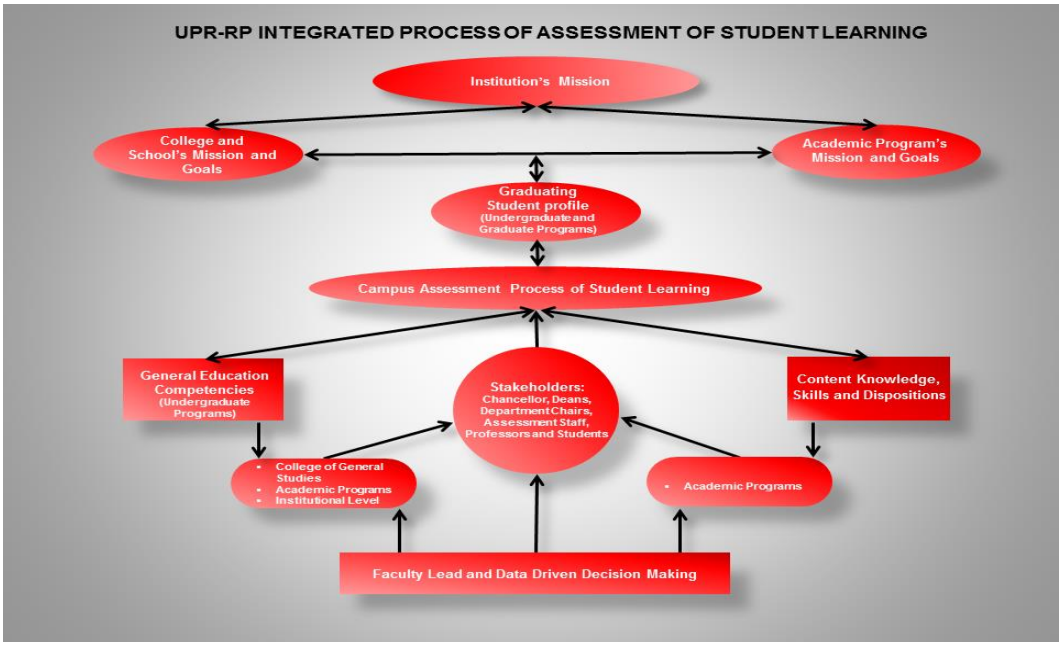
phases. The programs transitioned across phases at different paces. The following figure represents the assessment implementation process.



At this moment, graduate programs are in the implementation phase. The above figure represents the process. To assure the continuity of this process, learning assessment continues to be an important part of the institutional evaluation process of graduate programs. The self-study guide and the institutional program evaluation plan can be found in: http://graduados.uprrp.edu/index.php?Itemid=314&lang=es Assessment information related to graduate programs can be found at http://oeae.uprrp.edu/ .

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 is described in the following Figure.

Figure 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, critical thinking, social responsibilities and information literacy are assessed at the **initial level** in the College of General Studies (CGS). They are also assessed throughout their careers at the **academic programs level** since the 2008-2009 academic year. Some of the general education students' learning outcomes (SLO) are also assessed at the **institutional level** in order to have a uniform instrument to measure a larger sample.

Assessment of student learning of general education competencies within the College of General Studies

From the common set of intended learning outcomes for all undergraduate students at UPR-RP, as described in the Student Profile (Academic Senate Certification 46 2005-2006), the following general education competencies were assigned for assessment at the College of General Studies (CGS) and distributed among its departments and program as follows: (1) written and oral communication skills in the Spanish and English Departments' courses, (2) scientific reasoning in the Physical and Biological Sciences Departments' courses, (3) critical thinking in the Humanities Department's courses, (4) social responsibility in the Social Sciences Department's courses, (5) information literacy skills in all departments, and (6) logical-mathematical reasoning skills in the General Studies Program.

The continued assessment process of General Education Competencies in this College has been supervised by Dr. Vanessa Irizarry since 2009-10. During the academic year 2011-2012 a college-wide implementation process began at FEG. Professors in charge of assessment and department directors were trained by Student Academic Evaluation Office (OEAE for its acronym in Spanish) staff in student learning assessment processes. Curricular matrices including competencies, learning objectives, instructional activities, evaluation criteria, measurement instruments and expected outcomes were developed and aligned with course syllabi in all of the Departments. Assessment pilot projects were conducted in some courses and sections in all Departments. The findings from these pilot projects evidenced areas of students' learning that required attention, such as hypothesis writing in the science courses and grammar skills in the English courses.

To assure a college-wide systematic implementation of assessment processes and contribute to the development of an assessment culture at CGS, a General Education Competencies Assessment Project

Committee (PACEG for its Spanish acronym) with representatives from all Departments and the Library was established and directed by a College Assessment Project Coordinator in the academic year 2012-2013. At present, all members of the PACEG Committee receive institutional support in the form of a TARE or other compensation. A protocol for three distinct assessment process stages has been developed and two three year assessment plans have been designed and implemented. (Appendix V *FEG Three-Year Assessment Plan Summary 2010-2013 and FEG Three-Year Assessment Plan 2013-2016*).

In general terms, during the first stage, learning objectives, measures, instruments and expected outcomes are established. Activities are implemented and assessment data collected and analyzed during the second stage. Assessment results are interpreted and discussed at curriculum, departmental and PACEG meetings. Transformative actions are proposed and implemented during the following semester or academic year. This last stage closes the three-year cycle at FEG and necessary adjustments are made for the following three-year cycle. As will be demonstrated, the discussion of findings, together with the implementation of short and long term transformative actions like the use of rubrics as instructional tools, integration of new teaching activities, revision of instructional materials and some courses' syllabi produced better learning outcomes in the following years. (Appendix V: *FEG Gen Ed Assessment Results 2011-2015 by Competencies*)

Assessment of Students' Information Literacy Skills at the College of General Studies (CGS) – Initial Level

Following the ongoing Campus-wide PICIC Project, an effort to assess information literacy skills in all general education courses at CGS was implemented since the academic year 2011-2012 and systematically enforced during the following years. A CGS general objective and six supporting competencies were selected from the Association of College and Research Library (ACRL) information literacy competency standards at an initial level. These were incorporated in all master course syllabi of general education courses. A significant student participation increase from the academic year 2011 to the present is observed from in the Physical Sciences Department (CIFI's) assessment; in the Humanities Department (HUMA); and in the Intermediate English level. Appropriate transformative actions were implemented in all Departments during the academic year 2013-2014 including general workshops offered to students at the Library and specific workshops offered to individual professors' classes. As of 2014-15, all departments are assessing their assigned student learning outcomes an also they assess information literacy skills with a diversity of measures compatible with their discipline.

Rubrics to be used were designed or selected and validated. The College Coordinator administered a survey to all CGS professors during the academic year 2012-13 to indirectly assess implementation efforts. The indirect measure indicates that 93% of the professors included Information Literacy learning objectives in their syllabi and 90% included activities. Seventy nine percent (79%) of them stated they assess student learning of these competencies and 92% stated that the integration of information competencies to the curriculum has been successful. Professors confirmed that students can use a variety of sources and search strategies but have problems evaluating the validity of their sources and of ethical use by not being able to quote correctly in-text or use the correct MLA or APA style format in a bibliography. Educational activities, in which assessment information of this learning outcome was gathered, were: annotated bibliography, essay literary analysis, research reports, socio-biography and research plan, presentation/bibliography of researched topic.

Assessment of Effective Written and Oral Communication in English- initial level

At the College of General Studies, incoming freshmen students are placed in their courses by proficiency level according to their College Entrance score in the ESLAT (English as a Second Language Assessment Test). Assessment results indicate that in the low English Level courses, students did not achieve the expected 70% outcome in the writing communication aspects of content, organization, vocabulary, grammar and mechanics at an intelligible level. Students at this level achieved the expected outcome in oral communication skills. Proposed and implemented transformative actions at this level included incorporating grammar exercises, creating grammar modules, lowering the number of students per section, and revising course and laboratory curricular content. At present, the revised syllabi, including that of a three hour per week non-credit laboratory experience, are under the consideration of the Curriculum Committee.

For the Basic, Intermediate, and Honor level English courses the expected outcomes were achieved both in written and oral English as measured by the rubrics designed for an specific level of English in which students are classified according to their performance in that discipline in the College Entrance Exam administered by the College Board. Transformative actions implemented in the upper level courses have included the use of the rubric as an instructional strategy, identification of strategies to teach critical aspects such as development of thesis statements at the Intermediate level and the inclusion of strong supporting paragraphs that develop the thesis statement at the Honors Level. The process of a shared essay correction effort has changed some professors' attitudes toward the assessment process in a positive way. In addition, integrating information literacy skills to the language (written and oral) assessments has been a successful strategy.

Assessment of Effective Written and Oral Communication in Spanish- Initial Level

Incoming CGS students are also placed in their first year Spanish courses by level, based on their College Entrance Exam scores. Data collected in the Intensive low and Basic levels indicate 100% achievement of writing competencies in both levels. Transformative actions included the use of the rubric and a systematic incorporation of writing assignments such as paragraph and short essay writing responding to class content. An important transformative action in this department has been the use of rubrics with instructional goals as opposed to using them as evaluation instrument exclusively. This paradigm change has had a direct effect in the teaching strategies used by professors and eventually in the syllabus.

Assessment of Scientific Research Competencies- Initial level

Scientific research and reasoning skills are assessed in the Biological Sciences (CIBI) and Physical Science (CIFI) Departments at the College of General Studies. Students' difficulty writing a hypothesis and reaching conclusions is evident from the assessment of this learning outcome. Similar results were observed in the CIFI Department assessment with students failing in two criteria: data analysis and conclusion. As transformative actions, CIBI Department staff revised the Instructional Manual used in the non-credit laboratory required for their course and emphasized areas of weaknesses using the rubrics as instructional tools. Similar transformative actions were implemented in the CIFI Department including the development of new experiments with instructions. They also proposed that class meetings should include discussion of how to write and submit scientific findings in laboratory reports, including establishment of the hypothesis. There was increased professors' participation in both CIBI and CIFI Departments. The rigorous selection of a random sample, correction method, and instrument validation process used in the CIBI assessment should lead to the conclusion that assessment results are a true representation of students' achievement tendencies in scientific research competencies.

Assessment of Critical Thinking Competencies – Initial Level

Critical thinking skills are assessed in the Humanities (HUMA) courses at the College of General Studies. Using a critical review as an educational activity, the students were assessed in the following criteria: identifies the problem, presents own perspective, considers others perspectives, and analyses arguments. Findings revealed that 70 % of the students assessed met the expected outcome.

Assessment results informed by the College of General Studies College Assessment Coordinator, Dr. Vanessa Irizarry, during this academic year (2014-2015), will be included in the Appendix V.

Assessment of Student Learning at the Institutional Level

All undergraduate academic programs are required to assess general education competencies, as described in the Graduate Baccalaureate Student Profile from the perspective of the discipline as well as the content knowledge, skills, and dispositions that characterize each academic program. Hence, the general education competencies of the General Education component of the Baccalaureate Degree are assessed at the initial levels in the College of General Studies as described above and at the institutional level in all undergraduate academic programs. For example, effective communication in Spanish, information literacy and logical-mathematical reasoning skills were assessed at the institutional level. These skills were assessed in all departments at the College of General Studies and in most undergraduate academic programs at the program level. Logical-mathematical reasoning skills were assessed at the institutional level in those Mathematic courses in which students enroll to comply with this general education component of their Baccalaureate degree and in some undergraduate academic programs. It was also assessed in the pre-calculus course of the College of Business Administration to comply with this general education component. Effective Communication in Spanish is also assessed at the institutional level using a prompt designed by the Spanish departments' professors for incoming students (approximately 2200 students) and as an exit instrument to a sample of approximately 800 students enrolled in advanced courses taken by students that are finishing their baccalaureate degree. The table (Table 1) in the following page represents a tentative schedule of assessment tests administered or to be administered at the institutional level.

Table 1. : Tentative Schedule of Institutional Tests

Tentative Schedule: Institutional Tests					
Test	**2014 – 2015**	**2015 – 2016**	**2016 – 2017**	**2017 – 2018**	**2018 – 2019**
Spanish Writing (Incoming Students)	Prepare documents (January through May)	Administer test (August, the day of enrollment analysis)	Prepare documents (January- May)	Administer test (August, the day of enrollment analysis)	Prepare documents (January- May)
Spanish Writing (Exit)	Design, prepare documents and administer the test. (April)		Prepare and administer test (April)		Prepare and administer test (April)
English Writing (Exit)		Start meetings to conceptualize and design the test. Administer test to a small sample of advanced course sections (April)		Administer test to a larger sample of advanced course sections (April)	
Critical Thinking	Start designing a test by experts	Prepare test and logistics for its administration (Jan-June)	Administer test to a small group (pilot test) (April - May)	Administer test to a larger sample of advanced course sections (January-May)	Administer test to a larger sample of advanced course sections (January-May)
Logical mathematical reasoning	Administer test to MECU, MATE, ESGE & EDFU course sections		Administer test to MECU, MATE, ESGE & EDFU course sections		Administer test to MECU, MATE, ESGE & EDFU course sections

Assessment of Students' Information Literacy Skills

Information literacy competencies are assessed at an initial level (College of General Studies) and at the developmental level, from sophomore to senior years. Also, the graduate and undergraduate programs should measure this student learning outcome at the program level assessment.

