Monitoring Report to the
Middle States Commission on Higher Education
from

UNIVERSITY OF PUERTO RICO AT AGUADILLA
PO BOX 250160,
AGUADILLA, PR 00604-0160

Prepared by

Prof. Diana Ruiz
Dean of Academic Affairs
e-mail: dianaruiz04@yahoo.com

Prof. Awilda Meléndez
Chair, Outcomes Assessment Committee
e-mail: a_melendez_upr@hotmail.com

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Subject of the Follow-up Report

Monitoring report "documenting further development and implementation of a comprehensive plan for the assessment of student learning including the establishment of learning goals at the program and course levels."

Date of the Evaluation Team's Visit: October, 2000

Chair of the Evaluation Team: Dr. Eida Berrios

INSTITUTIONAL OVERVIEW

The University of Puerto Rico is a public-supported higher education system serving around 70,000 students at eleven (11) academic units, of which the University of Puerto Rico at Aguadilla (UPR-Aguadilla) is one. This institution, a 4-year university college, was established in 1972 as a two-year regional college. It serves over 3,000 Full-Time-Equivalent students, of which 70% seek a bachelor's degree, 21% seek transfer, 5% are associate degree students, and the remaining 4% are students registered for professional improvement. The institution also offers educational services to many non-degree students and organizations through the Division of Continuing Education and Professional Studies.

UPR-Aguadilla's most recent on-site evaluation for accreditation occurred on October, 2000. On March 2001 the Commission on Higher Education reaffirmed accreditation and commended the institution for its Self-Study Report. Also, the Commission requested a follow-up report "documenting progress in the implementation of a comprehensive outcomes assessment plan including student learning outcomes." Following the report the Commission requested a monitoring report by October 1, 2004, "documenting further development and implementation of a comprehensive plan for the assessment of student learning including the establishment of learning goals at the program and course levels." The due date was extended to November 1, 2004. This report is in response to that request.

LEARNING OUTCOMES ASSESSMENT AT UPR-AGUADILLA

Assessment Plans and Coordinating Efforts

During the past few years the University of Puerto Rico at Aguadilla has been moving toward direct learning assessment as opposed to using indirect measures. Since last year our focus has been to emphasize manageable classroom assessment projects. At the time of the writing of the May, 2003 follow-up report 11 new projects had been initiated. Of these, 5 were successfully completed, whereas 6 were not. Both the successes and the failures have brought about valuable lessons. The first, that projects with well-defined objectives and good faculty management are doable, and that a certain group of faculty members are willing to undergo the extra efforts; the latter that assessment projects require adequate follow-up, and some faculty still need extra motivation, training, and counseling while completing their projects.

On October, 2003, the Academic Affairs Office constituted the Institutional Learning Outcomes Assessment Committee—from heron referred to simply as the Assessment Committee—with 7 faculty members, including the Academic Affairs Dean. The Assessment Committee is charged with the responsibility of updating the assessment plans, providing follow-up to projects, coordinating training activities, and providing guidance and mentorship to faculty. In recognition of the importance and responsibilities that is entailed in this committee's work, the Coordinator has been granted a three-credit release off regular duties.

In the process of updating the assessment plans, the Assessment Committee took stock of previous planning documents. The General Assessment Plan, Level I, approved in 1996, established the conceptual framework for academic outcomes assessment. As such it

is still a valuable reference. On the other hand, the General Assessment Plan, Level II, approved in March 1998 is mostly geared towards program assessment. As such it is still applicable, but not very useful for classroom based assessment. Thus, it was necessary to adopt a new plan which we term General Assessment Plan, Level III. This plan is centered on guidelines for classroom and program based assessment. It promotes projects that center on the teaching-learning process and its outcomes. All three plans are available on the newly established assessment website for UPR-Aguadilla: URL: http://cetemhost.uprag.edu/prof/avaluo/.[1]

Course Level Assessment

As mentioned, during the academic year 2003 – 2004, the Assessment Committee focused its efforts on simple projects at the course level. As a first step, the committee published *Manual de Técnicas de Avalúo de Aprendizaje* to assist those faculty members submitting projects. This guide includes descriptions of the recommended sections for a project proposal, examples of learning objectives, examples of learning assessment techniques and a set of Internet resources. On February 10 and 12, 2004, the committee presented the proposal guidelines to the faculty. As a result, 33 project proposals were submitted to the Assessment Committee's attention. Given our experience with last year's proposal efforts, we do not expect all 33 proposals to materialize into feasible projects, but a good proportion will.

