DeVry University's
iOptimize Integrated Learning System
(Optimizing the Power of Onsite and Online Teaching and Learning)

Patrick Mayers, Ph.D.
Professor of Statistics and
Vice President of Academic Affairs
DeVry University

Oakbrook Terrace, Illinois
pmayers@devry.edu

Stefanos Gialamas, Ph.D.
Professor of Mathematics and
Director
American Community Schools of Athens
Athens, Greece
gialamas@acs.gr

Abour Cherif, Ph.D.
Professor of Biology and Science Education and
Director of Curriculum For Math and Science &
Director of Academic Leader Development
DeVry University
acherif@devry.edu

Lin Stefurak, Ph.D.
Professor of Business and
Director of Academic Quality Assurance and Support
DeVry University
lstefurak@devry.edu

Bob Graver, MAT
Director of Instructional Design and Technology
DeVry University
bgraver@devry.edu

Karen Murkar, MBA
Chair of Centre for Financial Services
Seneca College of Applied Arts and Technology
Toronto, Ontario
karen.murkar@senecac.on.ca

DeVry University
Academic Affairs Department
One Tower Lane, 8th Floor - Oakbrook Terrace, IL., 60181
June 2006

iOptimize Integrated Learning System
(Optimizing the Power of Onsite and Online Teaching and Learning)

Abstract

This article outlines the experience of designing and implementing DeVry University's iOptimize Integrated Learning System (ILS) delivery model. IOptimize is the blending of onsite and online delivery modes to maximize the teaching and learning opportunities by integrating the best of both forms of delivery. Included are the necessary elements in designing and implementing the University's iOptimize Integrated Learning System. The article chronicles the experience of re-designing 300 plus courses, training and certifying more than 2,000 faculty and academic administrators, preparing more than 22,000 students, and adopting technology that was reliable and powerful enough to implement the iOptimize ILS.

DeVry University's iOptimize Integrated Learning System was developed based on the following four essential elements:

- Review of related literature
- Action research conducted within DeVry University
- Continuous assessment of the effectiveness of teaching strategies within DeVry University
- Recommendations of outside advisory board members representing those industries DeVry University's graduates service.

These four elements became the essential foundation for the implementation of this teaching/learning paradigm.

DeVry University is regionally accredited by the Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools (NCA). Through a system of 23 campuses, 61 university centers and online delivery, the University offers career-oriented undergraduate and graduate programs in technology, health care technology, business, and management to approximately 50,000 students.

Literature Review
Modes of Educational Delivery

The related literature indicates many categories of modes of educational delivery such as face-to-face, face-to-face supplemented by Internet access, online , closed circuit system, hybrid , independent project mode of learning, TV/textbook independent mode of learning, and team or independent projects. Several observations are worth noting. First, some of these modes of delivery overlap with

each other. Second, subcategories can be easily found under each mode of delivery. Third, many institutions have experience with many of these modes of delivery of learning materials. Fourth, a small number of institutions have studied and attempted to implement a hybrid mode of delivery of teaching materials – combining two or more delivery modes. Lastly, there have been a number of individual faculty efforts to modify a single course into some form of hybrid course delivery.

Brief Historical Perspective of Hybrid Course Development

'Hybrid', 'blended', 'optimized' and 'mixed' are four of the most frequently used terms in literature for teaching using more than one mode of delivery. There is however, no consistency in the literature as to the meaning of and use of each of these terms. The meaning of "hybrid course", for example, has several interpretations to different professionals based on the goals and the objectives in the minds of those who used the term in their research studies and/or educational institutions. Today, DeVry University is counted among the few colleges and universities that have an institutional based policy to develop and implement hybrid, blended, optimized, and/or mixed modes of delivery for all classes.

1. Institutional Initiatives:

A research study conducted at the University of Central Florida aimed to solve the problem of insufficient classroom facilities by combining online and offline resources to reduce classroom seat-time. The approach, known as M-courses (Mixed Courses), utilized hybrid course delivery. The study found that using a 75% onsite class time with 25% online class time model provided a higher success rate compared to onsite only course delivery. In addition, this type of hybrid course delivery helped to solve the original problem of insufficient facilities by enabling multiple classes or sections to meet in a facility where previously only one course class/section had been able to meet. (Newman 2001).