An operational definition for these competencies adapted from ACRL was made, and learning objectives were designed for the initial and developmental level (Appendix VI). 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 sponsored by the different Colleges or Schools.

These competencies have already been measured by some of the undergraduate academic programs as part of their Assessment Plans. This learning outcome is also assessed in special projects at the Library System (PICIC PROJECT), and at the Architecture and Natural Sciences Colleges' libraries.

Implementation of the information literacy assessment of the Library System PICIC Project

To facilitate the development of the Project three librarians of the Institution Library System participated in the ACRL Information Literacy Immersion Program (teaching track 2009, assessment track 2010 and teaching with technology, management track 2013. Also, training activities for all library system personnel were coordinated and offered.

Three Colleges participated in the PICIC Project: College of Education, College of Business Administration and College of General Studies. Although this project is mainly geared to undergraduate students, it also has an impact on graduate students from the Colleges of Education and Business Administration. All colleges participating are following the same learning objectives for this learning outcome (information literacy) as approved by the Campus Committees.

In the College of Education each professor integrates information literacy objectives and criteria in their courses. A total of 6 sections (126 students) participated in the assessment of this learning outcome. It was expected that 80% of the students assessed would obtain 3 points in the three points scale rubric used. The goal was not met since only 43% of the students obtained 3.0 points. As transformative actions the Teacher Preparation Program proposed that students will be encouraged to participate in special workshops geared to reinforce information literacy skills and to assess this learning outcome in more instances to reinforce areas of need.

The College of Humanities assessed this competency in 2014-2015 academic years in their general education courses: Hispanics Studies, English and Comparative Literature. Also, it is measured in all the other academic programs of this College at least once in a five year cycle as part of their Assessment of Student Learning Plans. A series of workshops for graduate students were offered during the second semester 2014-15: Search for information in the Library System Database (January 30, 2015); Open access information sources (February 6, 2015); Articles Preparation and Publishing (March 6, 2015); Academic honesty in research and publishing (February 13, 2015).

A survey was developed and administered to all College of General Studies professors during the academic year 2012-13 to indirectly assess implementation efforts and help interpret the initial data collected. The indirect measure indicates that 93% of the professors that answered the survey included information objectives in their syllabi and that 90% included activities, while 79% of them stated they assess student learning of these competencies, and 92% stated that the integration of information competencies to the

curriculum has been successful. Professors confirmed that students can use a variety of sources and search strategies but have problems evaluating the validity of their sources and of ethical use by not being able to quote correctly in-text or use the correct MLA or APA style format in a bibliography.

A systematic gathering of assessment data of this competency, the inclusion of these competencies learning objectives and the description of the learning activity or activities in which they will be measured should be included in the course syllabus is recommended. Also, a standardized measurement instrument should be developed.

Information Literacy Project of the College of Architecture

As an academic entity, the Library of the Architecture School caters to different levels of research activities by supporting the School's baccalaureate and masters programs, as well as students and researchers from other colleges and institutions. It is also used by professionals in the field when preparing for license exams or for their professional projects. During the 2014-2015, information literacy skills were assessed in the courses ARQU 3121, ARQU 3132, ARQU 4115, ARQU 4213, and ARQU 4214 at the undergraduate level. They are also assessed in the ARQU 6311, ARQU 6313 and ARQU 6145 graduate courses. (Appendix VII) A total of 335 students participated in these workshops, some of them, received individual assistance in developing topics of their thesis proposal and in their end of degree projects. This special assistance also helped them in drafting the research topic, the search for research sources, in texts revisions, among others. Workshops related to this learning outcome are scheduled throughout the semester to all students enrolled in these courses. Also, modules of topics related to this learning outcome were designed by the library faculty personnel and assigned to the students. Students are required to take a pretest previous to studying a module, followed by a posttest.

Beyond the traditional references and bibliographical instruction services, librarians offer workshops and conferences on different subjects:

- Identification of research subjects
- Research strategies and information recovery
- Information evaluation criteria
- Plagiarism and academic honesty
- Style manuals for theses preparation and end of degree projects
- Programs for bibliographic management

The library staff of the School of Architecture, conscious of their educational role, has improved and extended their efforts in the education and training of the library users. The Information Literacy Program, created during the 2009-2010 academic year, serves students and professors of the School of Architecture, both in the bachelor and master's degree. This service has impacted **1,731** students since its creation (see annex). During the 2014-2015 academic year, **335** students were attended; some needed individualized attention for the development of their thesis proposal, their thesis, or an end of degree project. Individualized attention helps during the process of determining a research topic, the search for research sources, text revisions, etc. This service is offered throughout the entire year through the Library personnel participation in thesis committees and language revisers. More than **80%** of the graduated students that had individualized attention obtained excellent grades for their writing texts.

As an intervention strategy, five instructional modules that follow the ACRL standards have been created locally for the development of information literacy skills and competencies. The modules are available in http://picic.uprrp.edu , a username and password is required to enter. Its content is distributed as follows:

- Welcome
- Module 1: Beginning a Research Project
- Module 2: Search and Recovery of Information in the Library Santiago Iglesias, hijo
- Module 3: Information Evaluation
- Module 4: Plagiarism and Academic Honesty: Strategies for Crediting Information Sources Consulted and Closing Words

Most of the professors from the ARQU 3121 course (Introduction to Architecture) ask the students to work out the modules. Fifty-four students (67%) out of 81 students who are enrolled in the course completed the modules. These modules have pre exams and post exams. Currently, the library staff is working on updating these modules to make them accessible through Moodle to all libraries and campuses of the University of Puerto Rico.

In addition, since 2013, the library of the School of Architecture coordinates the assignments of The Community of Information Skills Practice of the University of Puerto Rico (http://redesupr.blogspot.com/). At the moment there are two modules on Moodle:

- "Plagiarism: "What every university students should know" is available on http://ayudabibliotecas.upr.edu with access limited to students and professors of the University of

Puerto Rico. This module is divided in two parts that respond to standard number 5 of the ACRL (2000).

  - Lesson 1.1 "What is Plagiarism?" and
  - Lesson 1.2 "How to Avoid Plagiarism."

- Second module contains:
  - Lesson 2.1"Documenting and Giving Credit: Citing the Document Following the APA Style Manual" (Sixth Edition)
  - Lesson 2.2 "Creating References Following the APA Style Manual" (Sixth Edition).

These modules have exercises, pre and post exams. The pilot project will launch in March 2016 with the participation of professors from University of Puerto Rico Río Piedras, Carolina, and Ponce campuses.

Information Literacy Project of the College of Natural Sciences

The information literacy teaching and assessment project of the College of Natural Sciences (developed in 2013-14) places the teaching of these competencies in the context of the discipline, so the student understands the importance of learning and mastering information skills in the area of his chosen field. During the first stage two exercises were developed and modified in the General Biology and General Chemistry laboratories. Both exercises were in line with ACRL standards for the science, engineering, and technology academic programs. These courses were chosen with the purpose of impacting the majority of the first year students in the College of Natural Sciences. The information literacy learning objectives for this Project correspond with the learning objectives of Information Literacy Program of the Campus. They were incorporated into the course syllabi along with the learning objectives of the course material. The description of the activities used to assess these competencies and the learning objectives of said activities were also included.

The first exercise of basic analysis of the parts of a scientific article (Project I) is due the first week of the laboratory course. It was determined that the expected outcome would be that 70% of the students obtain a score of 70% or more. During the first time that this exercise was administered, it was shown that students recurrently (both in Biology and Chemistry laboratories), had problems determining whether a reference came from a book, journal or another sources. As a result, in the first semester 2014-15, the instructions for authors from the corresponding journal were included. In addition, the Natural Sciences Library, CiTEC, had been offering workshops related to this topic.

During 2014-2015, the exercise was administered to BIOL3102 laboratory students. The expected outcome was that 65% of students had good or excellent performance in the exercise. In the first semester 92% of the students

achieved the expected outcome (32% excellent and 60% good). During the second semester, all students achieved the expected outcome (38.5% excellent, 61.5% good). The Department of Chemistry, did not administer the exercise in the QUIM 3001 course. A revised version of the exercise was presented to the Assessment Coordinator, to be incorporated in the QUIM 3001 laboratory during the second semester 2015-2016.

The same courses assigned a second exercise (Project II) that consists of the student participating in a research project in which information is gathered in stages, leading the student until reaching the final product. This second project includes the assessment of information literacy based on four ACRL Standards for Science, Engineering and Technology (See Appendix VIII). At the end of the semester students handed in a written project and gave an oral presentation. The expected outcome for this exercise was that 65% of the students would a score of "good" or "excellent".

The second exercise was administered during the first semester 2014-2015, in the Ecology project laboratory report. It was expected that 65% or more students had good or excellent performance in the exercise. Nevertheless only 63% achieved the goal (43% good, 20% excellent). During the second semester, all students reached the expected goal (57% good, 43% excellent). Overall, during the year 70% of students reached the expected outcome. The main problems were the trustworthiness of the sources used, consistency between the references cited and the bibliography, and formatting errors in the bibliography. It was noted that first-year students didn't really understand reference formats or the importance of citing correctly.

In order to solve this problem, the presentations created by the library personnel have been improved upon since the previous semester. Meetings with the library personnel in which assessment results information was exchanged that will help the Student Learning Assessment Coordinators determine what material offered by the library would be useful and what new materials they would require to evaluate information literacy skills in intermediate and advanced courses. The library academic personnel are conducting a series of workshops, directed to students and faculty members, dealing with topics pertinent to information literacy. These workshops are offered more than once and at different times in order to reach a greater number of students and faculty members.

Assessment of Students' Logical-Mathematical Reasoning Skills

A test designed by a committee of experts to assess logical-mathematical reasoning skills was validated and administered to a series of sections of math courses in which students that are not from the Colleges of Business Administration and Natural Sciences enroll to comply with the skills for this general education component of the Baccalaureate degree. This test was administered for the first time in May 2011, and again in May 2013 and November 2014. Additional measures geared to course modifications and tutor training

were worked on to strengthen student learning in this learning outcome. A tutoring system was implemented, coordinated by an experienced professor, to improve students' learning needs in this outcome. It seems that students used tutoring sessions to help them understand their course concepts and not to strengthen their logical mathematical reasoning skills. Discussions about how to improve teaching and learning of these skills are currently underway. Results of each competency area assessed in the tests are shown in the following table. Similar results were obtained in the three instances in which the tests were offered. New teaching activities are needed to improve learning of this student learning outcome. The OEAE personnel met with the Director of the Mathematics Department and with the Department Assessment Coordinator to discuss the need to design a learning experience geared to reinforce the logical- mathematical reasoning skills in the students.

Table 2: Logical- Mathematical Reasoning Test Results in Math Courses

LOGICAL-MATHEMATICAL REASONING TEST (GENERAL)			
Competency Area	**2010 – 2011 (May, 2011)**	**2012 – 2013 (May, 2013)**	**2014 – 2015 (November, 2014)**
Computation	44.84%	43.90%	46.36%
Representation	62.92%	62.87%	64.37%
Evaluation	51.89%	52.21%	52.04%
General Average	**52.34%**	**52.09%**	**53.34%**
Participation	**521 students**	**215 students**	**697 students**

A similar test was administered to students from the Business Administration College who enrolled in the Pre-Calculus course (Quantitative methods Course) as a requisite to comply with the general education logical mathematical reasoning component. The following table evidences results by area of competency and compares results in each instance in which a similar test was administered in the Quantitative Methods course.

