

# DISTANCE EDUCATION AND ITS APPLICATION IN CONTINUING EDUCATION FOR THE POULTRY INDUSTRY<sup>1</sup>

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## SUMMARY

The growth of the poultry industry, globalization of agriculture, and decline of academic departments emphasizing poultry training have combined to present a need for a paradigm shift in poultry training. The technology revolution and our improved understanding of the interactions between technology and education have resulted in tremendous opportunities for the wholesale training and retraining of students and employees. This manuscript looks at two academic solutions toward meeting the need for graduates trained in poultry science. These solutions are presented as models for the nontraditional training of students and/or employees by using the principles of distance education to improve and enhance training and productivity.

**Key words:** Computer-based training, continuing education, distance education poultry

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## INTRODUCTION

The technology revolution has resulted in tremendous opportunities for the wholesale training and retraining of students and employees. A particular need for the use of technology in training has recently arisen for the poultry industry. Nationally and internationally, the growth of the poultry industry has meant more people employed and significant changes in the types of skills needed and jobs available [1]. In contrast, the continued decline of academic poultry departments and graduate trainers has resulted in fewer opportunities for students interested in poultry training [2, 3] and, therefore, fewer job applicants who understand the business of poultry. It has been suggested that any

weakness in poultry training can be overcome by on-the-job training [1]; how to most effectively accomplish this training remains an area of discussion and certainly more problematic for emerging global operations.

This manuscript looks at two academic solutions toward meeting the need for graduates trained in poultry science. These solutions are presented as model approaches in meeting the continuing education needs of poultry businesses (employees) and how the principles of distance education might be used to improve and enhance training and productivity.

## CONTINUING EDUCATION

Lifelong learning can be defined as the experiences or opportunities throughout our lives

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span that broaden our knowledge, skills, or attitudes and, hence, support job performance. Lifelong or continuing education, a component of lifelong learning, can be separated into three general areas of experience: *formal education* fostered by formal organizations such as schools, colleges, and universities; *nonformal education* such as might occur during a museum visit or through participation in a service organization; and *informal education* such as occurs in a family setting or from exposure to mass media [4]. Together these educational settings provide the structure or context in which continued learning will occur. This context is important because it can influence the retention or acceptance of knowledge. For example, acceptance of an ethic may be more readily achieved when introduced in a family setting rather than through a formal organization [4].

There are three principal interested parties in the lifelong education process, and these parties differ in their goals for lifelong education. First, the government seeks to develop a highly skilled national workforce capable of responding to economic and technological changes. Second, employers are interested in improving efficiency and productivity and in the retention of skilled employees. Finally, the individual may look to lifelong education to provide transferable skills, increase competence, and improve career choices. Understanding the interests and role of each of these groups is important because no single group should be expected to be responsible for lifelong education; rather each should contribute financially and conceptually to the process [4].

Continuing education is increasingly important to the employer and employee. The present day global economy means increased competition and opportunities and effectively places an emphasis on organizations and individuals with a strong and flexible skill base. As technology advances, industries are increasingly faced with requirements for employees with new job skills and a potentially smaller applicant pool from which to hire. For example, many business skills and business models have a useful life of 2 to 3 yr, and technological advances occur and are implemented in much the same time frame. Academia is not structured to respond to these rapid changes, and thus graduates are likely to

lag behind the demand. Continuing education can be used to bridge gaps in the knowledge base needed for a particular job.

Continuing education is well established for many professional fields, including most of the medical profession, attorneys, veterinarians, and animal health technicians. It is also a requirement for many teachers and is used extensively to train sales representatives and managers. Traditionally continuing education has been accomplished through attending conferences or specific short courses. Although these areas will continue to benefit from continuing education programs, efforts are likely to show the greatest benefit when directed at updating or improving skills among labor groups not typically involved in these programs.

