

## AN INNOVATIVE UNIVERSITY COURSE FOR COOPERATING TEACHERS

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### **Abstract**

The transformation of a course for certifying cooperating teachers in Puerto Rico is described. The course was transformed to strengthen the teaching of science and mathematics and to make the course more congruent with the educational principles of constructivism promoted by the CETP projects at the national level, including Puerto Rico. The 45-hour requirement was distributed over nine days. The Open Space strategy was modified to include multiple active teaching-learning and assessment techniques, which promoted a learning environment based on trust, dedication, and the commitment of all participants to learn and help each other learn. Even more relevant was the fact that more content was covered and in more depth. The modified version of the course was offered to secondary level science and mathematics teachers, especially to teachers who work at the practicum centers that are part of the PR-CETP.

### **Introduction**

The Puerto Rico Collaborative for Excellence in Teacher Preparation (PR-CETP) is committed to establishing collaboration among institutions of higher education to enhance teacher preparation, especially in science and mathematics. Given its goal, the PR-CETP, in collaboration with the Faculty of Programs and Teaching of the University of Puerto Rico at Río Piedras, modified the course entitled, *The Purposes of the Teaching Practicum and the Role of the Cooperating Teacher*, to align it with the constructivist education principles that guide the major national reform movements [1].

The original course, which consists of 45 hours per semester, has been offered for the past few years at most of the higher education institutions with teacher preparation programs. This course is a requirement of the Puerto Rico Department of Education for those K-12 grade teachers who wish to become cooperating teachers.

The modified version of the course was offered to secondary mathematics and science teachers, particularly those who teach at the university practicum centers that are part of the PR-CETP. To fulfill the required 45 contact hours, the course was scheduled for five hours per day for nine days.

The modifications to the course encompassed the revision of content to update it and make it more pertinent, as well as the teaching strategies and methods, while focusing on active learning. Among the most important modifications to the course are:

- The content is focused on teaching science and mathematics at the intermediate and high school level;
- Constructivist educational practices are modeled, including: the creation of effective learning environments; the use of different cooperative learning modalities; and, the teaching-learning-assessment techniques that promote conceptual understanding;
- Innovative aspects that are relevant to the role of the supervisor carried out by cooperating teachers;
- Structured workshops, mainly in cooperative learning, with opportunities for reflection and self-evaluation to enhance self-learning abilities [2].

To develop the modified course, the strategy of Open Space was selected. In the field of education, the Open Space strategy represents a powerful tool to conduct meetings or courses, among others [3]. The strategy enables learners and communities of learners to become more effective in professional roles that are rapidly and constantly changing, by developing their skills as lifelong learners and collaborative problem solvers. It creates the conditions so that the maximum potential of the individual and the group of learners can be realized. The Open Space strategy captures the knowledge, experience, and innovation in the project, classroom, school or institution that is not captured through less open processes (adapted from [4] and [5]).

The strategy also focuses on the inquiry method. Within this educational structure, various constructivist teaching-learning-assessment techniques have been integrated, such as: interactive demonstrations; hands-on/minds-on workshops; exhibits; conferences; and, self-directed studies on themes related to cooperative learning. This broad range of educational techniques facilitated the design of diverse learning activities, which promoted active learning within effective communities of learners.

### **Description of the Development of the Course**

First Week: One of the techniques to create the optimal learning environment, that is, the community of learners, was the “self-portrait.” This self-portrait consisted of a creative

representation of the educational philosophy that guides the educational practices of the teacher. From the first day, and throughout the first week, five to fifteen minutes were designated for each member of the group to present their self-portrait to the rest. This allowed participants to learn about the unique characteristics of their colleagues, hence promoting a sense of belonging among the participants.

As a preamble to the development of the course, participants learned about, analyzed, and approved the five principles or fundamental ways of thinking for the effective implementation of the Open Space strategy. These principles included aspects such as, positive interdependence, individual responsibility, self-direction, self-evaluation, and development of positive attitudes and mental habits.