Table 3.Logical –Mathematical Reasoning Results in the Business Administration Pre-calculus course

LOGICAL-MATHEMATICAL REASONING TEST FOR QUANTITATIVE METHODS COURSE (MECU 3031)				
Competency Area	**2010 – 2011**	**2011 – 2012**		**2014 – 2015**
	May, 2011	**December, 2011**	**May, 2012**	**December, 2014**
Computation	53.11%	74.06%	68.03%	77.68%
Representation	57.98%	70.55%	64.01%	70.05%
Evaluation	54.20%	77.30%	63.56%	75.59%
General Average	**54.86%**	**74.14%**	**65.39%**	**74.80%**
Participation	**165 students**	**146 students**	**138 students**	**182 students**

After discussing results with all faculty members who teaches this course, it was decided that this test did not measure the logical mathematical reasoning skills require for the MECU students. A comparable process was followed to design a test with items that comply with the same content areas approved for the original test to assess logical mathematical reasoning skills but in the context of the Pre-calculus (MECU 3031) course objectives. This test was designed and approved by the professors who teach this course. It was administered in December 2011 and again in May 2012. An improvement in students' achievement can be seen when these competencies are measured within the context of t Results from all administrations of the Logical Mathematical Reasoning Test for Pre-Calculus Courses were discussed with faculty members. The discussion resulted in a major revision of all three Quantitate Methods Courses (MECU 3001, MECU 3031, and MECU 3032), which it's currently underway. Some of the transformative actions proposed were: (1) 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, (2) revise the course content in the Quantitative Methods courses: MECU 3001 (General Mathematics), MECU 3031 (Pre-Calculus), and MECU 3032 (Calculus), (3) creation of a website geared to the students enrolled in Quantitative Methods Courses to reinforce topics discussed in the classroom, and (4) strengthen the Quantitative Methods Courses tutoring program.

Assessment of Students' Effective Written Communication Skills in Spanish

During the 2014-15 academic year planning efforts to administer an effective communication writing skills in Spanish to the 2015-16 incoming class was programmed for the day in which enrollment analysis is schedule. Written communications with the Deans of Colleges and Schools whose facilities were going to be used to administer the test were sent to get authorization for the use of these facilities. Meetings with the Dean of Students, with the Registrar, with the Admissions Office, the Students Ombudsman, with the Dean of Administration and with the Campus Dean of Academic Affairs were held in issues related to the administration of this test. Students were invited to participate through a written communication sent through e-mail. Also, written communications to their home address and through the campus admission letter were also sent. All documents related to the test administration were prepared during the second semester of 2014-15 academic year, and already available for the administration of the test in August 2015, including contacting professors that accepted to help in the administration of the test.

A committee of experts from the School of Humanities, General Studies an Education participated in this effort. They were in charge of 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. A meeting was arranged in

order to validate the grading process among the 9 participating processors. Three triads were named. Each test was graded by two professors. In very few cases, a test needed to be graded by three professors.

It was decided that the test should be administered in August 6 2015, during the day in which the Institution schedules the course registration analysis of the upcoming academic semester. All the necessary steps for the administration of the test were discussed, planned and arranged with the personnel in charge. A communication was sent by mail and by e-mail to the incoming class to invite them to participate in this activity (Appendix IX). Also, during the Freshmen Orientation Week a reminder will be given by OEAE personnel to all students participating in this orientation. Results will be sent to students via their institutional email and findings will be discussed with pertinent academic units and faculty. Assessment results of this effort will be discussed in the next OEAE's Annual Report.

During the second semester of the 2014-15 academic year, a test was designed by Spanish professors from UPRRP, experts in Spanish language, to be used as an exit instrument to assess effective written communication skills as an exit instrument. This was done in order to assess their effective written communication skills in advanced courses as an exit measure to obtain information to be used in establishing what areas tend to improve over the course of their degree. It was administered in April 2015 to a sample of 800 students near completion of their baccalaureate degrees. In the sample participated students from all Campus Colleges and Schools. Professors of these courses dedicated one class session to offer this test in their courses period.

The assessment results were sent to the Spanish Departments of the Colleges of General Studies and Humanities for them to implement transformative actions to enforce the language areas (Theme and Structure and Orthography) where students' performance was low. The following table shows assessment results by criteria. All effective written communication in Spanish assessment results can be accessed at the OEAE webpage (http://oeae.uprrp.edu).

Table 4. Group Performance by criteria in the effective written communication test (Spanish) administered in April 2015 to a sample of students near completion of their undergraduate degrees

Group Performance by Criteria in the Effective Written Communication Test (Spanish) Administered in April 2015 to a Sample of Students Near Completion of their Undergraduate Degrees (N=800)		
Criteria	**Number of Students Who Obtained 66.25% or More**	**Percentage**
Theme and Structure	473	59%
Morph Syntactic Structure	606	76%
Lexical Mastery	698	87%
Orthography	329	41%
Total Essay Score	**601**	**75%**

Assessment of Students' Effective Written Communication Skills in English

As part of institutional efforts to assess writing skills in English, 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 the first semester of academic year 2008-09. The ELASH II test evaluates the following skills: listening comprehension, reading comprehension, and language use. The scores were categorized according to four levels: advanced, high intermediate, low intermediate, and novice. Scores on the test indicate that 89% of the students scored in advanced and high intermediate levels in listening comprehension, while 11% percent scored in the low intermediate and novice levels.

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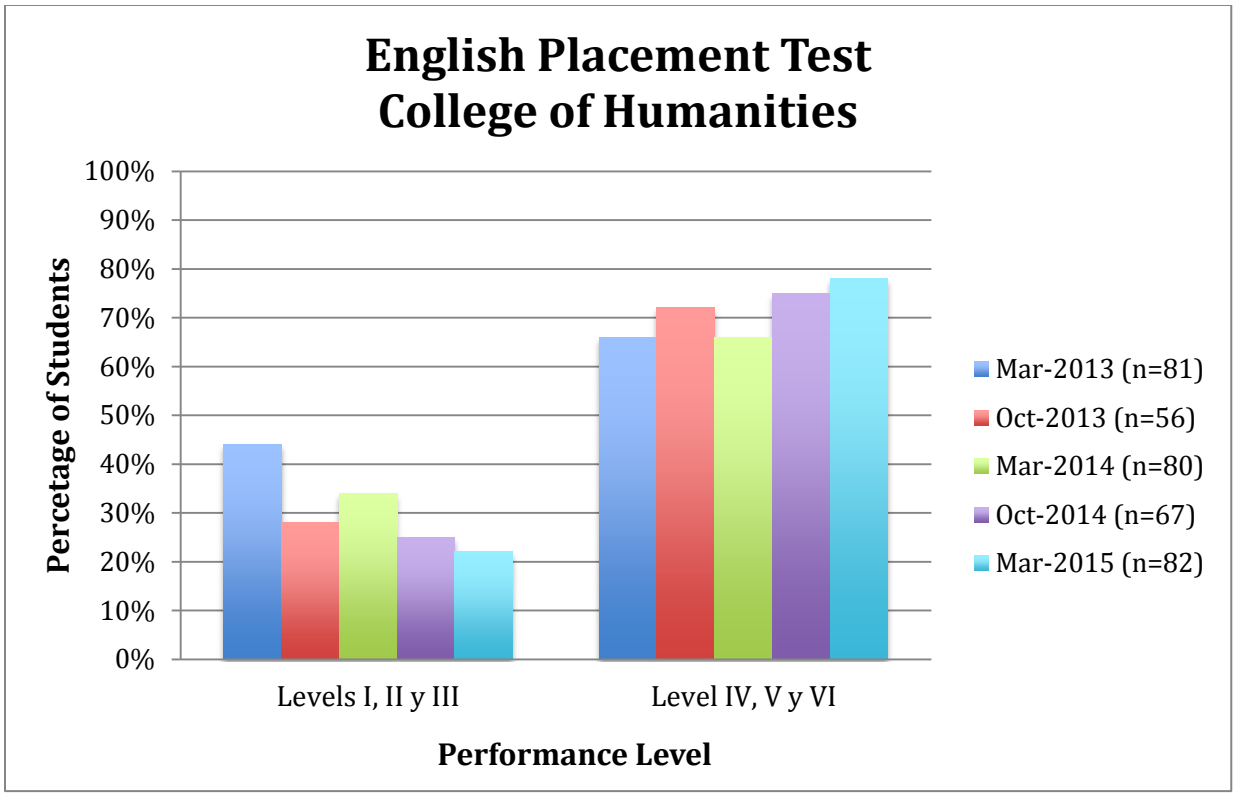
Another significant measure for assessing effective communication in English is provided by The English Department of the College of Humanities. This Department administers the Humanities English Placement Test (HEPT) for the evaluation and placement of undergraduate students into the most appropriate levels of

competency. This placement test is offered twice per academic year and aims the evaluation of skills such as written and oral comprehension and composition. Assessment results provided by this Department reveal that the majority of the students were placed at the highest levels courses. The next figure represents this result from March 2003 to March 2015.

Figure 2. Performance level of College of Humanities' students in the English placement test



The OEAE is planning, together with the College of Humanities, an administration of an exit test in advanced courses to assess English communication skills during the second semester of the 2015-16 academic year. Assessment results for both assessment efforts of this learning outcome at this level can be seen at OEAE webpage (http://oeae.uprrp.edu/).

Assessment of Student Learning at UPR- RP Academic Programs: Sixth Assessment Cycle

The 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 the academic community with 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 being reported on different OEAE Annual Reports and 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. The first stage of a five-years cycle ended in 2013-14. At this moment, the campus undergraduate and graduate programs are participating in the first cycle of the second assessment stage.

A. The Assessment Process in the UPR-RP Academic Programs

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 transformative actions should be submitted with the Annual Report.

Samples of Assessment of Student Learning Plans, Annual Reports, and Rubrics developed by UPR-RP professors and OEAE personnel are available in the OEAE official web page http://oeae.uprrp.edu 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.

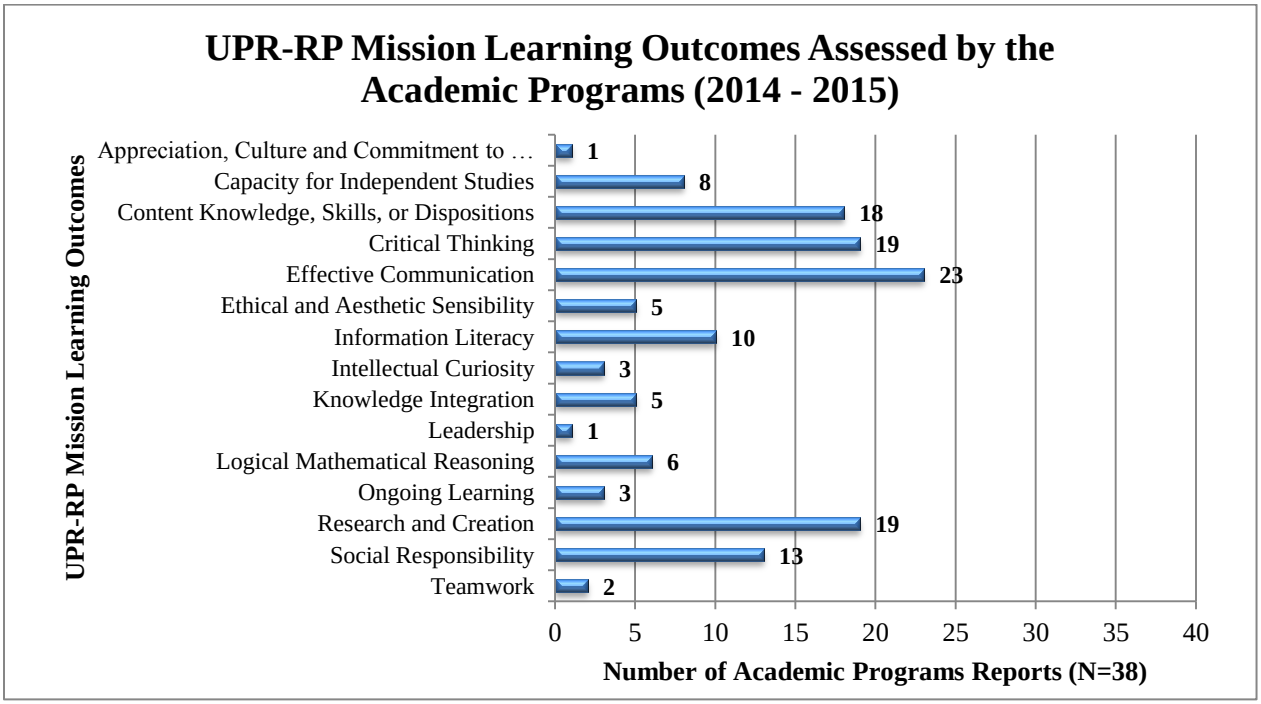
The undergraduate academic programs by College or School that participated in 2014-2015 assessment of student learning cycle is shown in Table 5. Although some academic programs have more than one academic offering, they hand in only one report per program. Those programs are: the Teacher Preparation Program of the Colleges of Education which consists consist of 23 different academic offerings based on the disciplines and level of educational offering, the English Program of the College of Humanities with two different academic offerings, and the History of the Americas and Europe Program also with two different academic offerings, both programs from the College of Humanities. All those programs hand in one Annual Report. The College of Business Administration includes nine departments in its annual report. The assessment data at the College and Campus level is gathered and analyzed from the Annual Reports handed to the OEAE.