A similar research study on hybrid course delivery titled the "Hybrid Course Project" was conducted at the University of Wisconsin. In the study, seventeen instructors from five different UW campuses and representing various disciplines (such as humanities, social sciences, engineering, and profession) were engaged in the process of transforming their traditional courses into hybrid courses. The study compared the use of a mix of 70% of class time onsite and 30% online to a mix of 60% of class time onsite and 40% online. The study concluded that the mix of 60% onsite class time and 40% online was the optimal blended solution for hybrid course delivery.

Franklin University in Columbus Ohio has developed and implemented a type of hybrid course delivery at its campus. The University used a 'Centralized Team-Oriented Development Process' as it related to ensuring a quality academic product. The Instructional Designers, Jeannette Jones and Lou Ann Manning (2003), reported

significant success in attaining desirable outcomes and satisfaction with the hybrid model of delivery they developed and implemented at their campus.

In another relevant study conducted within the Mathematics Department of the University of Colorado at Colorado Springs, a mixed mode of delivery combined traditional mathematics instruction with distance learning using the Math Online Classroom Environment. In the onsite classroom "the instructor writes on a graphics tablet that rests on a podium in the front of the classroom. Students then see the images that the teacher creates projected onto a screen. The images from the graphics tablet and the instructor's voice are simultaneously streamed via the Internet to the course's distance students. Both the tablet images and the audio enter an archive for future playback by both onsite and distance learning students" (Abrams & Haefner, 2003, p. 1), any where and any time during the semester.

Similar in goal but different in nature is Harvard University's Internal Web Site lectures. Since 1999 Harvard has started videotaping a limited number of required courses per semester and makes them accessible to its students over the university's internal Web site within hours of class. The original goal was for the university to offer students a way to make up classes they missed for illness or other reasons, and a way to review lectures to crystallize the material. This delivery system has become popular with many Harvard students. However the model doesn't involve interaction with those students who watch them because they missed the classes for various reasons. According to university estimation, about 2,000 undergraduates accessed lectures on the Internet in the 1999-2000 academic year. However, about 70% watch between five and 30 minutes off a given lecture. This maybe because as one student puts it "I got to fast-forward the not-useful stuff to save time." (Jason, 2001)

2. Individual Faculty Initiatives:

Individual faculty efforts have also been reported in the literature and presented at conferences and workshops. While these efforts were not part of institutional initiatives, they were developed to solve specific needs and/or challenges the individual faculty encountered. Most reported individual initiatives met their intended goals and objectives.

As an example, Valerie Louisy-Louis, a faculty member in the Department of Management and Marketing at Kean University was trying to find a better way to motivate her students to read the class materials before they came to each class meeting. In doing so, every semester she was able to come out with a number of simple ways of integrating e-communication tools into her traditional course with the hope of increasing the efficiency and effectiveness of both her teaching and the students' learning. Throughout two academic years, she tried various ideas, modified some of them, abandoned those that did not work with her students and came up with new ideas. At the end of two years she realized that she could restructure her class to have include both onsite and online components. Louisy-Louis (2003) reported that her new hybrid class structure has worked for her and her students in achieving the intended goals and objectives.

Another successful example, similar to the model the Mathematics Department of the University of Colorado at Colorado Springs, has been implemented at DeVry University in Orlando, Florida. Dr. Dick Clehouse, a formal Dean of Academic Affairs and Dr. Clay Inman, Professor of Mathematics started using the Mimio device as an online math classroom environment to record Inman's math classes and make them available to students online to review at anytime. The device, which is connected directly into a laptop computer, is placed on the left side of the white board. The instructor uses colored felt pens with special sensors to write on the whiteboard. The Mimio device transfers the images from the writing, graphics, equations, etc., and the instructor's voice is simultaneously streamed to the computer and in turn via the Internet to students. The writing tablet images and the audio enter an archive for future playback by students on and off campus throughout the semester.

