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# Elements of a Sound Online Education Program: A Blueprint for a Food Industry Management Administration Certificate

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## **Abstract**

*Internet technologies are making online education the fastest form of education delivery system in the U.S. While the delivery structures for offering online courses or programs often vary, the rationale for doing so centers around the need to mitigate costs of education delivery, enhancing educational quality, granting greater access to university courses to non-traditional students, accommodating the demands of the changing student population, and providing an alternative source of revenue for universities. This paper examines the elements that are crucial to successful online educational programs and proposes a blueprint for an online certificate program.*

*Keywords – online environment, food administration, student retention*

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## **Introduction**

Colleges and universities are seeking new ways to expand educational opportunities for students and adult learners. These ways have been facilitated by internet technologies making online education the fastest form of education delivery system in the U.S. Parker et al. (2011) indicate that almost 90% of public colleges and universities currently offer some courses online and almost half of all students who graduated within the last decade took an online class. The administrative structures for offering those online courses often vary. Paolucci and Gambescia (2007) categorize those structures into internal and external. In the case of the internal structure, the Academic Department, Continuing Education/Professional Studies Unit or a Distance Education Unit within the university set up as a “separate” arm of the university takes the lead in offering the online courses. The external structures may be characterized as a consortium where universities enter in formal arrangements and cooperate in offering courses or programs; form strategic alliances with other universities to exploit administrative or operational services; or engage outsourcing structures where an outside entity is responsible for much of the administrative and operational duties of the program or courses.

While the delivery structures for offering those courses or programs may vary, the rationale for doing so centers around the need to mitigate costs of education delivery, enhancing educational quality, granting greater access to university courses to non-traditional students, accommodating the demands of the changing student population, and providing an alternative source of revenue for universities.

Many universities offer entire degree or certificate programs online. Rutgers coordinates its online programs through its Division of Continuing Studies and Distance Education. The university offers online professional certificate programs through its “Rutgers University Executive Education” arm or as part of its partnership with Pearson, Inc. Certificates are offered under Leadership, Management and Supervision, Finance and Accounting, Human Resources, Information Technology and Web Development, among others. Western Governors’ University, established to help adult learners who dropped out of school before completing their degree, offers an online menu of courses in health sciences, business, information technology, and teacher education. The University of Maryland University College offers graduate and undergraduate degrees in fields such as Business Administration, Human Resource Management, and Information Technology. Other top tier institutions such as MIT, Indiana University, Boston University and Penn State University are offering fully online degree or certificate programs from business to education, nursing to information technology. For example, the Boston University Distance Education Unit offers several certificates at the graduate level and allows students to apply for certificate programs for classes that are offered six times throughout the year.

The increased attention given to online education represents recognition by institutions of higher learning of the need to expand educational opportunities for students while responding to their needs for flexibility (Petrides, 2002) and convenience (Poole, 2000) in the learning process. These factors are of crucial importance if institutions are to accommodate the students’ busy schedules. The online program, “Making the Virtual Classroom a Reality”, at the University of Illinois admitted over 1000 individuals from different states and foreign countries by December 2002 (Santovec, 2003). Allen and Seaman (2009) suggest that about 4.6 million students took at least one online course during the Fall 2008. At Rutgers University’s School of Environmental and Biological Sciences, approximately 3000 students took an online class from spring 2006 to fall 2012 (Communication from Office of Scheduling and Enrollment Management, 2012).

This paper reviews the literature to identify the elements of a sound online education program. Using those elements, the paper proposes an online Food Industry Management Administration Certificate (FIMAC) for Rutgers University. While the paper focuses on the food sector, the elements and mechanics provided are applicable to the development of any online program.

The paper proceeds as follows. The next section reviews the literature on education in an online environment. This section is followed by an examination of faculty resources needed to execute the program. In particular the paper examines faculty resources at the Department of Agricultural Food and Resource Economics (DAFRE), the department most likely to execute the program. That section is followed by a proposed FIMAC curriculum. The next section examines institutional support and existing infrastructure at the university. The paper concludes with some policy implications.