The five principles are:

- 1) Those of us who are here are the ones who had to be here. Therefore, this event is for ourselves, since we are the best ones to do what we want to do within what we are expected to do.
- 2) Whatever we achieve is what we can achieve. What we achieve is part of our self-evaluation and is influenced by our expectations. Therefore, the sky is the limit. This is a unique opportunity to learn together. It is very probable that this occasion will not be repeated in the same way and with the same people. So we should take advantage of it.
- 3) Since the agenda is flexible, we will start the group sessions at whatever time is best. We should all be responsible for the time assigned to us for the small group discussions, for contributing with ideas and for making sure that the creativity and learning process of the members is not diminished.
- 4) We will assign time for small group discussions. When the time-up signal is given, it means we must finish. When we are working with people who are important to us, there will never seem to be enough time. As the creative processes of each group have their own rhythm, we should expect that some groups will finish before others.
- 5) The Law of the Two Feet: If someone is in a place and feels that s/he has nothing to contribute or learn, s/he has the responsibility of moving to another group that fulfills her/his expectations. If s/he does not find options, s/he should simply take a break and rest. Nevertheless, if s/he does not find something of interest in the Idea Marketplace, then s/he must blame her/his-self, since s/he probably lost the opportunity to propose a topic of interest and to direct the session of her/his preference.

Once the community of learners was established with the aforementioned rules of the game in mind, participants decided enthusiastically to become involved in a new learning experience full of challenges. With the objective of guiding all learning experiences toward the topic of the course, the title of the course itself became a meaningful question. It kept participants focused toward the achievement of the course's objectives throughout the two weeks.

During the first day of the first week, guided by the meaningful question based on the course title, the participants decided about the topics they wanted to study. They identified the topics they felt passionate about, and willingly volunteered to guide the discussion in small group sessions about the proposed topics. The staff members and other community resources, who were knowledgeable about the topics that needed to be included, requested space to incorporate these topics if they did not emerge from the group.

Once the topics were selected, they were distributed throughout the course schedule and were placed on the giant Idea Marketplace poster that included spaces for working sessions for each day of the first week. From then on, the poster became the center of the Marketplace activity. In this activity, those who proposed each topic made a presentation about it and, through a brief explanation of the content and the importance of its study, participants interested in studying the topic joined them, since at least two persons were required in each of the groups. This way, the work groups were formed throughout the first week.

Each small group work session programmed in the Marketplace poster lasted between sixty to seventy minutes. The most relevant topics selected by the participants were: the theoretical foundations of the constructivist paradigm; the characteristics of cooperative learning and how to implement it in the classroom; the responsibilities and duties of the practicum supervisors, of the cooperating teachers, and of the student-teachers; the regulations that rule the teaching practicum in Puerto Rico; action research and innovative teaching-learning methods; and, ways to create effective learning environments.

To facilitate the study of the topics and the preparation of the written summaries, participants had access to books, journals, and official documents, among other reference materials, as well as to computers and printers. Teachers shared experiences, knowledge, and materials in each study group and they learned together, becoming each other's resources. The

staff members in charge of the course moved among the groups to offer support and contribute ideas and materials, when these were requested.

In each study group, participants took notes to prepare written and oral reports. The written reports were handed in at the end of the day so that each participant had the information related to the topics that had been studied in all the groups.

After each study group session, large 60-minute group meetings were held to listen to the group reports, clarify ideas, suggest new topics to be studied and, when necessary, restructure the Idea Marketplace for the following day. As the groups reported what they were researching and learning in the large group session, participants identified the aspects that required further study and those that had not yet been considered. The main purpose of the Idea Marketplace activity was to give an open space for participants to learn how to learn through interactions with peers, materials, technology, and resources. This learning activity facilitated reflection on the learning process in which the participants discovered the basic knowledge they already had and areas in which they needed improvement. Based on this discovery process, the Open Space strategy was modified by the group to include workshops, conferences, demonstrations, and exhibits of assessment techniques. This information was used to add study group work sessions in the Idea Marketplace.