Adam Newman (2001), the director of the research group for Adventures, Inc. has made a significant observation related to the development of hybrid courses through both institutional and individual faculty efforts. He has strongly suggested to faculty that redesigning courses for hybrid delivery is a time intensive process. Faculty need both sufficient time and funding to develop their own courses and to enhance their instructional skills. Thus Newman strongly recommended that faculty use the University of Wisconsin-Milwaukee Learning Technology Center's Model Program as a blueprint for developing their hybrid courses/programs. Furthermore and because of such observations it was recommended that colleges and universities use a central approach to course redesign in developing and implementing courses for the hybrid mode of delivery. Newman (2000) has provided 10 specific "Lessons Learned" about hybrid course design and teaching for "faculty interested in developing their own hybrid courses, faculty developers interested in helping instructors create hybrid courses, and academic administrators interested in supporting hybrid courses." (Appendix 1)

DeVry University Integrated Learning System

Rationale

Since it's creation in 1937, DeVry University has been an institution that is student-centered and career-oriented that offers undergraduate and graduate education in technology, health care technology, business, and management. The University has always strived to identify the best teaching and learning methods as part of its own measure of institutional quality and academic success. The iOptimize Integrated Learning System was developed as part of this continuous improvement effort.

The Philosophy

For many years DeVry University has delivered high quality onsite instruction at both the undergraduate and graduate levels. Over the past six plus years DeVry University has demonstrated the ability to also deliver high quality online courses,

again at both the undergraduate and graduate levels. While both onsite and online teaching and learning can clearly accomplish the course and program objectives, these modes of teaching and learning are not identical, but rather complementary. Each mode of teaching and learning addresses the same components of the learning process (e.g., lecture, demonstration, labs, homework, quizzes), but the onsite and online modalities have relative strengths in their contribution to the teaching and learning process.

In what follows, we present a model of instruction that integrates instructor guided onsite and online modalities in supporting the various components of teaching and learning DeVry University has started since the late of 2003. We believe this model corresponds to the emerging dominant reality of the workplace, which combines onsite and online modes of interaction directed at the accomplishment of organizational objectives. We believe this model supports students by combining once a week onsite classes with the support of faculty and fellow students through online interaction throughout the week. Student success is measured based on high student performance, student satisfaction, high student retention, persistence to graduation and high career objectives.

To effectively implement the iOptimize Integrated Learning System at DeVry University, a user-friendly common course management system for all online and onsite courses was designed, developed and implemented. Key to the effective implementation of the new paradigm was the preparation, training and development of faculty and their academic leaders. In addition, preparing students to understand and accept the DeVry University Integrated Learning System was a necessary condition for the success of this University wide initiative. The cornerstone of the course conversions and faculty training and support was the delineation of the relative and complementary strengths of the onsite and online modalities as applied to the components of the teaching and learning process.

Conceptual Framework

DeVry University's iOptimize ILS model is based on semester credit hours but is delivered using 8-week sessions. The onsite and the online guided instruction is distributed as shown in table 1:

Table –1-
The Distribution of the Onsite and the Online Guided Instruction

Level	Course Credit Hours	Weekly Onsite Guided Instruction	Weekly Online Guided Instruction
One	1 credit hours	1 hrs	1 hr
Two	2 credit hours	2 hrs	1.5 hr
Three	3 credit hours	3.5 hrs	2 hrs
Four	4 credit hours	3.5 hrs	3 hrs
Five	5 credit hours	4 hrs	5 hrs

To optimize the most effective strategies for student learning with this instructional framework we utilize real time learning (synchronous) and 24/7 online learning (asynchronous).

Methodology Guidelines

There are specific strategies and methodology guidelines that apply to all courses in the iOptimize Integrated Learning System model. These strategies and guidelines govern and facilitate the development, delivery and learning process of the onsite and online components of each graduate and accelerated undergraduate course. As such they were both the cornerstone of the course conversions and faculty training and support. They continue to be key to the effective implementation of the iOptimize Integrated Learning System. The strategies and methodology guidelines address multiple elements of each course such as the course introduction, syllabus, min-lectures, demonstrations, discussions, homework, research papers, quizzes and exams, individual and group projects, case studies, problem types, role-plays, student presentations, debates, lab work, lab mentoring and assessment of student learning.

Essential Elements For Adapting the iOptimize Integrated Learning System

From our experience in developing and implementing the iOptimize ILS model we have identified the following essential components for successfully adapting this model of delivery: Curriculum Redesign, Technology Tool, Faculty Training and Mentoring, Academic Leader Training, Student Training, and Quality Assurances.