We have had mixed results with our classroom project approach. Of the 11 projects initiated, about half (5) rendered workable results, providing good feedback to promote modifications that are expected to improve teaching and learning in the courses involved. The other half, however, were not completed. Three of these were attributed to

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[1] Still in the early developmental stage.

technical difficulties during implementation. They were related to web-based teaching. The others were attributed to procedural difficulties. In essence, the Assessment Committee acknowledges that despite having received education and training on several assessment areas, some faculty members still face difficulties in defining and establishing evaluation and assessment activities, as well as writing measurable learning objectives. There are also implementation issues that have to be addressed both from a technical as well as from a management perspective.

To address these difficulties, the committee has held individual and small group meetings to provide further assistance and feedback. Also, its recent Internet site (http://cetemhost.uprag.edu/prof/avaluo) provides easy access to supporting materials. On this site, faculty can find a proposal guide, an example of a completed proposal, a questionnaire template to get information on the student profile, and links to Internet resources. This site is in the early developmental stage. Major modifications are to be expected during the following months.

As a result of the February, 2004 meetings, faculty members submitted 33 projects. At present, 26 (Table 1) are in progress and, hopefully, the majority of these will produce results by May, 2005. The Assessment Committee will monitor these projects so as to provide guidance, technical assistance, and motivation to continue, as needed.

Table 1 –Learning Outcomes Assessment Projects, 2003-2004

Professor	Department	Assessment Objective and Strategy
Wanda I. Crespo	Business Administration	**Objective** Students will be able to apply public relations debate techniques to present, discuss and accept differences in opinions related to situations they will face in their work places. **Strategy** Based on a rubric, students will be judged on the ability to support their arguments and to manage differences in opinions.
Damaris Hernández	Business Administration	**Objective** Given a list of brand strategies, the student will be able to explain the advantages and disadvantages of each one. **Strategy** The comprehension of the strategies will be evaluated by using Direct Paraphrasing assessment technique. The instructor will review the topics in additional class sessions if more than 25% of the students were not able to explain the concepts.
Edna Pérez	Business Administration	**Objective** Students will be able to compare sequential, decision, and repetition instructions used in Visual.NET. **Strategy** The student's comprehension will be evaluated by using the Direct Paraphrasing assessment technique. The instructor will review the topics if more than 30% of the students are not able to make appropriate comparisons.
William Muñiz	Business Administration	**Objective** The student will be knowledgeable of the basic techniques to communicate data between computers. **Strategy** The instructor will give follow up based on the results of a questionnaire design to identify knowledge level reached by the students.
Ivelisse Vega	Business Administration	**Objective** Students will demonstrate the ability to do collaborative work. **Strategy** Based on a rubric, students will be judged on the quality of their work on a group-based project which involves presenting an oral and written report on their results.

Professor	Department	Assessment Objective and Strategy
Moisés Cordero	Natural Sciences	**Objective** Students will be able to make effective use of the microscope. **Strategy** Direct observation of student using the microscope. A checklist will be used to judge the degree of performance.
Sandra Pérez	Education	**Objective** Students will be able to apply critical thinking techniques. **Strategy** Based on a rubric, students will be judged on their critical thinking ability in managing classroom eventualities.
Nydia Ugarte	Education	**Objective** Students will be able to increase their academic performance and satisfaction with the course by working in groups. **Strategy** Based on a questionnaire and grades, the instructor will judged the effectiveness of teamworks.
Sigrid Sánchez	Education	**Objective** Students will be able to apply critical thinking techniques on areas related to education. **Strategy** Based on a rubric, the instructor will judge the student's abilities.
Nidza Márquez	Education	**Objective**: Students will develop positive attitudes towards handicapped students. **Strategy** Using a questionnaire, initial perceptions and attitudes will be gauged. At the end of the course, based on a rubric the instructor will judge changes in student perceptions and attitudes towards handicapped students.
Awilda Meléndez	Electronics	**Objective** Given an instruction data sheet and a simple assembly language program for the microcontroller 68HC11, students will be able to execute the program, manually establishing memory location, and register contents. **Strategy** Based on a rubric, the instructor will judge student's performance.