Table 5. Number of undergraduate programs that participate in the Campus Assessment of Student Learning Process and number of Annual Reports they hand in to the OEAE

Colleges or Schools / Programs	Number of Programs	Number of Reports
College of Business Administration	**10**	**2**
1. Core Programs (BBA- 9 programs)	9	1
2. Office System Management	1	1
College of Education	**25**	**3**
1. Family and Community Education	1	1
2. Recreation	1	1
3. Teacher Preparation Programs (23)	23	1
College of General Studies	**1**	**1**
1. Interdisciplinary Program in General Studies	1	1
College of Humanities	**13**	**11**
1. Art History	1	1
2. Comparative Literature	1	1
3. English LICO & LITE	2	1
4. Fine Arts	1	1
5. Hispanic Studies	1	1
6. History of Europe & Americas	2	1
7. Interdisciplinary Studies	1	1
8. Modern Languages	1	1
9. Music	1	1
10. Performing Arts	1	1
11. Philosophy	1	1
College of Natural Sciences	**8**	**8**
1. Biology	1	1
2. Chemistry	1	1
3. Computer Science	1	1
4. Environmental Science	1	1
5. Interdisciplinary Program in Natural Sciences	1	1
6. Mathematics	1	1
7. Nutrition and Dietetics	1	1
8. Physics	1	1
College of Social Sciences	**9**	**9**
1. Anthropology	1	1
2. Economy	1	1
3. General Program	1	1
4. Geography	1	1
5. Labor Relations	1	1
6. Political Science	1	1
7. Psychology	1	1
8. Social Work	1	1
9. Sociology	1	1
School of Architecture	**1**	**1**
1. Environmental Design	1	1
School of Communication	**3**	**3**
1. Audiovisual Communication	1	1
2. Information and Journalism	1	1
3. Public Relations and Advertisement	1	1
Total	**70 Programs**	**38 Reports**

The number of undergraduate academic programs that assessed a student learning outcome is shown in the following Figure (Figure 3).

Figure 3. Undergraduate academic programs participation in the assessment of UPR-RP Mission Learning Outcomes assessed by in 2014-15



The low undergraduate program participation in six learning outcomes can be attributed to the difficulty encountered in designing adequate assessment instruments. Nevertheless, the institution considers that these leaning outcomes, from the actual student profile, should be acquired by the students throughout their baccalaureate experience. Therefore, the OEAE continues to encourage the assessment of these learning outcomes even though few programs can measure them.

The analysis of the assessment data by undergraduate academic programs and by Colleges or Schools and the summary of the results at Campus level received at the OEAE can be found in the Table of Assessment Findings and Transforming Actions by Colleges and academic programs for the 2014-2015 academic year. (Appendix X)

A similar assessment process is held at the graduate programs although a lower number of students learning outcomes are assessed. Also, the educational activities used are consonant with those required in graduate academic programs.

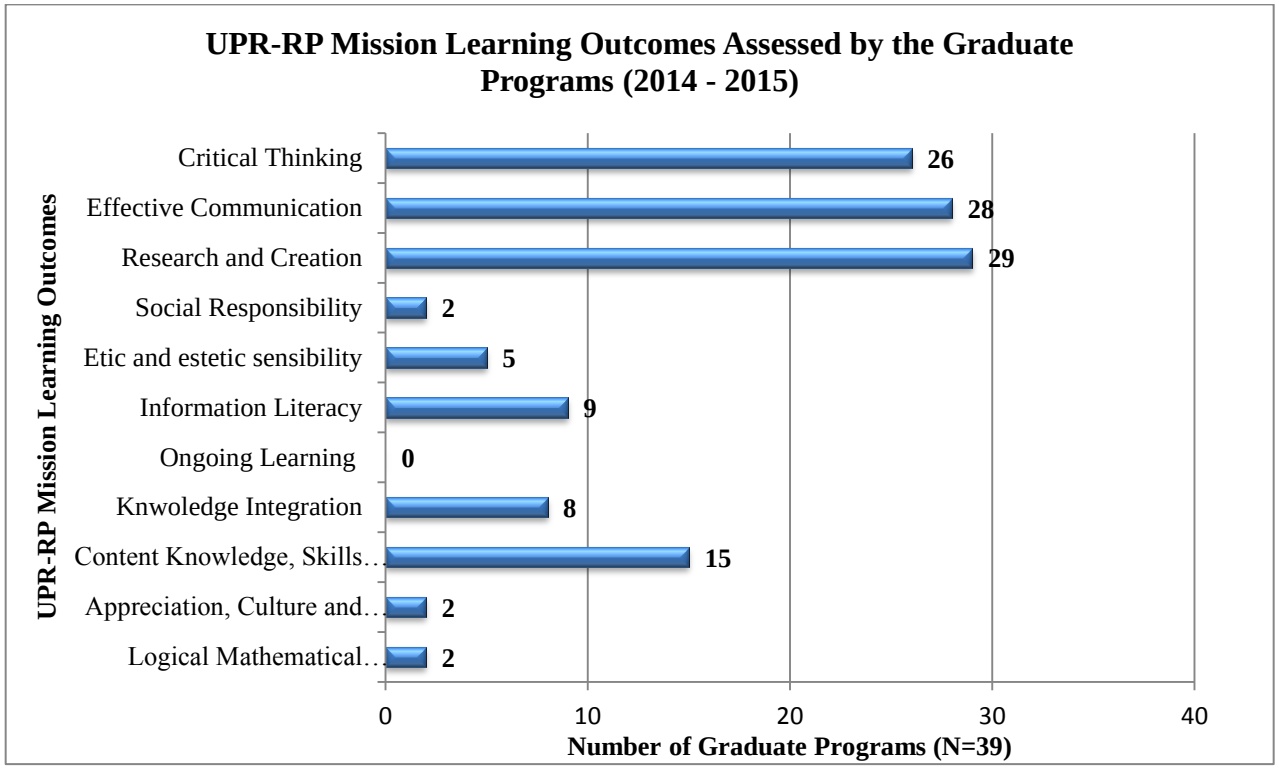
The graduate academic programs by College or School that participated in 2014-2015 assessment of student learning cycle is shown in Table 6. Most of the programs reports in the same report the master and doctoral levels.

Table 6. Number of graduate programs that participated in the Campus Assessment of Student Learning Process during 2014-2015

Colleges or Schools/ Programs	Number of Programs	Number of Reports
College of Education (EdD and MEd)	2	1
College of Humanities Comparative Literature (MA); Hispanic Studies (PhD and MA); Philosophy (MA); Cultural Management (MA); History (MA); Translation (MA)	7	6
College of Natural Sciences Biology (PhD and MS); Chemistry (PhD and MS); Environmental Science (PhD and MS); Mathematics (PhD and MS); Physics (PhD and MS)	10	5
College of Social Sciences Sociology (MA); Economics (MA), Psychology; (PhD and MA); Social Work (MSW); Rehabilitation Counseling (MRC)	6	5
School of Communication (MA)	1	1
School of Planning (MP)	1	1
Graduated School of Information Science and Technology (MIS)	1	1
Law School (JD and LLM)	2	1
Total	**30 programs**	**21 Annual Reports**

The number of graduate academic programs that assessed a student learning outcome is shown in the following figure.

Figure 4. Graduate academic programs participation in the assessment of UPR-RP Mission Learning Outcomes assessed by in 2014-15



The most common learning domains evaluated by graduate academic programs are Research and Creation (f=29), Effective Communication (f=28) and Critical Thinking (f=26). This year 50% of the participating graduate programs began to measure Content Knowledge and Skills.

B. Online Learning Assessment System (OLAS): An innovative online assessment of student learning approach

The OEAE together with the Chair of the Computer Science Program discussed the possibility of designing a web application that the professors and assessment coordinators could use to compile the assessment of student learning data gathered and to do the analysis of the assessment results. This idea was positively received by Dr. Carlos Corrada who taught the *Development of web-based applications course* (MATE 4996) and decided to use the idea as the semester project of the course. He divided the class in two groups of 4 students. Each group of four students met in various occasions with the OEAE staff to learned details and functions of the assessment of student learning campus projects. The final project was defended by each group and the best one was selected by a group of Program and College

Assessment Coordinators and by OEAE staff who served as jurors. The implementation of the project was postponed until 2014-15 since the OEAE was closed during 2013-14.

As a continuous effort to strengthen Campus Assessment of Student Learning, at the beginning of the 2014-15 academic year, the OEAE staff met with the Director of the DTTA office, Mr. Alfredo Figueroa, to discuss the need to implement on Campus the online assessment of student learning that resulted from the *Development of web-based applications* course (MATE 4996) during the 2012-2013 academic year. This was an initiative from the OEAE, to facilitate and modernize the Campus assessment of student learning process.

As a result of this conversation, a programmer was hired by this office; (Miss Camila Pérez) to develop and implement the web based assessment process. She was one of the students from the group who was selected as the ones who correctly understood the ongoing assessment process on Campus. Miss Pérez met with the OEAE staff to discuss the OEAE needs and expectations and reprogrammed the original course project to real campus situations. The needed information was provided by the OEAE and from the participating programs in the pilot project. A pilot project was scheduled to be implemented in the second semester of 2014-2015. Four undergraduate programs: Information and Journalism, Public Relations and Advertisement, and Core courses from the School of Communication, and Modern Languages from the College of Humanities, participated in this pilot project. Two graduate programs, Master Degree in Social Work and Master in Communication, also participated. All the professors from the above mentioned academic programs, who participated in the pilot project, assessed the OLAS project as very useful: it facilitates the data entry and the analysis of results, it is easy to manage and it provides immediate feedback of the assessment results.

C. Assessment of student learning results at the UPR-RP for the 2014-2015 academic year

The data presented in this OEAE report contains assessment data of the student learning outcomes for the 2014-2015 academic year, the first cycle of the second assessment stage. The Table of Assessment Findings and Transforming Actions by Colleges and Academic Programs in the Academic Year 2014-2015 (Appendix X) presents a summary of the learning outcomes assessed by Colleges or School and by undergraduate programs, the teaching activities or learning measures used to assess a learning outcome and the number of instances being assessed, and the proposed transformative actions. This table has been translated into English and published in the OEAE's official web site http://oeae.uprrp.edu.

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, 25 (66%) of the 38 undergraduate academic programs that hand in Program Annual Reports and 30 (77%) graduate programs participated in the 2014-2015 sixth assessment cycle with a total of 21 Annual Reports submitted. Figure 3 and Figure 4 present the learning outcomes that were assessed by the undergraduate academic and graduate academic programs, respectively, during the 2014-2015 academic year and the number of academic programs that assessed each one of them.

D. Discussion of Assessment Results – Assessment Findings and Transformative Actions – Sixth Cycle

Undergraduate programs

Findings and transformative actions from the assessment activities of the learning outcomes that most academic programs assessed during this academic year are presented in this section. 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). A complete detailed description of assessment findings and transformative actions of all learning outcomes assessed this year by undergraduate academic programs can be found in Appendix X– Table of Assessment Findings and Transforming Actions by Colleges and Academic Programs in the Academic Year 2014-2015.

Communication Skills Learning Outcome

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

From the 27 Annual Reports handed by the academic programs engaged in the assessment of student learning process, 23 informed the assessment of effective communication skills (85%). Of those programs, 19 (83%) reported positive learning outcomes results[1] in this competency according to expected results established by the programs. Seventeen programs (74 %) proposed transformative actions as a result of the assessment process.

Eleven programs (48 %) used at least two different activities to collect data, and 15 (65 %) of these academic programs reported having assessed this learning outcome in at least two instances. The majority of the programs used direct measures to collect data on this learning outcome. Assessment methods for competency

[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.

in written and oral communication are embedded in the discipline courses throughout the curriculum. Evidence of student ability to communicate effectively was assessed in the following activities: essays and oral presentations, research proposals, supervised practicum, laboratory reports, design projects, research article reviews, critiques, research papers and projects, among others.

As an example of a program that assessed this learning outcome, the Teacher Preparation program used written essays in a series of workshops called Writing Zones using a standardized rubric. The results indicate that in the communication competency, and on a four points scale the students achieved and average score of 3.42 (86 %), between the very good and outstanding level. Students' scores on the Puerto Rico Teacher Certification Test (PCMAS, for its Spanish acronym), developed and administered once a year by the College Board of Puerto Rico and Latin America office, were analyzed to assess teaching candidates' effective writing communication skills. This test is offered at the end of the bachelor's degree in order for students to obtain the Teacher Certification from the Puerto Rico Department of Education. It is considered an Exit Assessment Instrument that measure students' general education, basic knowledge, and communication competencies. In the Fundamental Knowledge and Communication Competencies section of the test, the students obtained 120 points out of 126 (95%).