1. Curriculum Redesign:

Since 1973, Keller Graduate School of Management at DeVry University has used a successful model of centralized curriculum development, evaluation, assessment and implementation. In developing the necessary courses for the new Integrated Learning System, we adopted the same proven successful approach used for curriculum development. For each graduate course the existing curricula for the onsite and online course was examined. The examination was conducted by a specific curriculum development committee that consisted of experts in the content areas, experienced faculty who had taught the same course online, experienced faculty who taught the same course onsite, the director of the program in which the given course was housed, and experts in instructional design, pedagogy, assessment and evaluation. In the development of courses for the Integrated Learning System, the members of the committee relied on:

- The skills, knowledge, experiences, and attitudes needed in the market place as identified by outside advisory board members from the type of the industries that DeVry University graduates service.
- The rigorous examination of the traditional onsite courses and the online courses.
- The latest developments in instructional design, learning styles, and instructional theories.
- The Terminal Course Objectives (TCOs) which are learning objectives; they specify what task, behavior, or work a student must demonstrate or perform in order for a teacher to ascertain whether learning took place, based on outcomes that are derived from the TCOs The TCOs are derived from programmatic objectives fitted within the time constraints of a session or semester.

2. Development of Technology Tool

In designing the iOptimize Integrated Learning System at DeVry University we considered online platforms that could provide an efficient and manageable way of interacting with the students as well as the variety and user-friendliness of the platform's course functions. eCollege was chosen as our main online platform provider and the bases for the platform technology training for the iOptimize initiative. **It was chosen because of the eCollege's ability to provide all of the hardware, software and support services under one roof which allows eCollge to offer a single-point accountability to assure programs provide a high-quality experience for students.**

Three primary tools of the iOptimize online platform include course materials, threaded discussion and the grade book. Course materials enable the faculty to position the information so that it makes the most sense for them as users. In addition, the platform allows faculty to place links to files, images or web links in context of the materials. When reviewing the discussion area we found that manageability is the key to successful facilitation of the discussions. Threading capability, highlighting of instructor postings, the ability to sort by date or author and to assess whether a posting has been read prove extremely beneficial to the instructor as he/she guides a discussion.

The platform's Gradebook tool allows faculty to pull in and compile any student work that needs to be evaluated including the discussions, quizzes and exams, journals and papers in most common formats. Access to view feedback on the quizzes and exams is easily controlled. Another powerful feature is the capability to provide automated feedback in the case of the quizzes and exams as well as feedback customized per item and for general comments. The ability to provide comments to each student is available for all student work including the discussions and this capability is essential given that students most often want to know why they received the grade they did.

3. Faculty Training and Mentoring:

A strategic plan was developed and implemented to train graduate and undergraduate faculty to teach courses in the iOptimize model and to provide systematic support and mentoring during both the training process and the initial delivery of iOptimize courses. The process of implementing the plan included four major initiatives: a) Training Facilitators b) Establishing Criteria for Successfully Completing The Faculty Training Program c) Implementing the Faculty Training Program and d) Faculty Mentoring. This meant that in order to successfully implement the plan, initially a large number of professionals had to be recruited and selected for training as facilitators and/or mentors to faculty.

a. Training Facilitators

In this initiative we adopted the 'Train-the-Trainer' model. Several faculty, academic leaders and staff were trained and certified by the designers and developers of the iOptimize ILS to become Master Trainers. The Train-the-Trainer program initially consisted of three main courses: a Platform Technology Course (PT101), an iOptimize Methodology Course (OM101), and a third course, 'How to Train and Mentor Faculty' (HTM101). In turn these Master Trainers trained and certified 35 facilitators (Trainer/Mentors) to deliver PT101 and OM101 to faculty.

A similar strategy was adopted to train and certify 7 academic leaders, including Curriculum Managers, Department Chairs, and Deans, to train and mentor additional academic leaders. By the end of the year of 2005, there are 125 master trainers within DeVry university system.

b. Faculty Training Program:

Since April 2003 more than 2500 faculty members were trained and certified to teach graduate and undergraduate iOptimize Integrated Learning System courses.

The faculty's training program included these elements:

- Specific electronic course 'shell' for each iOptimize course (Master Course Shell).
- Training component focused on both the web based course management tool (eCollege) used in this initiative and on the methodology of iOptimize delivery
- Mentoring support for the first eight-hundred faculty training participants to assist in customizing the given master course shell into his/her own personal course shell.