## **Literature Review**

The literature related to online education and the fields of study pursued by students who study online have expanded considerably over the past decade. Pontes and Pontes (2013) show that students are more likely to register for courses in business, computer and information sciences, health or education, humanities or social/behavioral sciences than courses in the life science, physical sciences, mathematics or engineering. The authors assert that computer and

information science students are a natural fit for courses that utilize online technology, while business students appreciate the value of time as they pursue their careers.

While the choice of study is a major determinant of enrollment in online classes, the ability of students to persevere in such an environment has been caused for concern among educators. The lack of perseverance has caused students to withdraw from online classes. In some cases students withdraw because of lack of satisfaction (Levy, 2007); in other cases students hold unrealistic or uninformed expectations about the online environment (Dafgard, 2002). Hughes (2007) shows that student retention may be improved when blended learning is combined with proactive support from a tutor who facilitates peer support and cooperation among students online. Hiltz (1998) notes that to encourage student persistence and enhance economic outcomes, it is more important to build learning communities than to rush into course-building believing that it will save money, time and resources. Such a process may be established by fostering a sense of connectedness to instructors, peer students and the institution. Ekstrand (2013) concludes that the prerequisites for student persistence in distance education are related to the institution, administration, instructor and learner support and not necessarily student factors.

The student-centered nature of online education requires a shift in the role of the effective instructor from that of a teacher to facilitator. In such an environment the instructor assumes the role of inducing learning. Knowlton (2000) asserts that the pedagogical skills required of a facilitator involves helping students collaborate with each other to develop a personal understanding of course content, linking students to learning resources, and encouraging student initiative. McCombs and Vekali (2005) indicate that student-centered online instruction provide a means for learners to build interpersonal connections and relationships; find strategies that acknowledge differing learner needs, abilities, and interests; afford personal control and choice to learners; assess and address the technological self-efficacy of individual learners. These factors underscore the elements of constructivist pedagogical theory that calls for a variety of learning perspectives that encourage students to be receptive to other perspectives and experiences, and to explore areas of importance through active learning and assessment (Conway, 2003).

Given the important evolution in the instructor role from teacher to facilitator, the literature identifies key components that are essential to effective online instruction. Zen (2008) posits that effective online instruction requires clear course design, accessibility and presence of the instructor, timely feedback by the instructor, and a sense of community within the online course. Similarly, Bailey and Card (2009) identify eight effective pedagogical practices for online teaching from a meta-analysis of the literature. These practices include (i) fostering relationships by showing empathy to students, expressing passion for teaching and a strong desire to help students succeed at the university level; (ii) engaging students by use of emails and class discussion boards; (iii) timeliness in responding to students' questions and returning graded assignments; (iv) communicating in a style that shows a sense of caring and empathy; (v) organizing the course Web site so that it is amenable to teaching in the online environment; (vi) effective utilization of technology to deliver course materials and assist in student learning; (vii) flexibility and patience and a willingness to address students' concerns when quirks in the technology arise; and (viii) setting high expectations from the beginning in defining course goals and learning objectives.

The decision to enroll in online courses is often guided by ones perception of the online environment. Otter et al. (2013) posit that such decision is often based on students' perceptions of the quality of the online learning experience, their perceptions of the faculty member teaching

the online course, their perceptions of the other students taking online courses, and their motivations. These factors assume major importance as students weigh their capabilities to take an online course.