Another example can be observed in the *Chemistry Program*. In this program the following criteria were assessed in research projects and laboratory reports: organization of content; sentence structure and coherence in paragraphs, and spelling, punctuation, and grammar. In each of these criteria the students obtained and average score between 80% and 100%. The faculty in charge of teaching the General Chemistry, the Biochemical Techniques, and Analytical Chemistry Laboratories recommended the following transformative actions:

- Students will be lectured on the various aspects in the rubric used to evaluate effective communication in their written report and oral presentations.
- Possible ideas to incorporate were suggested to students in the criteria where they exhibited lower performances.
- Students will be advised to register in several courses for improving writing skills.
- Creation of activities and the provision of spaces for students to expose original works in oral and written form.
- A poster exhibition of student research will be performed to assess the oral and written communication.

The *School of Communication programs* also assessed this learning outcome where assessment results also revealed very good to excellent performance in most of the criteria assessed, ranging between 75%

to 100%. The professors in charge of teaching the courses of the different programs recommend the creation of laboratory courses, creating prerequisite writing courses with zero credit, and establishing mentoring programs; the sequence of the course suggested should be specifically designed to reinforce student's oral and written communication skills. They suggest that the professor should spend more time on communication texts and reduce the time on the expository, descriptive, and narrative of the texts that set the curriculum of the course. Also, they recommend to include in the classroom more exercises linking image and word, multimedia critical speech, and accuracy of issues, approaches, and action schemes for the development of journalistic content. Although the expected outcome was achieved in all instances in which this learning outcome was assessed, the faculty feels there is a need to better comply with the expected student achievement in their written and oral communication skills.

A sample of transformative actions recommended by undergraduate academic programs to be implemented in the next assessment cycle (2015-2016) that resulted from the 2014-2015 assessment of the effective communication skills outcome, follows:

- *Art History Program*: Program courses in Art History must meet the requirements of a variety of written works such as monographs, essays, reviews, and criticism on topics relevant to the discipline. The tests must meet a component of discussion where questions can evaluate the ability of the student's performance in the Spanish language.
- *Fine Arts Program:* Discuss the principles of interpretation of contemporary art (hermeneutics) to develop analytical and communication skills. Require written and oral proposals on all courses in the first year presentations. A guide for collective criticism, verbs, keywords and references will be prepared for the next course session assessment. Reading and analysis of texts related to the arts, and writing essays on the artistic production is encouraged.
- *Environmental Science Program:* The program faculty recommended activities and provide spaces for students to expose original works in oral and written forms. A poster exhibition of student research will be performed to assess the oral and written communication, in the next academic year.

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, with the end goal of developing their own criteria.

Nineteen (70%) of the 27 annual reports handed in by the undergraduate academic programs indicate that their academic programs assessed critical thinking skills. Of those programs, 14 (74%) reported positive learning outcomes results[2] in this competency according to the expected results established by the programs. Fifteen programs (79%) proposed 33 transformative actions as a result of the assessment process.

Of the 19 programs that assessed this learning outcome, 14 (74%) reported positive learning outcomes results in this competency according to the expected results established by the programs. Eleven programs (58%) used at least two different activities to collect data, and 13 (68%) 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: supervised practicum, essay type questions, design of projects, laboratory reports, research article reviews, reflective critiques, research papers and projects, essays, research proposals, and exam questions, among others.

Examples of programs that assessed this learning outcome are:

- *Teacher Preparation program:* Through the portfolio of future teachers, the students incorporate critical reflection of their educational practice, their educational philosophy, and their projections as professionals in the field of education.

- *Biology program:* This program assesses students' critical thinking skills with a set of analysis questions from the first three partial exams. Students' critical thinking skills were evaluated through a set of questions that require the analysis of a premise or the interpretation of data. Each of the questions of the partial exams assessed the following main skills: identify the purpose of a situation applied nature; ability to formulate a hypothesis with scientific basis; synthesize a discussion/critical analysis around a biological problem or other area; and formulate conclusions and projections of a studied situation.

- *Labor Relation Program:* This program assessed students' critical thinking skills in a research proposal in which they measured: identification and interpretation of the arguments of the authors of the discipline and other fields; distinction and theoretical analysis of trends, paradigms and concepts of the discipline and other fields; distinction and analysis of the use of research

[2] 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.

methodologies; and application of theoretical trends, paradigms and concepts of the discipline and other fields to study social problems.

- *Information and Journalism Program:* In the Introduction to Strategic Research course students' critical thinking skills were assessed in a final research project through the following criteria: defends his views from the presentation and critical elaboration of different theoretical approaches to the topic; the justification of the problem is well supported and documented; in the theoretical framework discussion for the categories of analysis representative academic texts were used and not secondary sources; in the methodology section of the study agreement between the approach and data collection tools used is present and the content of the instrument to gather information and analyze text meets the needs of the investigation.

- *Political Science Program:* In the *Puerto Rican Political System* (CIPO 3035) course students' critical thinking skills were assessed in a mid-term test, answering essay-type questions regarding topics discussed in several chapters of the textbook used in class. Each of the essay-type questions of the mid-term test was assessed using the following criteria: Adequately addresses the issue of a question, essay, or oral discussion; Relates concepts properly and derives inferences and conclusions correctly; Explains observations and provides rationale for their explanations for applying what they learned effectively; Shows comparative (properly observes similarities and differences) and evaluative ability (can formulate hypotheses and evaluate cause and effect; Contributes their own original ideas, beyond the readings and the approaches of the teacher or other students.. The results showed that of the 33 students, 26 (79%) achieved the expected outcome, obtaining scores of 8 points or more in the rubric used.

As the result of the 2014-2015 assessment of student learning process regarding the critical thinking skills outcome, the following sample of transformative actions by academic programs will be implement in the next assessment cycle (2015-2016).

- *Teacher preparation program* - In the three meetings held during the teaching practice, more attention should have been paid to the initial assessment so the gaps in the full development of competition would have been identified, and adequate feedback for the second and third assessments would have been provided.

- *English program* - More emphasis should be given to developing analytical essays in the beginning level courses, to better prepare students for writing their essays in the LITE 3101

(Contemporary Literary Theory) course. Students should be better prepared in the beginning classes in order to successfully demonstrate mastery of the criteria for critical thinking.

- *Visual Arts program* - Greater emphasis will be given to the analysis of theoretical readings, and in the vocabulary development of three-dimensional visual arts. Greater emphasis will be given to the analysis of the works of artists from various fields and historical moments, so that it is applied to critical analysis of the work itself, and the work of others. Institutionalize critical group sessions of the course as a departmental major event and encourage the active participation of students and professors, with the aim of creating a criticism culture in the department will be strongly encouraged. Also, professors from other universities will be invited to participate in the criticism, promoting the development of critical thinking.

- *Political Science Program:* Create more formative assessment activities with the purpose of improving the understanding and skills of the students through the courses. Professors should emphasize more on the importance of the originality of the arguments proposed by students. Encourage students to develop original arguments in class, even though they may deviate from the topic under discussion.

Research and Creation Learning Outcome

Definition*:* Mastery of skills needed to design and conduct a systematic, objective, and critical investigation, be it 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 27 Annual Reports handed in by the academic programs that engaged in the assessment of the student learning process, 19 (70%) indicate that they assessed students' research and creation skills. Of those programs, 17 (89%) reported positive learning outcome results in this competency according to the expected results established by the programs. Fourteen programs (74%) proposed a total of 30 transformative actions in the assessment process of this leaning outcome.

Six programs (32%) used at least two different activities to collect data, and 10 (53%) 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 students' ability to

demonstrate research and creation skills was assessed through the following activities: laboratory reports, research article reviews, critiques, research papers and proposals, research seminars, oral presentations, art projects, undergraduate thesis, audiovisual chronicle, and building a media kit, 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.

Examples of programs that assessed this learning outcome are:

- *Biology Program:* During the assessment of the student learning process, it gathered information regarding this learning outcome in three instances each semester in the BIOL 3101 (General Biology Course), in BIOL 3350 (Genetics Laboratory) and in BIOL 3112 (Ecology Laboratory). A rubric was used in the courses to assess student's' research skills. In all three courses assessed results surpassed the expected outcomes.
- *Fine Arts Program:* As part of the process of creating a work of art; the search of thematic and conceptual concerns; the search of information, practical and theoretical references; the strategies to locate the information needed and how this research takes shape through a visual creation were assessed.
- *Political Science Program:* This learning outcome was assessed in the development of a research proposal using the following criteria: statement of the problem; research questions; contribution to the discipline; research design; sampling or selection of cases; operationalization of variables, among others.

As the result of the 2014-2015 assessment of student learning process regarding the research and creation skills outcome, the following sample of transformative actions by academic programs will be implemented in the next assessment cycle (2015-2016).

- *Fine Arts Program:* Artistic practice of students will be encouraged, particularly at the independent level; the creation of an internal Student Congress where students present their research to other students.
- *Interdisciplinary Program in Natural Sciences:* It is highly recommended the creation of at least one undergraduate level course, similar to the graduate seminar courses offered in the College of Natural Sciences, that will give students the opportunity to study the methodological and analytical structure of scientific peer-reviewed journals.

- *Political Science Program:* Integrating research with quantitative analysis methodology in other courses and seminars, in addition to the CIPO 4306 and CIPO 4307 courses of the program. Reinforce this knowledge at the beginning of the CIPO 4307 course in order to strengthen those content knowledge gaps that could remain from the CIPO 4306 course.
- *Audiovisual Communication program*: Reinforce research skills by offering short workshops at the Research Center of the School of Communication, such as: Reference search through the catalog; Writing documents according to APA, Construction Testing and Data Analysis style by Excel and SPSS.

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.

Thirteen (48%) Annual Reports submitted by the academic programs that participated in the assessment of the student learning process during the 2014-2015 academic year, indicate that they assessed the social responsibility learning outcome. Of those programs, 9 (69 %) reported positive learning outcome results in this competency, according to expected results established by the programs. Eight of the programs (62%) proposed transformative actions as a result of the assessment process of this learning outcome.

Six programs (46%) used at least two different activities to collect data, and another 7 (54 %) 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. Students' 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: informal assignments, questionnaires, case studies, tests, group discussions, critical reviews, , surveys, written press releases, among others.

An example of an academic program that assessed this learning outcome, is the ESGE 4141 course (*Puerto Rican Thought and National Reality*) where a rubric was used to assess the students' competencies in social responsibility skills from their judgment on the interpretations of thinkers and

artists on relation to the stages of human development. The criteria assessed were: article perceptions about the rules and prejudices of their culture; understanding the complexity of members of other cultures in relation to its history, values, policies, economics, and communication styles; developing its own perspective and demonstration of an ability to act in ways that support and recognize the feelings of another cultural group; Understanding cultural differences in verbal and nonverbal communication; formulating complex questions about other cultures and articulating answers that reflect multiple cultural perspectives; and the development of interactions with people from different cultures.

Another example of a program who assessed this learning outcome was the INGL4039 (*Shakespeare on Film*) in the English Program. The professor that taught this course used a rubric to assess if students ponder ethical responsibility skills in informal written assignment and oral presentations. It was expected that 80 - 90% or more of the students would obtain 3.4 points or more in each criterion assessed in the rubric used. The criteria assessed were: ethical self-awareness; understanding of different ethical perspectives or concepts with depth and clarity; ethical issue recognition when presented in a complex, multilayered context; recognition of cross-relationships among the issues; and application of ethical perspectives or concepts. Assessment results showed that the expected outcome was met in each one of the criteria assessed.

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 College Research Libraries - ACRL).

Ten academic programs' Annual Reports (37%) indicate that they assessed the information literacy learning outcome. Of the programs that assessed students' information literacy skills, 7 (70%) reported positive learning outcomes results in this competency according to the expected results established by the programs. Six programs (60%) proposed transformative actions as a result of the assessment process.

Six programs (60%) used at least two different activities to collect data, and 5 (50%) 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. Students' information literacy skills were assessed through the following activities: Project for the Integration of Information

Literacy to the Curriculum (PICIC project in the College of Education, by its Spanish acronym), undergraduate thesis, research projects, written assignments, research papers, research proposals, exams, course exercises, annotated bibliographies, online modules, oral presentations, laboratory reports, specifically designed information literacy exercises, among others.

Among the undergraduate programs that assessed students' information literacy skills are the *English and the Chemistry Programs*. These programs have placed an emphasis on developing students' information literacy skills as early as possible in their curriculum in order to prepare them adequately for advanced courses with a strong research component.

In *the English Program*, a rubric was used in the INGL 3232 (Expository Writing) course to assess the students' competencies in information literacy skills through formal and informal assignments and an oral presentation. The information literacy skills criteria assessed in the rubric were: definition of research needs (Identifying areas of concern; developing a research topic or question; defining the research scope); identification of information sources (Identify sources suited to rapidly changing information including newspapers, broadcast, teletext, databases, internet, e-mail); identify sources not suited to rapidly changing information (including books, CD-ROMs for job adverts, weather, or news); identify sources that are convenient and portable (including newspapers, maps, books); selection of sources (Making an appropriate selection of resources for the project at hand); interpretation of sources (finding primary, secondary, and tertiary sources); Ethical use of sources (Correct citation of sources according to the preferred style-sheet) . Assessment findings revealed that 100% of the students reached the expected outcome (80-90%) in each criterion assessed.