An iOptimize Master course shell is formatted for each of eight weeks and contains items such as lectures and/or presentations based upon terminal course objectives,

course syllabus, examples of homework, exams, case studies, web-links, topics for discussion, and three weeks of lesson plans.

c. Criteria for Successfully Completing The Faculty Training Program

DeVry University's commitment to the iOptimize ILS delivery model is reflected by the continued position of its leadership to allow only certified faculty to teach iOptimize courses.

A faculty is certified if and only if they have successfully completed the iOptimize training and the development of their own customized course shell. The criteria for successfully completing the iOptimize training is the following:

- Completion of all assignments
- Completion of all quizzes
- Active participation in threaded discussions

d. Faculty Mentoring:

Initially, faculty mentoring was a very important component for the success of the iOptimize ILS initiative. It provided individual faculty support given by a certified mentor and content expert for a total of 12 weeks. Each faculty received four weeks of mentoring support prior to his or her first iOptimize course delivery and support for 8 weeks during the first iOptimize delivery session.

The mentoring processes included:

- Guiding the faculty to identify and adopt the best teaching methodologies that would fit the instructor's style for both the in class and online portions of the course.
- Observing the progress faculty made during the customization of their own iOptimize master course shell.
- Exchanging teaching and learning ideas that were suitable for the iOptimize learning delivery.
- Supporting the faculty to resolve any platform/technology problems.

As the numbers of certified faculty throughout the system increased and exceeded one thousand certified faculty, the formal mentoring program was discontinued. The decision to discontinue formal mentoring was based upon the fact that faculty new to iOptimize ILS could now access one-on-one support and assistance via any number of certified colleagues and academic staff at their own campus or center.

4. Academic Leader Training:

Academic leaders who are accountable for faculty and delivery of iOptimize courses also completed the iOptimize training and became certified. Certification is necessary for these leaders to understand, embrace, provide support and quality assurance for successfully implementing the iOptimize course delivery model.

5. Student Training:

In addition to training and supporting faculty, training and preparing students to participate in the iOptimize ILS courses was equally important. A number of strategies were developed and implemented to prepare students. These strategies included:

- The development and distribution of a comprehensive training course for students focused on the course management tool (eCollege platform).
- Open discussion forums with students, faculty and support staff.
- The establishment of the 24/7 Help Desk.
- Distribution of answers to frequently asked questions (FAQs) via CD or Online.

6. Quality Assurances:

Quality deals with how to deliver the knowledge and know-how that are intended in an educational program (Tribus, 1995) and how the knowledge and the know-how best fit for use to achieve high performance and satisfaction (Juran and Gryna (1980). The literature review indicated that today's colleges and universities are faced with two critical issues that effect how to achieve their goals and missions: quality assurance issues and quality enhancement issues. Quality assurance schemes aim "...to ensure that teaching and learning courses reach some usually undefined minimum level of acceptance." Quality enhancement schemes aim "...for an overall increase in the quality of teaching" (Kember, 2000, pp. 6-7) that result in high quality "student performance and satisfaction." (Mayer, Ricordati & Carter, 1995) DeVry University applies quality assurance (QA) processes in five areas regarding the iOptimize course delivery model: (1) Faculty and academic leaders training (2) Course content (3) Facilitator performances, and (4) Course delivery satisfaction. In addition, in order to provide a comprehensive evaluation of the success of the initiative at the university level, a quality assurance called the Core Team committee was established to be accountable for the overall success of the initiative.

a. Faculty and Academic Leaders Training:

A number of processes and mechanisms were developed and implemented to evaluate the quality of the faculty and academic leaders training as well as to provide continuous feedback of how to modify the training processes to maximize the performance. These processes and mechanisms included faculty evaluations, facilitators weekly report, quality assurance supervisor monitoring the training activities and providing frequent reports as well as a final report, and training course observation done by supervisory team members of the iOptimize Integrated Learning System.

b. Training Course Development:

Initially, the iOptimize ILS training consisted of two courses, PT101-eCollege platform training and OM101-iOptimize Methodology training. Each of the two courses ran online over twelve consecutive days. The training has since been redeveloped into a single comprehensive course, iOP101 based upon continuous improvement feedback. The content as well as the delivery methodologies of the program were constantly examined and or modified at the end of each training session. The members of the iOptimize initiative team based their modifications on a) faculty evaluations b) recommendations given by the stakeholders and c) concern raised by stakeholders who took active part in the training process. The program has been through five different iterations as a result of this continuous improvement process. Continuous improvement is an imperative aspect of iOptimize initiative and thus all inputs were highly valued and used as a part of the quality assurance process as well as the course development process.