Particularly for students taking an online class for the first time, a self-assessment of their capabilities to complete an online class is an important predictor of their satisfaction with the online experience (Shen et al., 2013). Such an assessment provides the mechanism that enables students to summon the motivation and exert the effort needed to persevere in difficult situations. Bandura (1986) defines such assessment as self-efficacy which is a person's belief in his or her ability to do a particular activity. Cho (2012) proposes six types of self-efficacy to determine a student's readiness to take an online course. These are self-efficacy to believe in ones capabilities to (i) complete an online course; (ii) interact with classmates for academic purpose; (iii) interact with the instructor for academic purpose; (iv) self-regulate (e.g. planning, monitoring, evaluation, and adjustment) in online learning; (v) handle tools in a course management system (such as Blackboard, eCollege, Sakai); and (vi) interact socially with other classmates. Paechter and Maier (2010) find that course clarity and structure, the acquisition of factual and theoretical knowledge, the instructor's expertise in e-learning, the instructor's support and counseling, and the support for cooperative learning and group work, contributed positively to the online learning experience. The authors also find that the difficulty in maintaining one's motivation and the great investment of time and organization necessary for the course negatively impacted on the satisfaction of the online experience. Dabbagh and Kitsantas (2004) suggest that self-regulated learners are well-suited to succeed in student-centered online learning environments. Azevedo (2005) posits that models of self-regulated learning involve a continuous cycle of cognitive, motivational, and behavioral activities that inform learning and knowledge construction.

The phenomenal growth of online education means that faculty members often face departmental pressure to teach courses online. That shift requires an increase commitment of time, particularly in communication, but also in course design and grading (Hopewell, 2012). Allen and Seaman (2009) find that faculty are still reluctant to commit to teaching online because of the perceived lack of acceptance of the value and legitimacy of online education. Thus the decision to migrate courses to or to teach courses online involves a cost-benefit analysis. Wolcott (1997) finds that institutions lacking a strong commitment to distance education did not reward faculty effort in promotion and tenure decisions. This finding is not surprising given the present structure at academic institutions that rewards research and publication rather than teaching.

When faculty do teach distance education courses they are motivated by the flexible schedule, self-satisfaction, opportunities to use new technologies, and the financial reward associated with teaching online courses (Chapman, 2011). These factors, particularly self-satisfaction, are important for the continued growth of online education. Hartman et al. (2000) show that there exists a direct correlation between faculty satisfaction and students' motivation with and their performance in online courses. Zhen et al. (2008) find that self-efficacy is the most important determinant of whether a faculty member decides to teach online.

While factors at the nexus of student and faculty self-efficacy facilitate distance education, proper administrative support is crucial to a successful program. This support centers on funding, guidance and the removal of barriers that hinder a sound online program as well as an examination of the existing infrastructure to determine its suitability for online education. McLean (2005) points out that this examination should include courseware design, selection of the appropriate technology, addressing obsolete policies, promotion and acceptance of the

paradigm shift, issues relating to faculty workload and intellectual property (IP), faculty and staff skills development, and the development of synergistic teamwork and interdisciplinary cooperation. Clearly, if universities are to compete in the online education space the factors highlighted above are crucial to that endeavor.

### **Faculty Resources**

The ability to execute any academic program at a university depends on the expertise of its faculty. There are currently 18 faculty members within DAFRE with some teaching assignment. Of the 18, 7 are adjunct faculty, and of the 11 faculty, 10 are on tenure track appointments, with 1 having an instructor appointment. Of the 10 faculty, 5 are at the rank of professor, 4 are at the rank of associate professor, and 1 at the rank of assistant professor. The development of FIMAC would require that a DAFRE associate professor develop a course for the core and the willingness of another DAFRE associate professor to augment and teach an elective course. Given the current demands on faculty resources during the Fall and Spring semesters, FIMAC would initially have to be launched as a Winter/Summer academic program.