In the *Chemistry Program* a rubric was used in the QUIM 3001L (General Chemistry I Laboratory) course to assess students' information literacy skills based on an information literacy exercise (ILE) that evaluates science & technology information literacy outcomes based on selected American College and Research Libraries Standards (ACRL). The criteria assessed based on standards for science, engineers and technology students assessed were: determines the nature and extent of information needed; acquires information effectively and efficiently; critically evaluates information and sources, and decides whether or not to modify the initial query; understands the economic, ethical, legal, and social issues of the use of information and uses information effectively, ethically, and legally; and understands that information literacy is an ongoing process. Assessment results evidenced compliance with the expected outcome (70%) or more in each question. Findings were from 77% - 81 % in each of the 5 questions of the exercise. A similar exercise was used to assess the information literacy skills in the

QUIM 4865 course (Biochemical Techniques Laboratory) and findings revealed that students met the expected outcome (100%) in 5 of 6 questions.

As a result of the 2014-2015 assessment of student learning process regarding the information literacy skills outcome, the following sample of transformative actions by academic programs will be implemented in the next assessment cycle (2015-2016):

- *Teacher Preparation Program:* Develop a procedure for teachers of various courses of the program to provide support to students to attend workshops offered by the library and to provide follow-up to the students in the process of developing their information literacy skills. More attention should be given to the initial assessment so that gaps in the full development of competition would have been identified, in order to give adequate feedback toward the improvement of students outcome of these skills in the second and third assessments of this course. The inclusion of evidence on the development of information literacy skills should be evidenced in the Electronic Portfolio throughout the baccalaureate experience.
- *General Studies Interdisciplinary Program:* The program will offer workshops to students about information literacy skills and the proper use of technology systems.
- *Geography Program:* Include 4.5 hours in the syllabi of the courses to train students in information literacy skills.
- *Public Relations Program*: Additional time is spent in class to talk about the importance of evidence and correct citation. In addition, emphasis will be placed on the APA style.

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 will 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 18 out of the 27 undergraduate academic programs Annual Reports submitted (67%) engaged in the assessment of student-learning process, and assessed students' content knowledge, skills or dispositions related to their disciplines. Among those programs, 12 (67%) reported positive learning

outcome results in this competency according to the expected results established by the programs. Also, 15 programs (83%) proposed transforming actions as a result of the assessment process.

Eleven programs (61%) used at least two different activities to collect data, and 14 (78%) reported having assessed this learning outcome in at least two instances. All programs used direct measures to collect data on this learning outcome. Currently, all 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 gathered information regarding this learning outcome: exam questions, essays, comprehensive tests, electronic portfolios, art portfolios, teaching practicums, research-type essays, oral presentations, monographs, independent study projects, critical reviews, radio reports, press releases, press review, journalistic writing, audiovisual chronicle, radio and TV scripts, workshops, laboratory reports, among others.

As an example of a program that assessed this learning outcome, the *Art History program* used a rubric in the HART 3256 (Theory of Art) course to assess the students' competencies in content knowledge skills through a written work/essay. The students would demonstrate, through the methodology of the discipline, proficiency in the analysis, theory, and art criticism, as well as other components such as: description, content, vocabulary, and development of ideas, among others. The criteria assessed and its outcomes were: the topic was extensively discussed (90%); the references were correctly managed (80%), adequate use of vocabulary of the discipline (80%) and the ideas were well developed and organized (80%).

The *Chemistry Program* also assessed this learning outcome. A rubric was used in the QUIM 3001 (General Chemistry I) course to assess students' content knowledge, skills, or dispositions based in the questions of the final exam (N=112). The questions of the final exam assessed the following main areas knowledge of the discipline: Molecular and Atomic Structure; Stoichiometry, Reactivity and Dynamics; Thermodynamics and Equilibrium. There were two equivalent forms of the exam, with 45 multiple choice questions each. Results per area follows: Molecular and Atomic Structure - 23 of 30 items (77%) in Form 1, and 24 of 30 items (80%) in Form 2; Stoichiometry, Reactivity & Dynamics - 9 of 10 items (90%) in Form 1, and 9 of 10 items (90%) in Form 2; Thermodynamics & Equilibrium - 4 of 5 items (80%) in Form 1, and 5 of 5 items (100%) in Form 2.

Another example of a program that assessed this learning outcome, the *Public Relations and Advertisement Program* used a rubric in the REPU 4076 (Designing Producing Advertisements for

Radio, TV, and Print Media) course to assess if students use the content knowledge acquired in the course effectively in the final project (*an oral presentation*) in which they had to show their capacity to: apply and communicate, both at micro and macro level, their understanding of the importance of human differences and diversity in the development of the life experiences of a person; to present participants as people who are in a process of continuous learning; and in turn conceives participants and constituents as people who have the most knowledge about their own experiences; to demonstrate that they are self-regulating and aware of their biases and personal values and handle their influence by working with the diversity of participants and constituents in their professional practice. Findings revealed that the goal was met in every criteria assessed.

Another academic program that assessed this learning outcome was the *Environmental Science Program*. A rubric was used in the CINA 3005 (Introduction of Environmental Sciences) course to assess content knowledge, skills, or dispositions based on the questions of a final exam (N = 87). Five questions of the final exam representative of the contents of the discipline of environmental science in the following environment systems: Atmospheric Environment; Soil and Terrestrial Environment; and Water Environment were evaluated. Findings showed that the results met the expected outcome.

As the result of the 2013-2014 student-learning assessment process regarding the content knowledge, skills, or dispositions outcome, the following sample of transformative actions by academic programs will be implemented in the next assessment cycle (2014-2015):

- *Comparative Literature Program: Give m*ore emphasis to the development of knowledge specific to the discipline of Comparative Literature in the basic courses.
- *Fine Arts Program:* Emphasis on the workshop and application of the elements of three-dimensional design, based on the existing analysis. Identification of geometric, curvilinear, organic, and radial shapes. Agree on a schedule for evening and Saturday workshops. Request allocation funds from the university for the hiring of technicians specialized in plastic. Establish critical group sessions in all courses. Courses related to self-management of the visual arts will be created. Workshops will be provided to students during the semester with external resources specialists in related issues, to discuss in detail how to make a portfolio, how to apply for fund raising proposals, and participation in arts residencies. Revise and update the curricula of the ARTE 4982 course (*Creative Research Workshop 2*) . Art exhibitions and announcements, both for students and professors will be organized. The participation of students work outside the

institution will be encouraged. Exchange programs with other Colleges of Art at national and international level will be encouraged.

- *Chemistry Program*: The professors of the General Chemistry course identified the questions that did not meet the expected outcomes and discussed them in class, in tutoring sessions, or in practice sessions. Students were assigned new practice problems. The professors of the Organic Chemistry course for majors identified the questions that did not meet the expected outcomes, and discussed them in class, tutoring sections or in practice sessions.
    - *Geography Program:* Short reading comprehension tests will be administered in the GEOG 4500 (History and Philosophy of Geography) course to ensure that in the review of discussion tests, the students are answering correctly in the logical order of historical events. Include another criteria, Elements from a Map, in the rubric of the research project in the GEOG 4550 (Methods of Geographical Research) course to assess the inclusion of the following elements in the maps: Title; References (Credits); Scale; Map Projection; Legend, and North Arrow (Orientation).
    - *Audiovisual Communication Program:* In the next semester, the professor of the COPU 4136 course (Basic Media Writing) course will spend more time on communication texts and will reduce the time on the expository, descriptive, and narrative texts that set the curriculum of the course.
    - *Information and Journalism Program:* In the INFP 4001 (Journalistic Writing I) course to assess the students' competencies in content knowledge, skills, or dispositions in the academic program learning outcomes through journalistic writing, the creation of laboratory courses, prerequisite writing courses with zero credit, and establishing mentoring programs is suggested.

    More exercises linking image and word, multimedia critical speech; more exercises accuracy of issues, approaches, and action schemes for the development of a journalistic content will be included in the INFP 4001 (Journalistic Writing I) course. Reinforcement of research skills by offering short workshops at the Research Center of the School of Communication, such as: reference search through the catalog, writing documents according to APA, Construction Testing, and Data Analysis style by Excel and SPSS will be enforced in the ESIN 4077 (Introduction to Strategic Research) course.

E. Summary of Assessment Results for the 2014-2015 academic year (Sixth Assessment Cycle)

The OEAE has been encouraging the assessment coordinators to use more than one academic activity in order to evaluate the student learning in a specific learning outcome. Furthermore, they have been encouraged to measure student learning in more than one instance to corroborate the validity of the assessment results. Moreover, by these means the professors could show students their progress in the course in order for them to strengthen areas in which they are having difficulties.

Assessment results of the academic programs that evaluated student learning using multiple measures and instances and proposed transformative actions are detailed in the following table (Table 7).

Table 7. Number of undergraduate academic programs reports that used multiple measures and instances, and proposed transformative actions (2014-2015)

College or School* (Total number of the academic programs who participated in the assessment cycle)	**Participation** by College or School	**Number and Percentage of Academic Programs Reports that:**		
		Assessed the Learning Outcomes Using **Multiple Measures**	Assessed the Learning Outcomes Using **Multiple Instances**	Proposed **Transformative Actions** in at Least One Learning Outcome
Business Administration (0/2)	Did not participate			
Education (1/3)	33%	1 (100%)	1 (100%)	1 (100%)
General Studies (1/1)	100%	0 (0%)	0 (0%)	1 (100%)
Humanities (7/11)	64%	4 (57%)	6 (86%)	5 (71%)
Natural Sciences (8/8)	100%	6 (75%)	7 (88%)	8 (100%)
Social Sciences (5/9)	56%	4 (80%)	4 (80%)	3 (60%)
Architecture (0/1)	Did not participate			
Communication (3/3)	100%	3 (100%)	3 (100%)	3 (100%)

***** Thirty eight of the 70 academic programs on Campus hand in annual reports. Those academic programs that include more than program per report are:

Business Administration Core Programs (9) =1	Teacher Preparation Programs (23) =1	Total Academic Programs=70
English Linguistic & Communication and English Literature (2)=1	History of Europe and the Americas (2)=1	Total Annual Reports handed = 38

The number of undergraduate academic programs that assessed a student learning outcome and of those who met the expected outcome is shown in the following table (Table. 8)

Table 8. Assessment results by learning outcomes in the undergraduate academic programs (2014-2015)

Learning Outcomes	Number of Academic Programs* Who Assessed the Learning Outcome (N=27)	Number and Percentage of Academic Programs* Who Reached the Expected Outcome
Appreciation and Commitment to the values and Ideals of Puerto Rican Society, in Caribbean and International Context	1 (4%)	0 (0%)
Capacity for Independent Study	8 (30%)	7 (88%)
Content Knowledge, Skills or Dispositions Competencies in the Academic Programs	18 (67%)	12 (67%)
Critical Thinking	19 (70%)	14 (74%)
Effective Communication	23 (85%)	19 (83%)
Ethical and Aesthetic Sensibility	5 (19%)	5 (100%)
Information Literacy	10 (37%)	7 (70%)
Intellectual Curiosity	3 (11%)	3 (100%)
Knowledge Integration	5 (19%)	4 (80%)
Leadership	1 (4%)	1 (100%)
Logical - Mathematical Reasoning	6 (22%)	3 (50%)
Ongoing Learning	3 (11%)	3 (100%)
Research and Creation	19 (70%)	17 (89%)
Social Responsibility	13 (48%)	9 (69%)
Team Work	2 (7%)	2 (100%)

* Thirty eight of the 70 academic programs on Campus hand in annual reports. Those academic programs that include more than program per report are: Business Administration Core Programs (9) =1; Teacher Preparation Programs (23) =1; English Linguistic and Communication and English Literature (2)=1; History of Europe and the Americas (2)=1

Total Academic Programs=70 Total Annual Reports handed = 38

Represented in Table 8 are the assessment results of the undergraduate academic programs that assessed a learning outcome, and the number of those programs that met the expected outcomes. Two additional learning outcomes were added to the 13 learning outcomes already assessed during previous years: leadership and team work. Very few programs included the assessment of these learning outcomes in their Annual Plans. The OEAE personnel and Assessment Coordinators will encouraged among the faculty members and Program Coordinators the assessment of these important learning outcome since nowadays more hiring personnel are looking for these skills in the prospective employees.