Feedback from faculty also led to the development of advanced iOptimize faculty training in the form of eight tutorials. The desire and need for further training beyond the initial iOptimize certification training included both technical and pedagogical training. Following is a list of the tutorials developed thus far, based on feedback from faculty teaching iOptimize courses.

1) Creating Links-In this tutorial faculty review the steps to create a link within their course shell. When a student clicks the link created, they will be taken to the item the faculty specified such as a file, document, or other web site

2) Exam Builder-This tutorial guides faculty step-by-step in using the DEP eCollege Exam Builder. They learn how to:

- Create an exam, test or quiz as a content item.
- Set the exam parameters (access dates, duration etc.).
- Add various types of questions to an exam, test or quiz including multiple choice, True/False, multiple answer, matching, short answer and essay questions.
- Set up and use a Test Bank.
- Develop and use Question Pools.

3) File Manager-This tutorial helps faculty to begin to use File Manager to manage the various files that are included in a course shell. Topics include up/downloading files, creating folders, deleting files and folders and working with multiple files.

4) Gradebook-This tutorial goes step-by-step through the processes involved in using the DEP eCollege Gradebook. Faculty begin by setting up the gradeable items in their course. They review how to enter students' grades, both one student at a time and as a group and learn how to set up the Dropbox and assign grades to Dropbox submissions.

5) Group work for iOptimize- The group work tutorial reviews the research behind group work and offers some strategies for creating successful groups. The final two units provide ideas for in-class and online group activities. An explanation of setting up groups using the DeVry E-Learning Platform is also included.

6) Offline Exam Building-This tutorial introduces a software tool that will allow faculty to create and edit exams offline (while not connected to the Internet). Exams created using this tool can be uploaded to the DeVry eLearning Platform (DEP), downloaded from DEP, and/or printed for in-class distribution.

7) Threaded Discussions-This tutorial helps faculty to develop online discussion facilitation skills.

8) Web Research-This tutorial explores research using the World Wide Web as well as some suggestions for creating student assignments that make effective use of the Internet in addition to locally available DeVry University Library resources.

c. Facilitator Performance:

Each week the facilitators of the faculty training groups were asked to complete a 'one- minute paper' assessment responding to the question-"How confident do you feel that your participants have the basic skills to use the platform and the knowledge to move parts of their lesson delivery online?" (see Appendix 2)

d. Course Delivery Satisfaction:

i. Classroom Observations

As a part of our quality assurance process, classroom observations are required both onsite (in the classroom) and in the online component. The rigor is greater for new faculty, requiring two classroom and online visits. For continuing faculty, two observations are recommended while one observation is required. The reviewer uses a check sheet to assure that high quality standards are met. If areas for improvement are identified, a meeting is scheduled with the instructor to review the areas identified and to make recommendations for improvement. The reviews and feedback are conducted in a spirit of helping with the faculty's performance. (See Appendix 3)

ii. Student Course Evaluations

In addition to classroom observations, DeVry University surveys students to evaluate the performance of the instructor as a part of our quality assurance process. This survey is identical for all iOptimize Integrated Learning System Courses including graduate and undergraduate accelerated courses. Both the instructor's onsite and online performances are evaluated. The survey is administered using a web-based system. The data is compiled and analyzed and made available to academic administrators one week after the survey period is complete. Faculty performance surveys are taken very seriously. If performance issues are identified, once again a meeting will be held in an attempt to improve the faculty's performance.

e. University-wide Initiative:

As part of its own measure of institutional quality and success, DeVry University formed a committee consisting of representatives of all areas of the university that are associated directly or indirectly with the implementation of the iOptimize Integrated Learning System project. This committee is called the Core Team Committee and its members come to the meetings prepared with written status progress reports to share with committee members. The regular report contains the following:

- Planned work and current status (prior 2-week period).
- Outlook for upcoming work (next 2-week period).
- Concerns, issues, and risks.
- Update for those tasks that may be in progress and were scheduled to start and/or finish by a certain date.