Professor	Department	Assessment Objective and Strategy
Edma Báez	Electronics	**Objective** Students will be able to define inductance to their peers. **Strategy** Based on the Direct Paraphrasing Technique, the instructor will judge the knowledge and abilities of the students to explain the concept of inductance.
Teresa Rivera	Electronics	**Objective** Students will be able to design a Visual Basic interfase to communicate data through the computer parallel port. **Strategy** Based on direct paraphrasing technique, the instructor will judge the knowledge and abilities of the students to express ideas or concepts.
Edgardo Desardén	Electronics	**Objective** Students will be able to design a program for a programmable logic controller that controls a process. **Strategy** Based on a rubric, the instructor will judge the students' performance.
Snaider Rivera	Electronics	**Objective** Students will be able to effective solve line transmision problems using the Smith Chart. **Strategy** Based on minute paper technique, the instructor will judge the student's performance to solve problems.
Leticia Ruiz	Spanish	**Objective** Students will develop their writing skills to a level that will allow them to publish an article in a magazine geared towards the general public. **Strategy** Each student will be required to write an article—on a theme of his/her choice—judged by the instructor to be of adequate quality to merit publication in the academic magazine *Identidad*.
Mayra Acevedo	Office Systems	**Objective** Students will be able to evaluate personal and notebook computers based on their characteristics. **Strategy**. Based on a rubric, students will be judged on their performance.

Professor	Department	Assessment Objective and Strategy
María A. Ortiz		**Objective** Students will be able to write a simple memorandum at least at a rate of 12 words per minute. **Strategy**. Based on minute paper technique, instructor will provide feedback to the students. Also, a rubric will be used to judge the student's performance.
Elba Cordero		**Objective** Students will be able to add tables, graphs and watermarks in electronic documents. **Strategy** Based on tests, student's performance will be judged.
Alma Cordero		**Objective** Students will be able to write cover letters, resume, and thank you letters in English and Spanish using a computer. **Strategy** Based on a rubric, the instructor will judge the student performance.
Iris Sosa and Alba Martínez	English	**Objective** • Students will be able to find, evaluate, manage, and convey reliable information on online library databases effectively and efficiently. • Students will be able to build a foundation of information literacy skills, abilities, and principles that can be transferred to other academic disciplines and programs. **Strategy** Based on one minute paper technique, the instructor will judge students performance to provide feedback.
Gladys Cruz and Ligia Hernández	English	**Objective** Students will be able to improve their reading comprehesion with the help of drawings. **Strategy** Based on one minute paper technique, the instructor will judge students performance to provide feedback.
Myrta Rosa, Michelle Crespo and Nancy Soto	English	**Objective** Students will be able to improve their overall speech performance. **Strategy** Based on a rubric, students will be judged on the quality of oral presentations.

Professor	Department	Assessment Objective and Strategy
Mary Moore	English	**Objective** To obtain immediate response to the class taught that day, and the students understanding of the material covered **Strategy** Based on one minute paper technique, the student's performance will be judged to provide feedback.
Carmen Cabán	English	**Objective** Students will be able to write introductory paragraphs with at least 80% of accuracy. **Strategy** Based on a rubric, the student's performance will be judged to provide feedback.
John Steele	English	**Objective** The student will be able to participate actively in class. **Strategy** Based on a rubric, student's participation will be judged.

An academic project of interest with a course level learning assessment component is the standardization of the General Chemistry courses among 10 campuses of the UPR System. The Chemistry faculty of our Natural Sciences Department has been involved in this project which has endured for three years. The plan calls for the participating faculty to implement course changes and assess their effectiveness. Results from all the units involved will be compared and with the knowledge gained more improvements may come about. Although not directly involved, the Assessment Committee will be monitoring the Chemistry project to learn from their experience and if warranted, collaborate with our Chemistry group.

Another project of interest is now being designed by The Department of Business Administration. Since one of their general program objectives is to develop group working skills in their students, they are interested in monitoring progress of this objective through several stages.   The project will, therefore, be longitudinal in nature calling for

measurement of skill development in several time periods. The overall idea is to agree on a uniform rubric for the faculty concentrating on the development of teamwork skills. They will probably start measurements in August of 2005 with a first-year student cohort, and follow-up on their sophomore and senior years.

The Department of Electronics, Physics and Quality Control is also in the conceptual design stage of a longitudinal assessment project. Their focus will be on technical report writing. Using a uniform rubric, they plan to standardize the report evaluation criteria. As a first step, this semester the faculty designed and provided students a guide for writing laboratory reports and a template to facilitate their work. Some fine tuning related to frequency of measurement, database design, and results reporting still require faculty discussion. But the initiative is a step in the desired direction of learning outcomes assessment.

Program level Assessment

Present emphasis on classroom projects notwithstanding, our institution is also significantly involved in program level assessment. The University of Puerto Rico at UPR-Aguadilla requires that all its academic programs be comprehensively assessed and revised at least every five years. The process requires evaluation of the program learning objectives and the update of all course syllabi in response to program changes. During syllabi revision, course objectives are aligned to program objectives.