The number of graduate academic programs that assessed a student learning outcome and of those who met the expected outcome is shown in the following table (Table. 9)

Table 9. Assessment results by learning outcomes in the graduate academic programs (2014-2015)

Learning Outcomes	Number of Academic Programs* Who Assessed the Learning Outcome (N=27)	Number and Percentage of Academic Programs* Who Reached the Expected Outcome
Appreciation and Commitment to the values and Ideals of Puerto Rican Society, in Caribbean and International Context	2 (5%)	2 (100%)
Content Knowledge, Skills or Dispositions Competencies in the Academic Programs	15 (38%)	14 (93%)
Critical Thinking	26 (67%)	24 (92%)
Effective Communication	28 (72%)	26 (93%)
Ethical and Aesthetic Sensibility	5 (13%)	4 (80%)
Information Literacy	9 (23%)	8 (89%)
Knowledge Integration	8 (21%)	7 (88%)
Logical - Mathematical Reasoning	2 (5%)	2 (100%)
Research and Creation	29 (74%)	28 (97%)
Social Responsibility	2 (5%)	2 (100%)

The previous table summarizes the assessment results of the graduate academic programs that assessed a learning outcome, and the number of those programs that met the expected outcomes. Eighty-percent or more of the graduated programs accomplished their expected outcomes.

OEAE's achievements in the 2014-2015 academic year

Due to administrative changes, the OEAE was closed during the 2013-2014 academic year. Nevertheless, a group of professors from the undergraduate academic programs of the Colleges of Education, Natural Sciences, School of Communication, Humanities and Social Sciences, continue assessing student learning in their programs. This effort is an evidence of a strong commitment of the faculty of these Colleges with the Campus Assessment of Student Learning process and with the developing of a culture of assessment in Campus. All the assessment activities programmed and achieved during the 2012-13 academic year that was handed in the Annual Reports by the Program Coordinators by the end of August 2013 and those corresponding to the 2013-14 period and handed in

August 2014, were analyzed, summarized and tabulated during the academic year 2014-2015 and 2015-16. They included:

- Revision and analysis of assessment results provided by the academic programs from the above mentioned Colleges or School. Aggregates of assessment results by College or School level and at Campus level, and the tabulation of this information was made. All this information is included in Tables1 of those reports. It is also included in Appendix X (Table of Findings and Transforming Actions by Colleges and Academic Programs in the Academic Year 2012-2013) and Table of Findings and Transforming Actions by Colleges and Academic Programs in the Academic Year 2013-2014) that presents a summary of the learning outcomes assessed by Colleges or School and by programs, the teaching activities or learning measures used to assess a learning outcome and the number of instances being assessed. These Tables are prepared from assessment data reported by each academic program in their Annual Reports and translated into English by the Research Assistant and revised by the Assessment Coordinator. Once finished it is published in the OEAE's official webpage.
- Tables 1 and 2 of the 2012-2013 and 2013-2014 academic years Annual Reports summarize by academic program and by College or School, the number of measures used, the transformative actions proposed, the instances in which they were met or not met, the programs that assessed a specific learning outcome and how many of them met the expected outcome. This information is published in the OEAE's official webpage, http://oeae.uprrp.edu.
- Writing the 2012- 2013 and 2013-2014 Student-Learning Assessment Annual Reports and publishing them in the OEAE's official website, http://oeae.uprrp.edu.
- The Office actively participated in writing Standard 14 information for the MSCHE Decennial Report and also helped in writing similar information for the Standard 12 of the above mentioned report. This webpage is continuously updated.
- During the first semester of 2014-15 meetings between the OEAE personnel and the Director of the Academic and Administrative Technologies Division, Mr. Alfredo Figueroa, were held to hire Ms. Camila Perez to be in charge of the implementation of the online assessment platform for the assessment of student learning. This platform was designed to match and comply with OEAE guidelines and specifications and was developed by a group of students of the MATH 4996 course (*Development of web-based applications*) of the College of Natural Sciences Computer Science Program. Necessary adaptations to the programming of the original classroom project were made in order to comply with the assessment of student learning process in the academic programs, training was given to the participating programs faculty and a pilot project for online assessment of student

learning was scheduled for the second semester. The project was named OLAS (Online Assessment Learning Service) and the pilot project began with the participation of 4 undergraduate programs, three of them from the School of Communication and one from the Modern Languages program. Two graduate academic programs, at the Master level, one from the School of Communication and the other from the School of Social Work also participated. Assessment results of this process for the participating programs are available at the http://oeae.uprrp.edu/ . The OEAE personnel is giving continuous training in the use of this electronic platform to the professors participating in the use of OLAS. New programs will be added each semester to this effort and training in the use of this program will be given to the new participating professors. OLAS provides the professor the opportunity to assess the criteria of one or more learning outcome at the same time that allows evaluation for grading the student performance in an educational activity using a specially designed rubric by the professor and Program Coordinator. Participating professors and Assessment Coordinators evaluated this platform as an innovative tool that facilitates the assessment of students learning process to the professors.

- OEAE facilities were improved and expanded to accommodate new personnel hired. An area next to the main office, consisting of 4 cubicles and two offices (one for the Undergraduate Program Assessment Coordinator and another for the Graduate Program Assessment Coordinator was set up according to the OEAE needs.

- A committee of experts to design a test to assess critical thinking learning outcome was named. An operational definition was discussed and established. Also, the criteria to be assessed were selected: Analysis, Interpretation, Evaluation, Argumentation and Synthesis. Writing test items on the different areas or criteria were assigned to each Committee member. The test items designed should be in the multiple choice format and one of them could be an open-ended question. A test proposal should be decided upon in a meeting held to that effect, by the end of the next academic year and a pilot project test should be administer to the committee members students in their courses.

- During the first semester of 2014-15 the OEAE planned and designed together with the Center for Academic Excellence, a Learning Assessment Cycle geared to new faculty members and to the campus academic community. Participation in workshops, conferences, and panel discussions included faculty members from this campus, from other UPR campus and from private higher education institutions. Activities programed included:

    - ✓ Workshops: The assessment of student Learning at UPR Río Piedras campus; Development of Rubrics to assess Research work by students; Development of Rubrics to assess critical

thinking; Development of Rubrics to assess students' ethics; Processing of Information to assess student learning using Excel.

- ✓ Discussion Forums: The Assessment of Student Learning Process in the Río Piedras campus; Challenges presented in the Assessment and Evaluation of Student Learning in the Río Piedras campus; Assessment of Student Learning in the UPR System; Role of the assessment and evaluation of student learning at private higher education institutions; The Assessment and Evaluation of Student Learning: implications for the students.
- ✓ Mini fair: A mini fair was held the last day of this Learning Assessment Training Cycle in which a series of assessment related workshops and activities were programmed. Coordinators from different Colleges and Schools undergraduate and graduate programs provided assessment related documents and answered individual concerns of the participants.

- OEAE personnel collaborated with the Center for Academic Excellence and other UPR campuses offering workshops, webinars and writing assessment related articles for their teaching and learning yearly offerings:

  <u>Webinars and Workshops</u>

  Assessment as a Tool for Reliable Student Learning Evaluation – (October 2014 at UPR Medical Sciences Campus)

  Designing and Creating Tests – (November 2014 at UPR Medical Sciences Campus)

  Validity and Reliability (December 2014 at UPR-Medical Sciences Campus)

  Student Learning Assessment Concepts - (February 2015 at UPRRP) – webinar

  Assessment of Institutional Effectiveness – (March 2015 at UPRRP)

  Rubric Design (April 2015 at UPRRP) – webinar

  The Development of Rubrics for Evaluating Critical Thinking Criteria - (August 2014 and April 2015 at UPRRP)

  Rubric design - (May 2015 at UPR Medical Sciences Campus)

- Two yearly general assessment meetings are scheduled for the Colleges and programs Assessment Coordinators.
- Meetings with the Campus Dean of Academic Affairs and with the Chancellor were held to communicate the status of the assessment of student learning on campus, the new electronic platform to facilitate the assessment of student learning on campus and the rate of obtaining results information, and to ask for support from their offices to encourage Deans, Department Chairs, and

faculty for a stronger commitment and participation in the assessment process and hence, to continue strengthening the culture of assessment on campus.

- The OEAE webpage was developed by the Assessment Statistics Analyst, Ms. Arlene Fontánez guided by Campus webmaster, Mr. José Camacho. This webpage contains all related assessment information and documents pertaining to assessment efforts at UPRRP in undergraduate and graduate programs. It also has assessment related information and rubrics database to help professors in this endeavor. It also includes assessment information of those programs that participated in the pilot project of the electronic based assessment platform, Online Learning Assessment System, (OLAS)

Evaluation of the services provided by the Office of Student Learning Evaluation

As part of the self-study an online questionnaire was designed and administered to the learning assessment coordinators in order to evaluate the effectiveness of the Office of Student Learning Evaluation (OEAE, by its Spanish acronym) in promoting student learning assessment in the campus (undergraduate and graduate levels). The questionnaire was designed in Google Drive and an invitation to participate was sent on October 15, 2014 to a total of 59 Assessment Coordinators from undergraduate and graduate programs. By November 30, 2014 a total of 36 responses were received. The response rate was 61%.

The responses received in the questionnaire indicate high satisfaction levels, among the participants, with the services offered by the OEAE. The distribution of the evaluation for the services provided by the OEAE is shown in the following table. All the services included in the questionnaire are provided as requested by the program or college coordinators. For this reason some of the services reflect high scores in the last column (I did not received the service).

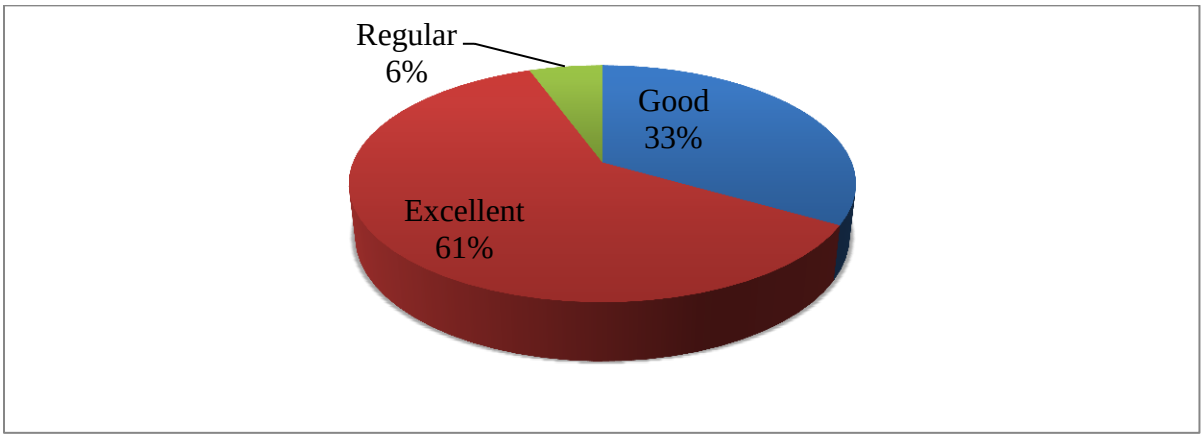
Table 10. Evaluation of the services offered by the Office of Evaluation of Student Learning (n=36).