### **The FIMAC Curriculum**

The Certificate would require the completion of six courses over a 3 to 4-semester (summer/winter) period and provide adult learners with core competencies in management and health. Adult learners would gain an understanding of the basic concepts, functions, and tools of management that contribute to successful business and enterprises, and examine public policies designed to facilitate food trade, assure the quality and safety of the food consumed, and also public policies that influence the proper functioning and performance of the food industry. These competencies can be satisfied, with some modification, by the current cadre of courses offered by the department. DAFRE currently offers 2 management-related courses – Management, Human Systems Development, and Introduction to Management. DAFRE also offers 3 courses with Food, Health and Safety implications – Food Health and Safety Policy; Public Policy toward the Food Industry; and Economics of the Food marketing System. Three of the Elective courses are currently offered by DAFRE and 2 will have to be developed or co-opted from other departments.

The Certificate would be satisfied by taking the following courses:

#### Required Courses

- i) Introduction to Management
- ii) Food Health and Safety Policy
- iii) Public Policy toward the Food Industry
- iv) Economics of the Food marketing System

#### Elective Courses (any 2 of the following)

- i) Introduction to Marketing
- ii) Corporate Citizenship and Social Responsibility
- iii) Sustainability Decision Tools
- iv) Sustainable Food Policy for Developing Countries

- v) Global Marketing
- vi) Leadership
- vii) Food Science

While the required courses provide the foundation to address management and food-related issues, the elective courses provide the opportunity and flexibility for adult learners to delve into ethical issues related to business (Corporate Citizenship), life-cycle analysis and carbon footprint analysis (Sustainability), marketing, elements of leadership, and an introductory food science course or some variation thereof.

### **Institutional Support and Existing Infrastructure**

On November 12, 2013, Dr. Richard L. Edwards, Executive Vice President for Academic Affairs, announced the appointment of Dr. Richard J. Novak as Vice President for Continuing Studies and Distance Education. In that capacity Dr. Novak “assume(s) primary responsibility for the overall direction, policy development, and implementation of distance education at Rutgers, including the direction of RutgersOnline, the Center for Online & Hybrid Learning and Instructional Technologies (COHLIT), and videoconference classrooms for distance education.” The announcement further states, “...faculty will be well served in the design and delivery of hybrid and online courses.”

While the research shows that institutional support and the provision of a sound infrastructure are vital to any outstanding online program, the research also shows that the involvement of faculty with online teaching experience in policy development is crucial to its success. The policies developed in such an endeavor need to outline the proper treatment of content ownership (i.e. intellectual property), faculty compensation and appropriate course workload (Ryan et al. 2004). As Academe (2013) points out, “With the rise of massive open online courses, or MOOCs, and other forms of online education, universities have also started to assert ownership of the copyright to courses created by professors” p. 8. And while the US Supreme Court has ruled that faculty members own the patents to their inventions, many universities are requiring faculty to sign away their patent rights as a condition of their employment. At Rutgers, for example, the following agreement must be signed for teaching/developing a hybrid summer course: *Intellectual Property Ownership*

*“The university and the grantee will share ownership of the hybrid course materials developed for this grant program. The grantee has the option of using these materials at other institutions, and Rutgers may use them in delivering the same course in the future.*

\_\_\_\_\_ *your signature”*

In receiving this agreement one faculty member wrote, “*Does this strike a nerve with anyone (as it did with me)?*” It is clear from the reaction of faculty receiving these IP agreements that faculty involvement in the online education process has been lacking. Indeed, Hughes (2012) of the Department of Anthropology at Rutgers asserts in “Comments on the Contract between Pearson, Inc. and Rutgers University,” that in its discussion contracting with Pearson, Inc. to establish online degree programs, “the administration hardly consulted with faculty or even with deans.” And while Rutgers recognizes the IP rights of professors, the author further states that the contract grants Rutgers “... perpetual, royalty-free license to use Course and all Course



materials for its educational purposes.” It is highly unlikely that such language is the result of consultation between faculty and administration particularly when the contract makes provisions for the course materials to be used by part-time or contingent faculty who may modify its contents. What emerges from the examination of the institutional support from Rutgers for online education is the apparent lack of faculty involvement in the online education development process. In a June 7, 2013 email announcing the defeat of a new masters program proposed under the management of Pearson, Inc., Adrienne Eaton, President of the Rutgers AAUP-AFT, indicate that graduate faculty now had the opportunity to “ have a full discussion of the Pearson contract, a chance that has thus far not been accorded any major faculty group.” On September 17, 2012, Rutgers entered into a 7-year contract with Pearson to deliver fully-online degree programs.