Second Week: With the same cooperative spirit and joy that prevailed during the first week, teachers participated throughout the second week in interactive conferences to study topics, such as: alternatives for the professional development of teachers; assessment of conceptual understanding; learning problems; aspects that guide the teaching practicum; and, how to comply with the requirements of the Practicum Program of the Puerto Rico Department of Education.

During this phase, participants were stimulated to serve as resources based on their expertise on special selected areas. In this way they discovered that, as part of the team, they can model their best practices. In other areas, the staff members and other community resources developed topics through interactive activities.

The logistics for developing the described activities consisted basically of the following: after each conference or workshop, large group reflection periods were provided to share experiences, clarify doubts, apply what was learned in new situations. Afterwards, the participants met in small groups according to the topic they were interested in pursuing in depth.

Later, in an open discussion, each group presented the most important aspects discussed and established through consensus what should be emphasized the following day.

As the second week came to a close, the participants organized an exhibit about the assessment techniques that were being used in the classroom. In a free, individual, and spontaneous way, all participants presented the instruments to other colleagues, explaining how to create them, and narrating their experiences. Learning from one another, they shared information obtained through assessment instruments and how to use gathered data in the process of student learning.

### **Assessment**

Participants self-evaluated the quality of their own learning through a general rubric. The objectives of the course were written with the following criteria:

- Ability to guide my own learning;
- Ability to reflect on my teaching practices;
- Assessment of my strengths and limitations, and discovery of how to improve them;
- Capacity to check divergent ideas;
- Development of responsibility for my own learning and the learning of others;
- Understanding of the standards of excellence to become an effective cooperating teacher.

The previously described criteria were arranged in a rubric based on a Likert scale.

The evaluation of the course, in general, was carried out through focus groups. This activity provoked an additional learning experience since participants had to remember and talk about the concepts studied, thus broadening their learning.

Recognizing the importance of the affective dimension in learning [6], the course closed with an activity in which participants received a rose from the professors. The rose was a symbol of the commitment to work with dedication to help student teachers and other colleagues to achieve excellence.

### **Follow-up with Participants**

A follow-up component was incorporated into the design of the course as part of the assessment of the course, and to provide additional support to participants, to be carried out during the second semester of 2001-02. Focus group interviews, as well as visits to teachers in the classroom to explore what elements and strategies of the course they are incorporating into their practice will be carried out. Cooperating teachers will be interviewed to determine whether the new educational strategies, particularly the hands-on and assessment methods, are being used in the classroom.

### **Conclusions**

As can be seen through the description of the course experience, the learning environment developed through the Open Space strategy allowed participants to defend their points of view and self-direct their learning process in diverse settings. On the other hand, the learning environment allowed the development of general abilities: problem solving, decision-making, and the development of positive mental habits. It also facilitated the practice of important social skills such as listening, and consideration and respect for another person's ideas. Above all, the learning environment was characterized by trust, commitment, and the dedication of all participants toward learning and helping others to learn. Also very important, this strategy allowed more content to be covered in more depth through the course. PR-CETP hopes that other institutions adopt or adapt this model to offer courses leading to the certification of cooperating teachers. The central staff of the PR-CETP is available to offer guidance and technical assistance to institutions interested in developing this course model. ■

### **Bios**

María Aguirre is Associate Professor of Education at the University of Puerto Rico, Bayamón Campus. Her interests are assessment in the classroom and modeling teaching-learning-assessment techniques to promote conceptual understanding.

Lucy Gaspar is a retired associate professor, and Director of the PR-CETP project. Her interest is to facilitate collaboration between K-12 teachers and science and mathematics professors, and to improve the teaching of science and mathematics through the Science and Mathematics Teacher Preparation Program.

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