In line with our revised assessment plan, new programs or those in revision are incorporating capstone courses or courses that prepare students for professional licensure examinations. Learning outcomes in these courses involve assessment of learning objectives at the program or summative level.

There are six programs undergoing the assessment phase. They are: the Associate Degree in Electronics Engineering Technology and the Bachelor's Degree programs in Electronics Technology, Elementary Education, Office Systems, Quality Control Technology and English Teacher Education. In all cases the revisions will include one or more of the following: capstone courses, courses that prepare students for licensure exams or courses that comply with several accreditation criteria of external professional accrediting institutions, whether or not the programs seek independent accreditation.

As an example of the latter, the English and Education Departments are evaluating their program objectives following the criteria of the **National Council for Accreditation of Teacher Education (NCATE)**. This process will positively contribute to the external accreditation of the programs as well as to the student's performance on licensure examinations. The revision of the Electronics Technology Programs (associate and bachelor's degrees) entail courses that prepare students for a licensure examination in Electronics. A capstone course is also included. The department faculty followed the accreditation criteria established by the **Accreditation Board for Engineering and Technology (ABET),** establishing the program educational objectives, desired outcomes, and characteristics accordingly. Finally, although the Department of Business Administration has not yet begun the assessment stage of their programs, they have established the goal of obtaining accreditation of their bachelor's degree program from **The Association to Advance Collegiate Schools of Business (AACSB).** Their accreditation standards require strict outcome assessment components, which the faculty will strive to follow.

Most of our programs have the same or similar general education objectives. To assist the faculty during program level assessment activities, during the present semester the Assessment Committee is working on the development of rubrics to assess general education program objectives, as presented in the General Assessment Plan, Level III. Results are expected by January, 2005.

Complementary Strategies

Another strategy being used to increase department-centered learning assessment—mentioned in the previous follow-up report—is to require an assessment component on other academic initiatives, although they may not be assessment projects *per se.* One of these initiatives is the integration of educational technology into the teaching-learning process with the aid of a federally funded Title V project. The previous report stated that ten projects were approved during academic year 2002-2003, each one included a learning assessment component. Of these projects, four were completed, three are in progress and the remaining three require redefinition. It is important to stress that these projects are not strictly assessment projects, rather the assessment requirements on these projects are designed to contribute to the cultural transformations required to make assessment a ubiquitous academic activity. In other words, through these projects we seek to make assessment a normal part of academic life. In these particular cases, from our point of view, the process is just as important as the result.

The following table highlights the number of projects of the nature described above.

Table 2 – Multimedia Projects with a Learning Outcomes Assessment Component

Academic Year	Number of projects approved	Project Status			
		Completed	In progress	Not completed	New
2002-2003	10	4	3	3	
2003-2004	4	2	2		
2004-2005	4		3		1
Total	**18**	**6**	**8**	**3**	**1**

PROJECT EXAMPLES

In the following pages, tables summarize examples of completed assessment projects.

Table 3 – Assessment Project Examples: 2002-03

Professor	Department	Assessment Activity
Damaris Hernández	Business Administration	**Objective** Detect differences in quality of oral presentations, if any, from two distinct groups taking the same course. **Context** In the *Marketing Principles* course taken by traditional and non-traditional students, registered in separate sections, differences in quality of oral presentations between the two groups will be measured and analyzed. A research project will be assigned and students are to present an oral report on the researched theme. **Measures** A rubric based assessment will be carried out and an average score for each group will be computed. The average results will be compared and if possible, explained. If available information is insufficient to explain differences, the study will be followed-up with another study to determine the causes of disparities. **Completion** Results were reported on August, 2003
William Muñiz	Business Administration	**Objective** Detect learning differences, if any, between two distinct groups taking the same course. **Context** In the *Introduction to Computer Programming and Algorithms* course taken by traditional and non-traditional students, registered in separate sections, detect learning differences by comparing average test results in a final practical examination. **Measures** A test item analysis will be undertaken for each group. For each item, average results will be computed and compared. If differences show up, the study will be followed-up with another study to determine the causes of disparities. **Completion** Results were reported on October, 2003