Service provided by the OEAE	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	I did not received the service
1. Orientation of the learning assessment process in the campus.	25 (69.4%)	10 (27.8%)	-	-	1 (2.8%)
2. Review of Assessment Plans developed by the academic programs.	18 (50.0%)	11 (30.6%)	1 (2.8%)	-	6 (16.7%)
3. Assistance in the identification and writing of learning objectives.	18 (50.0%)	9 (25.0%)	1 (2.8%)	-	8 (22.2%)
4. Workshops and training.	22 (61.1%)	10 (27.8%)	1 (2.8%)	-	3 (8.3%)

Service provided by the OEAE	Very Satisfied	Satisfied	Unsatisfied	Very Unsatisfied	I did not received the service
5. Organized activities and meetings to improve the assessment considering the needs of the assessment coordinator or academic director.	17 (47.2%)	9 (25.0%)	1 (2.8%)	1 (2.8%)	8 (22.2%)
6. Technical support in the design of assessment instruments such as rubrics and questionnaires among others.	17 (47.2%)	11 (30.6%)	1 (2.8%)	-	7 (19.4%)
7. Assistance and orientation about the process of the analysis of findings.	15 (41.7%)	10 (27.8%)	1 (2.8%)	1 (2.8%)	9 (25.0%)
8. Help in the elaboration of the preliminary and final Assessment of Student Learning Reports.	13 (36.1%)	9 (25.0%)	1 (2.8%)	1 (2.8%)	12 (33.6%)
9. Facilitation of available resources for the assessment process.	22 (61.1%)	10 (27.8%)	2 (5.6%)	-	2 (5.6%)
10. Inform the university community about the learning assessment findings in the Campus.	9 (25.0%)	15 (41.7%)	2 (5.6%)	2 (5.6%)	8 (22.2%)

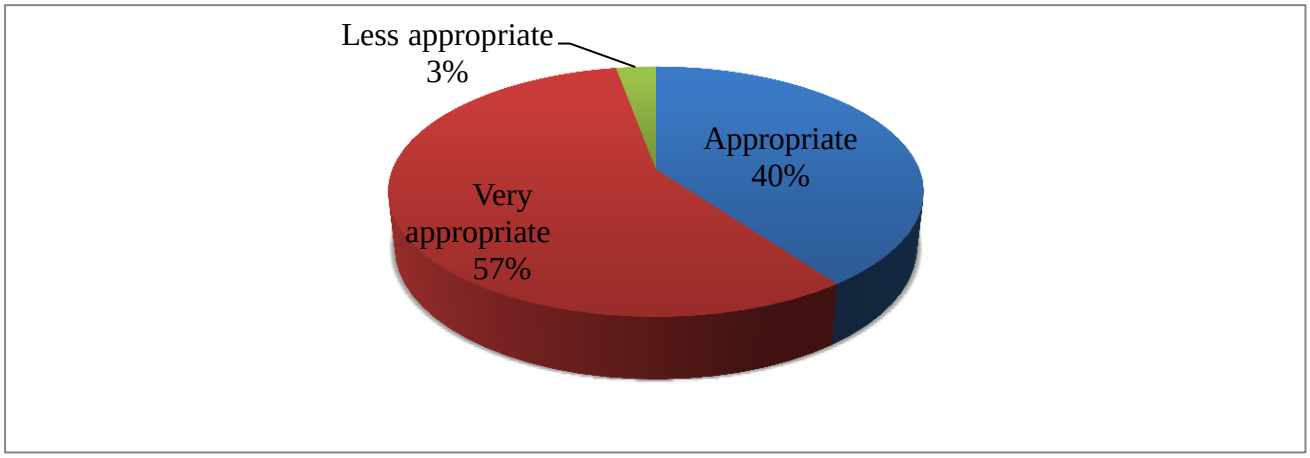
The administered questionnaire also included a question to explore the general perception of the services provided. Services rendered by the OEAE were classified as **excellent** and **good** by 94% of the respondents, as can be inferred by the following figure.

Figure 5. Evaluation of the quality of the services offered by the Office of Evaluation of Student Learning (n=36).



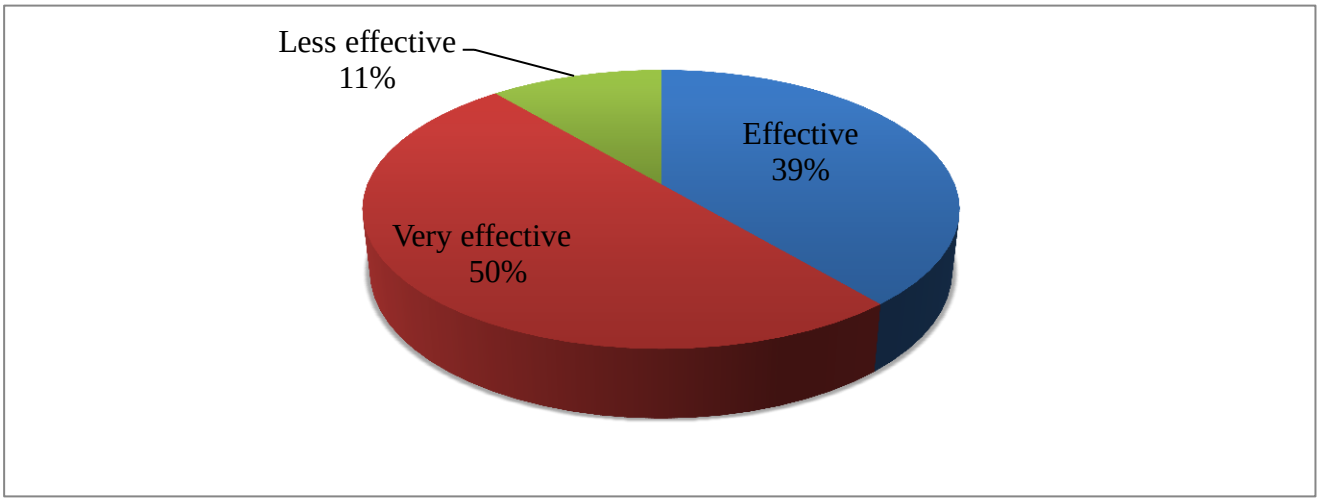
Ninety seven percent of the respondents indicated that the activities organized were **very appropriate** and **appropriate** as can be seen in the following figure.

Figure 6. Evaluation of the appropriateness of the activities organized by the Office of Evaluation of Student Learning to promote and support student learning assessment (n=36).



Eighty nine percent of the respondents classified the effectiveness of the activities organized by the OEAE to promote and support student learning as **very effective** or **effective** as can be seen in the following figure.

Figure 7. Evaluation of the effectiveness of the activities organized by the Office of Evaluation of Student Learning to promote and support student learning assessment (n=36).



Highlights of improvement of the Students-Learning Assessment in Undergraduate Academic Programs at the UPR-RP Campus

So far, assessment results of student learning submitted in the Annual Reports by the academic programs that participated in the assessment process during 2013-2014, even though the Office was closed during this year, an improvement can be seen when assessment reports were analyzed by the OEAE staff during the 2014-2015.

- An increase can be seen in the number of faculty members participating in the assessment processes of most academic programs that participated in the process.
- More efficient assessment reports are handed-in in terms of the presentation of results gathered, in the increase in the percentage of criteria that met the expected outcome, in the implementation of transformative actions proposed from previous years' assessment efforts, and in the identification of the needed transformative actions to attend to the student learning deficiencies identified.
- More efficient assessment instruments are designed by the professors.
- More instances in which the learning outcomes are assessed, and the use of multiple measures by a higher number of academic programs that do not require budget allocations, are evidence of an increased commitment with the assessment processes from the faculty members.
- Most of the transformative actions that are implemented at the program level do not require budget allocations.
- More interest in student outcomes and in ways to improve them can be perceived in the different academic programs.
- A webpage is under continuous construction to inform the academic community about the Campus Assessment of Student Learning process. Assessment results at the three assessment levels on Campus: at the entry level at the College of General Studies, at the Institutional level, and at the undergraduate and graduate academic programs level are available at this webpage. It also contains information related to services provided by the OEAE, assessment instruments available at the OEAE for different learning outcomes and useful links, information to be handed yearly at the OEAE by the Assessment Coordinators, general recommendations to improve the assessment gathering and interpretation of results, among others.

Highlights of improvement of the Students-Learning Assessment in Graduate Academic Programs at the UPR-RP Campus

This academic year the graduate programs assessments were incorporated as part of the OEAE. During this period all the programs began to use this office templates and forms for the submission of relevant information. The following list shows some highlights of improvements in graduate programs:

- The number of faculty members and courses participating in the assessment processes increased during the academic year 2014-2015.
- Most of the graduate programs designed and implemented assessment instruments for measuring the students' performance in qualifying exams and thesis.
- The professors designed more efficient assessment instruments and more professors were incorporated in the designing process.
- Some academic programs are homogenizing the instruments used for different sessions of the same course.
- Two graduate programs were incorporated in the pilot study for OLAS implementation.

Prospective Plans

In order to continue supporting and promoting an ongoing culture of assessment, the OEAE staff must attend to the following situations or strongly consider the following recommendations as part of the prospective plans for the following year:

- Ask each academic program to assess the assessment process going on in their academic programs including the Curricular Matrix and the Five Year Plan as a result of last assessment cycle results and experience.
- Ensure that each academic program will implement transformative actions resulting from this year's assessment processes (2014-2015) in next year's (2015-2016) assessment plans.
- Implement the online assessment pilot project (OLAS) in at least six more undergraduate and graduate academic programs.
- Continue improving the OLAS online project to assess the educational activities in more than one instance. Also, to include pilot project' users recommendations.
- Administer the effective written communication in English test to a sample of senior students enrolled in advanced courses to provide a uniform way to gather information about graduating candidates' effective written communication in English skills.

- Strongly recommend the use of multiple measures in multiple instances for each learning outcome assessed to ensure that students are provided with sufficient opportunities to achieve the expected outcome.
- Include learning objectives in the course syllabus of those student learning outcomes to be assessed in the course.
- Recommend undergraduate academic programs to include effective communication, critical thinking, social responsibility, research, and information literacy skills in next year's Assessment of Student Learning Plans, if they had not measured these learning outcomes in previous years' assessment cycles or want to reinforce student learning of these skills.
- 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 (2015-2016) after implementing the proposed transformative actions.
- Recommend undergraduate academic programs to assess group work and leadership as discipline related skills in the 2015-2016 assessment of student learning cycle.
- Ask academic programs to assess student learning outcomes by criteria.
- Enforce the use of a uniform rubric to assess a learning outcome in more than one course of the academic program.

Recommendations for strengthening the Student-Learning Assessment process in the undergraduate and graduate academic programs of the UPR-RP Campus

To strengthen the Assessment of Student Learning process at the undergraduate and graduate programs:

- The Campus needs the Office of Assessment of Student Learning to be staffed by a full-time Director, one Full-time Undergraduate Assessment Coordinator, one full-time Graduate Coordinator, a full-time Statistics Analyst, at least one Research Assistant from the School of Education Ph.D. Program and another one from the Translation Master Program, a part-time secretary, and three students from the Work and Study Program to provide the much needed assistance to the professors in this endeavor. The OEAE is in charge of the assessment efforts of 70 undergraduate and 39 graduate programs in UPRRP Campus.
- A proven and sound commitment with the Campus Assessment of Student Learning process is needed from the upper level administration, Deans, Associate and Assistant Deans, and Department Chairs from all Colleges and Schools by:
    - Allotting funds for Assessment Coordinators or release time for this endeavor if a genuine, thorough, and reliable process is expected.

    - Requiring the dissemination of assessment activities and results of the academic programs in faculty meetings, departmental meetings, conferences, Student Council activities and electronic pages.
    - Supporting the participation of faculty members in national and international assessment workshops and conferences.
    - Evidencing the existence of a solid and responsible administrative support to the assessment of student learning process.
    - Supporting the enforcement of curricular activities drawn from the transformative actions recommended to improve student learning
    - Providing or facilitating the activities geared to improve student learning.
- Assign funds to support the continued implementation of the online assessment of student learning project (OLAS) to facilitate and modernize the Campus assessment process. Also, to support the need to hire another programmer (by the DTTA) to provide much needed assistance to the actual programmer, Camila Pérez, initially in charge of this project, as more academic programs show interest in participating in the electronic assessment of student learning.
- Increase the number of persons (professors and students) that participate in the assessment of student learning process in each undergraduate and graduate academic program through the deans', and department chairs commitment.
- Ensure that the Assessment of Student Learning Plans include an increase in the number of courses assessed in each academic 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 Campus commitment with the implementation of transformative actions proposed by different academic programs that are the result of years of assessment of student learning efforts.

So far, after the end of the sixth assessment cycle, evidence of student achievement rendered by the undergraduate and graduate programs that participated in the Campus Assessment of student learning demonstrate a significant improvement in student learning and a solid academic preparation at the baccalaureate degree level. Also, a strengthening of an assessment culture on Campus can be observed.

List of the Appendices

- Appendix I – http://oeae.uprrp.edu/wp-content/uploads/2015/09/c-01-2014-2015-Institucionalizacion-Oficina-Avaluo-del-Aprendizaje-Estudiantil.pdf
- Appendix II – http://oeae.uprrp.edu/wp-content/uploads/2015/09/Appendix-I-Evaluation-of-Student-Learning-Plan-Approved-by-the-Academic-Senate-in-April-2006.pdf
- Appendix III – http://oeae.uprrp.edu/?page_id=906
- Appendix IV – http://oeae.uprrp.edu/wp-content/uploads/2015/09/Appendix-VI-Undergraduate-Curriculum-Review-at-the-Rio-Piedras-Campus-Profile-of-the-Baccalaureate-Graduate.pdf
- Appendix V – http://oeae.uprrp.edu/?page_id=868
- Appendix VI – http://oeae.uprrp.edu/?page_id=111
- Appendix VII – http://oeae.uprrp.edu/wp-content/uploads/2015/09/OEAE_PICIC_BSIH_2014-2015.pdf
- Appendix VIII – http://www.ala.org/acrl/standards/infolitscitech
- Appendix IX – http://oeae.uprrp.edu/wp-content/uploads/2015/09/Copia-Carta-para-estudiantes-prueba-de-redaccion-2015.pdf
- Appendix X – http://oeae.uprrp.edu/wp-content/uploads/2015/09/LINK-2014-15-Table-of-Assessment-Findings-and-Transforming-Actions-by-Colleges-and-Academic-Programs.pdf