## DISTANCE EDUCATION

Although there are many definitions of distance education, in general they revolve around the idea that some barrier, whether it is time or distance, separates the student from the instructor. Technology of some kind is used to bridge the barrier. The types of technology suitable for distance education is increasing dramatically but in general can be separated into four major categories: voice, video, computer, and print. Early distance education programs were primarily one way (e.g., correspondence courses through the mail); however, improved technology and a better understanding of the importance of student-instructor interaction has led to excellent training opportunities using all of these categories. Indeed, it is relatively easy to assemble an instructional unit that incorporates all four categories and that includes significant interaction among students and between the students and the instructor. This combination of methods is relatively important, as research has shown that the effectiveness of a training program is linked to the level of interaction and to its ability to provide instruction to students with different learning styles. A further benefit from using combinations of the four forms of delivery may be improved retention of information. It is often said that people retain 10% of what they read, 20% of what they hear, 30% of what they see, and 50% what they hear and see. Thus a highly interactive computer-based training (CBT) program

that makes use of video and audio to support printed documentation may provide more effective instruction than traditional lecture-based programs. Indeed, numerous studies have detailed positive learning experiences following incorporation of computer-mediated instruction into courses [5]. It has also been suggested that students can shorten their learning time with computer-based instruction [5]. In addition to the multiple forms of delivery possible through CBT, one or more instructional methods can be used, including tutorials, drill, and practice (to master a subject or technique), training games (which engage the student as entertainment and take advantage of competition), simulation of scenarios (which permit experimentation and testing of assumptions), problem solving (to stimulate thinking skills), and demonstration in support of new information (or as a review). These instruction methods can also be used in a learning community in which groups of students work together to solve problems or learn concepts. The relevance of CBT to corporate training has not been lost on the education industry. Indeed, internet-based learning alone has been projected to grow to a \$50 billion market by 2005.

In addition to the potential integration of various forms of presentation, CBT offers many other benefits. First, depending on the level of instruction required, CBT can be more cost effective than traditional methods. The initial outlay may still carry a heavy price tag, but the product is permanent, can be used and reused for many employees, and materials can be updated relatively easily. By customizing the training program, a company may decrease the time necessary to learn the material and may reduce costs. Further savings may be realized through reduced travel costs and on-the-job time lost to training. In addition, CBT programs are available 24 h/d and thus are available any time an employee has free time.

Another important asset of CBT is its acceptance by adults. These programs are often self-paced, and students may control when training occurs, effectively fitting it into their schedules as appropriate. CBT may also be less threatening than traditional programs because there is not a person immediately passing judgment on performance.

Finally, one of the greatest benefits of CBT for today's highly regulated (HACCP, GLP, ISO 9000 etc.) industry is the consistency of training. CBT can track student progress and ensure a minimum level of quality in training.

## ACADEMIC MODELS

### CENTER OF EXCELLENCE FOR POULTRY EDUCATION (COE)

The COE is an academic program founded and supported by the Midwest Poultry Consortium to continue poultry-specific training in the Midwest. The objectives of the consortium are to maintain and enhance Midwest poultry science programs (the COE), to facilitate recruitment of students to the field of poultry science, and to facilitate communication among the industry, academic institutions, the government, and the public. The COE represents one solution to the regional loss of poultry faculty and undergraduate poultry science courses. Students take a core of six poultry science courses during two summers at the University of Wisconsin and are taught by the collective faculty from the 13 participating states. This is not the classic form of distance education in that students travel to a host institution for traditional courses, but it does address a dilemma in a shrinking population of instructors by using the collective knowledge of a group to support a large training requirement. A large business might consider a similar approach to retain institutional knowledge or to use internal expertise to train replacement employees. There are several important benefits to the COE model compared with an independent department. By assembling students and instructors from distant points, the COE effectively fosters interpersonal and communication skills among the students and enhances communication among regional poultry faculty. The benefit to participating academic institutions is that, by utilizing their collective knowledge, they continue to address the training needs of their constituents but without the cost of maintaining a department.