Professor	Department	Assessment Activity
Luis R. Rivera	Humanities	**Objective** Demonstrate comprehension of the basic principles espoused in the Bill of Rights of the Constitution of Puerto Rico (Estado Libre Asociado). **Context** The students taking A Compendium of the History of Puerto Rico will be expected to show their knowledge and understanding of the civil rights that all Puertorricans have under the Constitution of Puerto Rico. **Measures** Measure value added per student through pre and post tests. Determine average of value added for the group. **Completion** Results were reported on November, 2003
Sigrid Sánchez	Education	**Objective** Demonstrate critical thinking skills in the context of Education themes. **Context** In the *Philosophy of Education* course, students will be asked to write a monograph related to a current problem in education where they will be expected to critically apply principles of Philosophy of Education. Critical reasoning must be applied following pre-established criteria. **Measures** Rubric based assessment. **Completion** Results were reported on August, 2003
Myriam I. Vélez	Education	**Objective** Demonstrate the ability to effectively integrate basic computer skills in educational contexts in K to & levels, through appropriate use of the following software: Word, Excel, Internet Explorer, and PowerPoint. **Context** In the course *Introduction to Computer Use in Education*, students will be asked to effectively integrate the computer literacy skills they possess by combining features of production software to the preparation of several Lesson Plans. **Measures** Test-based assessment and rubric-based assessment of several Lesson Plans prepared by students. **Completion** Results were reported on August, 2003

Table 4 – Examples of Completed Multimedia Projects with
           Assessment Component: 2002-03

Professor	Department	Project
Sonia Rivera	Natural Sciences	**Description** Create and develop an online component for the General Chemistry II course. **Assessment component** Determine the effectiveness of the online component on student performance. The grades of students using the online component were compared with those on traditional courses. **Measures** The student performance measured based on short tests, homeworks, and participation in the electronic forum. **Completion** Results were reported on April, 2004
Carmen Cazurro	Spanish	**Description** Technology Integration (computer laboratory) in Spanish Honor Course in Composition in the Business World. **Assessment component** Determine the effectiveness of the online component (tutorials) on student performance. **Measures** The student performance was measured based on grades. The grades of students using the online component were compared with those on traditional courses. The satisfaction of the students was measured based on a questionnaire. **Completion** Results were reported on May, 2003

Table 5 – Example of Completed Multimedia Project with
         Assessment Component: 2003-04

Professor	Department	Project
Carmen Cazurro	Spanish	**Description** Technology Integration (computer laboratory) in Spanish Honor Course and Introductory Spanish (ESPA 3101), and Effective Writing in Spanish (ESPA 3201). **Assessment component** Determine the effectiveness of the computer-based exercises on student performance. **Measures** The student performance was measured based on pre-tests and post-tests. The grades of students using the computer-based exercises were compared with those on traditional courses. The satisfaction of the students was measured based on a questionnaire. **Completion** Results were reported on December, 2003

CONCLUSION

The process of revisiting our concepts and perspectives related to assessment has been extremely helpful and added new insights to our strategies towards learning outcomes assessment. As a result, we have adopted an approach that is more closely related to direct measures of teaching and learning as opposed to using indirect measures and solely looking at program summative outcomes, as we had previously done. This perspective is reflected in the adoption of our General Assessment Plan, Level III which is more inclined towards course level assessment. This approach started in the year 2002-03 with 11 faculty members—from several departments—volunteering to initiate course level assessment projects. In the following year, 2003-04, 33 faculty members—from all departments— have presented proposals. In and of itself, this willingness to "try it out" on the part of the faculty is a significant gain.

Of course, program assessment is still a focus of our assessment efforts. Here our revised model explicitly includes adding capstone courses, courses that prepare students for licensure exams or courses that comply with several accreditation criteria of external professional accrediting institutions, whether or not the programs seek independent accreditation. In all these courses a summative outcomes approach is adopted to measure program outcomes. These curriculum changes occur gradually as the programs come up for formal assessment; a process that is scheduled to occur for all programs, every five years after last revision. At present, 6 programs are undergoing program assessment under this new model.

As noted, progress is accounted for. But some difficulties are still present. The following issues surfaced during the implementation process:

- Although faculty training in assessment concepts and techniques has been a constant for several years, conceptual and implementation difficulties come up as faculty members try to conceive and implement specific assessment projects.

- For those past the conceptualizing phase and actually implementing a project, data collection has proven to be less complicated than interpretation. The latter has not been as straightforward as initially thought.

The above demonstrates a necessity to work one-on-one with faculty members. Training is still required, but it probably has to be better contextualized or project related. Immediate assistance and easy to find resources are needed. The Assessment Committee is working to address the problems mentioned above. In a couple of years we should be over those difficulties (and probably facing newer and more challenging ones). The Dean of Academic Affairs is committed to see this effort come through with a successful outcome. We have the leadership, the plan, and the will to make it happen.