

Distance Education and the Workplace: Situated Learning in Dietetic Programs

Laurie B. Hackenberger, Ph.D.
Instructional Technologist
Penn State World Campus

Beth Mincemoyer Egan, M.Ed., R.D.
Instructor in Dietetics
The Pennsylvania State University

The Penn State World Campus and the Penn State College of Health and Human Development, School of Hotel, Restaurant, and Recreation Management jointly offer certificate and associate degree programs in dietetics at a distance. These programs provide individuals employed in food service, child nutrition, and other areas with the opportunity to obtain the educational requirements necessary for career advancement without leaving their current positions. Since the Penn State programs meet certification and credentialing requirements for three professional associations, students earn professional credentials at the conclusion of their programs of study.

The Dietetic Programs through Distance Education (DPDE) model combines distance learning and fieldwork under the supervision of faculty advisors and professional preceptors/mentors. Students progress through coordinated print-based courses that combine theory and practice. In this model, the work environment becomes the student's learning community, and learner-environment interaction becomes a distinct form of interaction in distance education based on situated learning theory.

The Program Model

The DPDE model consists of a student who is employed in the dietetics field at least 15 hours a week, a professional preceptor/mentor, and Penn State faculty instructors and advisors (three of whom are full-time with this program). Content delivery is primarily through print study guides and textbooks with optional video, audio, e-mail, and Web enhancements. While all courses provide projects and activities grounded in authentic problem solving, eight courses out of the 60-credit associate degree require "supervised practice" that must be overseen by a credentialed practicing professional. Supervised practice is required by the American Dietetic Association, the accrediting body for dietetic programs, in order for graduating students to qualify for a culminating credentialing exam. Supervised practice allows the learner, in this case a distance education student, to experience the dietetics profession firsthand.

The dietetics, nutrition, and foodservice management courses in this program are self-paced and, thus, offer little opportunity for interaction between students like that found in technology-based group courses. Nonetheless, these courses are rich in interaction for the student. Moore identified three forms of interaction in distance education courses, including learner-content, learner-instructor, and learner-learner interaction (Moore, 1989). Learner-content interaction is the process through which learners assimilate the information provided by the course developers. Learner-instructor interaction motivates and guides the student, particularly in the application of new knowledge. Learner-learner interaction supports collaborative and transformative learning, although its desirability is dependent on "the circumstances of the learners and their age, experience, and level of learner autonomy" (Moore, 1989). In the DPDE programs, the close relationship between the student, the instructor/advisor, and the professional mentor keeps transactional distance—the pedagogical distance between teacher and learner stemming from a difference in understandings and perceptions (Moore, 1986)—low. In supervised practice courses, the course content spills over into the student's work environment. When distance educators integrate

academic content with practical problems from the student's environment, then, "instead of being distractions, these become part of their learning" (Moore & Kearsley, 1996, p. 13).

The Learner, Their Environment, and Situated Learning Theory

When students engage in supervised activities in the workplace, they are immersed in the culture of their profession. DPDE students both observe and practice the language of the profession, problem solving, ethical decision-making, interaction with clients/patients, and interaction with colleagues or subordinates. The pivotal role that this experience plays in the training of new practitioners suggests that learner-environment interaction is a distinct form of interaction in these professional distance education courses. As proposed here, learner-environment interaction is based in the legitimate peripheral participation theory of situated learning (Lave & Wenger, 1991).

Lave and Wenger view legitimate peripheral participation as a way of understanding learning by considering the interaction of the whole person within a coparticipative framework. In a practical sense, legitimate peripheral participation is based on the following ideas: 1) learning is integral with participation; 2) mastery of a skill resides in the organization of a community of practice, not within one particular person; 3) this community reproduces itself through the incorporation of apprentices, but also evolves in the process; and 4) an apprentice legitimately participates in the periphery of the community (by observing a master or by performing tasks that indicate the overall process) before moving to fuller participation and finally mastery. In legitimate peripheral participation, learning is not viewed as an isolated activity, but as "an aspect of all activity" (Lave & Wenger, 1991, p. 38).

Legitimate peripheral participation combines "theories of situated activity and theories about the production and reproduction of the social order" (Lave & Wenger, 1991, p. 47). It is clear that supervised practice in the DPDE programs allows the student to legitimately participate in the dietetics profession. It is also true that the supervised practice influences the reproduction—or evolution—of the field. Because the DPDE faculty actively communicate with students, professional mentors, employers, and the American Dietetic Association and apply this feedback to the courses, the DPDE programs directly influence professional practice and role delineation, specifically for the role of registered dietetic technician.