If one translates the COE model to a business setting, we might envision managerial retreats or travel to specific courses in business skills. In essence, this approach to continuing education has been used effectively for a long time and

continues to serve an important role in business development. However, the COE approach, both academically and in business, is limited in scope. It is hard to imagine the same retreats or classroom settings when considering training 20,000 factory employees in concept of HACCP or even training 1,000 servicemen in new disease control measures. Traditional continuing education programs tend to be limited by the numbers of students that can be accommodated and by the number of employees that may be trained in a given period. In addition, the training of employees at multiple (international) sites is expensive, logistically difficult (languages), and time consuming.

#### THE UNIVERSITY OF ARKANSAS

The poultry program at the University of Arkansas has taken a different approach. This growing poultry department is addressing the need for poultry training throughout the state by supporting regional 2-yr agriculture programs with a technology-based poultry science curriculum. By partnering with local community colleges to supply the technology-based curriculum, the University of Arkansas rapidly and effectively reached a much larger population of students. The University of Arkansas curriculum consists of four courses: Introduction to Animal and Poultry Science, Avian Biology, Poultry Production, and The Integrated Poultry Industry to be offered through the Internet. Again, although this program takes advantage of the growing expertise at the university, it also represents an important advancement in agriculture training by extending educational opportunities beyond the traditional campus boundaries. CBT offers tremendous flexibility and could be used for a wide range of applications, including potentially graphic-intense agricultural courses. The University of Arkansas chose CBT over traditional methods or other distance education technologies because of the ability to rapidly disseminate information to a large population, the potential for lower costs for training, and the flexibility to address different learning styles. It is also expected that, as the curriculum and technology mature, these courses may serve as training tools nationally and internationally. These same reasons support the use of CBT for continuing education in the poultry industry.

## APPLICATION OF DISTANCE EDUCATION IN THE POULTRY INDUSTRY

As already alluded to, fewer people are being trained in poultry science, which will likely mean an increased need for in-house training [1, 3]. If the demand for training is relatively low (few employees), traditional methods such as short courses or on-the-job training may be sufficient. However, if demand is high (large numbers of employees) or if large distances separate the student population, some form of distance education (technology) may be appropriate. The poultry industry is rapidly changing and becoming increasingly global. The high degree of integration in the poultry industry requires sophisticated fluid management approaches as well as significant cooperation among business components. It therefore seems reasonable to expect that even business management positions would benefit from some level of agricultural knowledge. Indeed, one might make the case that the employee or business with the greatest understanding of the complexity of agriculture in general and the poultry industry specifically stands to be the most productive and profitable. Continuing education through distance education is likely to continue to be an important tool in training effective industry leaders and managers. However, continuing education of the broader workforce may pay greater dividends in the future.

As industries seek to improve the efficiency of all components, the job opportunities for unskilled workers will decline. If efforts to train unskilled workers through government- and industry-sponsored continuing education programs lags behind the demand, industry growth may be compromised. This is especially true in agriculture in which a decreasing population associated with or having exposure to agriculture further compounds the problem of agricultural industries seeking some level of agricultural knowledge in a job applicant pool. A further application of continuing and distance education will be in the growth of global poultry businesses. Although the production component of

the U.S. industry is relatively mature, the same may not be true for overseas operations, indicating an important target for distance education-based poultry training.

## CONCLUSIONS AND APPLICATIONS

If people and businesses are to respond to economic change, they will need a mechanism to obtain or disseminate a range of skills. Continuing education is a crucial resource for any enterprise to facilitate change, helping people and companies to minimize the deleterious effects of change. Distance education can provide the conduit for people and business to seize these new opportunities and to engage and shape change. Distance education can be used to teach a wide range of curricula, including task-specific job-related skills or transferable skills. Traditional academia is ill equipped to meet the rapidly changing training needs of any industry. Rather, the link between academics and the industry with regard to distance education and continuing education should be in providing expertise in learning approaches and in providing well-rounded graduates. Distance education technology and continuing education programs can be effectively used to make-up deficiencies in specialized areas and provide a skilled and adaptable workforce.

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