In the partnership with Pearson, Rutgers controls the curriculum and course content, faculty selection and evaluation of student applicants while Pearson supplies the infrastructure of technologies and support services, including video conferencing and 24/ 7 technical support (Bourbeau, 2013). While Pearson uses the technological infrastructure facilitated by eCollege, other technological structures exist at the university and are being used by Rutgers faculty. These structures include Sakai and Blackboard. Levy (2003) suggests that administrators planning to develop an online teaching program should ask the following questions. First, what is the vision of the university and its plans for the future? Second, are changes in curriculum required to facilitate the online environment? Third, what investments are to be made in faculty and staff development and support services? Fourth, is there a need to modify student services given the online environment? Fifth, are additional student support and/or training needed in this new environment? Sixth, are policy changes required to address questions of intellectual property and copyright?

In addition to the technological infrastructure, institutions need to examine the existing infrastructure designed for campus-only students. These structures include student recruiting, admissions, academic counseling, registration, financial aid, and other student services (Meyer and Barefield (2010). For example, while Rutgers offers a winter session, university offices are closed for about a third of the period when students are taking classes. The closure of the University during that period makes the administrative resolution of issues over that timeframe difficult.

### **Conclusion and Policy Implications**

The proliferation of online courses and programs provides an opportunity for academic institutions to serve the needs of students wherever they are. This paper examines the elements of a sound online education program and presents a blueprint for developing an online Food Industry Management Administration Certificate program to expand the online learning experience for students and adult learners. That program relies substantially on courses already offered by DAFRE, but may benefit from the flexibility and breadth of courses offered by other departments. The flexibility to choose courses from other departments means that the elements proposed for consideration in this research may be utilized to develop a myriad of programs for student and adult learners.

While online learning has become an important mechanism for delivering instruction in higher, that mode of course delivery comes with several challenges. These challenges involve student retention and issues of faculty workload, the reward system and content ownership. While the challenges exist, the increasing demand for life-long learning coupled with major advances in technology mean that university educators and administrators will continue to

examine ways that facilitate the online learning experience for students. The experience cultivated in that manner, also frees institutions from investing in expensive real estate and makes them less dependent on state legislatures for funding.

In the case of student retention, that outcome can be improved with the proactive support of the tutor/facilitator who fosters peer support and cooperation, and nurtures student initiative. Such an approach builds interpersonal connections and relationships and diminishes the feeling of isolation that students often feel in the online environment. Additionally, an architecture of the online environment that lessens student anxiety by providing clear course design and guidelines and expectations for the course, gives a boost to student self-efficacy. This architecture facilitates student planning, self-monitoring, evaluation and adjustments needed for successful online learning.

The role of faculty in online education cannot be overstated. Faculty are crucial in curriculum development and as such need to play a central role in online policy education development from its inception to execution. Clearly a good online program is not an accidental endeavor. Such a program requires steadfast administrative support in the areas of technology, financial resources, the reward system, and human capital development. These elements are at the foundation of a successful online education program.

The implications of this research are clear. Efforts to get tenure-track faculty at the rank of associate professor and below to participate in such an endeavor would be made easier if proper guidelines exist regarding the contribution of online teaching to the promotion process. Given the significant commitment of time that online teaching demands, faculty are unlikely to voluntarily embrace moves to migrate their courses online or participate in any online program. For faculty at the rank of professor, the incentive structure is quite different. In this case, such faculty may require proper compensation for their time and the intellectual property that they develop. And while these impediments are not severe enough to derail the push into online education, the failure to address them may hinder the development of the proposed certificate in particular, and the widespread adoption of any online education program, in general.

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