Course Examples

In a technical program such as the DPDE dietetic technician track, supervised practice must be combined with a series of courses that provide scaffolding for technical tasks. In this track, students learn about the profession in an introductory course that examines the delineation of roles in the field and explores ethical issues. Students follow this with a human biology course on the bodily systems and an introductory nutrition course to explore the roles of nutrients in the body. Students later engage in fieldwork during a 4-credit course on nutrition and disease and, finally, during the 4-credit capstone course on professional field experience. (The capstone course builds on several prerequisite courses in both clinical nutrition and foodservice management.) Supervised practice in the latter two courses is described below.

NUTR 252: Diet Therapy and Nutrition Care in Disease

An early assignment in the course asks the student to accompany the preceptor/mentor on a visit with a patient. The student observes as the mentor conducts a patient interview to collect diet and lifestyle information for preparing the patient's recommended dietary care plan. The student works through the complete process with the mentor. The student also follows along as dietetics professionals complete individual patient education. Later in the course, after studying various disease states and protocols for

dietary treatment and nutrition care, the student completes the patient interview, care plan recommendation, and patient education activities on their own with the preceptor as a coach.

DSM 295W: Field Experience in Dietetic Management

A lesson on food and drug interactions illustrates how this course builds on the knowledge and experience gained in NUTR 252, regarding various disease states, and the introductory nutrition course. In this module, a dietetic student, with assistance from his/her preceptor, chooses a patient in their facility to use as a "case study." The student reviews patient records including information on diet and nutrition and the medications currently being taken by the patient. The student analyzes the individual case for any food/drug interactions that the patient may need to understand. After consulting with the professional mentor, the student gathers or prepares educational materials and then teaches the patient about potential food/drug interactions. The mentor supervises and evaluates the student on this activity. Documentation of the assignment and the mentor's evaluation are submitted to the Penn State instructor.

In both of these courses, the student learns the theory of nutritional care, and, by legitimately participating in the profession, he/she also acquires the skills to apply that knowledge. The mentor models professional behavior and gains access to updated information and ideas from the student who is studying state-of-the-art practices in a university course. As the student gains proficiency in all or part of a skill set, the mentor can allow the student to practice on an increasingly independent basis, thus building the capability and effectiveness of both the student and the dietary department. The continuous feedback from professionals in the field to the course instructors impacts course content and supervised practice assignments, which in turn impacts the profession.

Outcomes

Penn State DPDE graduates in aggregate attain a higher-than-the-national average pass rate on the culminating credentialing exams. Employers rate graduates as well prepared for their responsibilities, and students are highly satisfied with their distance education experience (Survey of Graduates and Employers, 2002). The Penn State program has attracted and maintained approximately ten percent of the total number of dietetic technician students in the United States. However, this success is not without its costs. Students who are not already employed in the health care or dietetics field are often unable to qualify for Penn State's program because they do not have access to a professional mentor and work site for completing program requirements.

Conclusions

This distance education program model can be implemented in any field where a professional association establishes a code of ethics and standards of practice for the profession. Although the work sites of distance learners will be scattered throughout the United States, the presence of an accrediting body ensures that students will experience uniform practices across their local communities. Supervised practice adds the element of learner-environment interaction to the distance learning process, and students legitimately participate in their profession as they progress towards mastery. Supervised practice facilitates continuous program assessment and improvement because instructors, advisors and course authors maintain contact with students and professionals to exchange new ideas and share information on the tools used in practice. When courses and curricula are revised, resources and information gained from program participants are incorporated as changes to better serve the student and profession.

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Biographical Sketches

Laurie B. Hackenberger, Ph.D. is an Instructional Technologist at the Penn State World Campus. While she is mainly concerned with expanding the technology infrastructure of the World Campus, she is also the lead technologist for electronic assignment submission in print-based courses. In the latter capacity, she creates Web-based tools and works with instructional designers to solve design issues. She is also a student in Penn State's adult education graduate program. Prior to joining the World Campus, Laurie worked as a research engineer for a small technology firm where she managed several materials research programs.

Address: 207 Mitchell Bldg.
University Park, PA 16802
E-mail: lxh120@psu.edu
URL: <http://www.worldcampus.psu.edu/>
Phone: 814.865.5730
Fax: 814.863.2362

Beth Mincemoyer Egan, M.Ed., R.D. has been an instructor and academic advisor for The Pennsylvania State University's Dietetic Programs through Distance Education since 1995. She works with dietetics and school foodservice management students, primarily adult learners, in both associate degree and certificate programs. She has designed and taught courses using traditional distance learning technologies as well as Web enhancements. For two years Beth has also been the program chair of the Penn State School Food Service Institute. This highly successful four-day conference targets school foodservice managers and cooks and provides continuing education to meet their specific work needs.

Address: 201 Mateer Bldg.
University Park, PA 16802
E-mail: bethegan@psu.edu
URL: <https://courses.worldcampus.psu.edu/welcome/dpde/>
Phone: 814.863.7539
Fax: 814.863.4257

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