In addition to the usual reports from each functional area, special reports may be included to cover related topics. Furthermore, representatives from the Core Team committee report to the DeVry University management team once every two weeks. Questions from the management team are filtered back to the members of the Core Team Committee for review and response.

The Challenges of the iOptimize Initiative

Like any new initiative, and in the case of iOptimize ILS, an initiative impacting more than 22.000 course takers, we encountered a number of challenges of various types and at various levels. The experience of implementing the iOptimize initiative as well as the data and information that has been collected have helped us to anticipate the type of challenges that we might face in our continued efforts. The following are a few examples of these challenges.

Challenges We Have Faced:

There are a number of challenges that we have faced and have had to overcome in order to complete the iOptimize initiative and achieve our main goals and objectives. These challenges include:

- Lack of technology skills on faculty's part and/or fear of learning new instructional tools and technologies.
- Geographical challenges-miles and time zones separating the iOptimize team and facilitators, administrators and faculty.
- Initial course platform issues-volume of work relative to eCollege server capacity.
- Incessant pace for facilitators- timelines necessitated that training of faculty be a continuous process with new sections rolling out just as prior sessions ended. As such the team of facilitators were scheduled continuously.
- Time constraints of faculty training participants-faculty were required to participate in the courses at least every other day over 24 consecutive days placing a strain on many faculty participants who also have full-time careers in industry.
- State requirements regarding the actual student class meeting hours. Such requirements differ from state to state.

Challenges We Are Anticipating to Face:

- The timelines under which additional master course shells must be developed are extremely tight. The University continues to implement the iOptimize system of teaching and learning into a variety of academic programs. Without pre-developed master course shells iOptimize training and delivery of such courses is not possible.
- Technology courses require that faculty be trained in the use of virtual labs as well as the initial iOpt101 training. The additional training requires time and budgetary resources.
- Platform capacity may become an issue as additional courses are developed and delivered in the iOptimize format. Currently there are over 29,000 eight-week DeVry University faculty iOptimize inventory course shells in place.

- Additional helpdesk support both for students and faculty may become necessary as more courses are delivered in the iOptimize format.

- Continuous institutional commitment and support for the iOptimize initiative. Based on the two following facts, the institutional commitment and support could be modified or changed: a) every year there are many institutional initiatives that are introduced and compete for the same limited funding and support. b). The current status of the national economy and its impact on student enrollment in higher education.

- The differences in structure and the operational processes between the graduate and the undergraduate schools at DeVry University might present logistical problems in the implementation of the iOptimize initiative university wide.

- The necessity to keep the course shells current related to text changes and/or new topical content presents a significant challenge. A specific protocol must be followed for updating course shells. Due to the to the large number of inventory shells for each course, it is important that Curriculum Managers work closely with faculty to keep shells contemporary..

Conclusion

In summary, this article has provided an overview of DeVry University's institutional initiative began in 2003 to adopt and implement a new paradigm for instructional delivery at the graduate and accelerated undergraduate level. The success of such an undertaking is dependent on the commitment to curriculum re-design and foremost to the training of faculty and academic leaders. The comprehensive iOptimize ILS training originally consisted of two courses, PT101-eCollege platform training and OM101-iOptimize Methodology training. Each course ran online over twelve consecutive days. The training has since been modified and consists of a single online course (iOpt101) that runs over 14 consecutive days. Active participation in each unit of each course including participation in discussions, assignments, quizzes etc. continues to be the requirement for successful completion leading to iOptimize ILS Certification. In order for a faculty to teach a DeVry University iOptimize course he/she must be certified by successfully completing the iOptimize faculty training.

Facilitators are accountable for ensuring that faculty are completing assignments and participating as is necessary to successfully achieve the outcomes of the training course. After a given faculty has completed the course, s/he is expected to review and modify to his or her teaching style the iOptimize course shell provided for his or her DeVry University course and deliver this course to students in a future session.

Through the iOptimize Integrated Learning System, DeVry University provides students with both face-to-face teaching and learning and the alternative method of online, asynchronous teaching and learning. Students are able to access knowledge and they become efficient and effective in processing information. They build trust in themselves to accomplish what is relevant in their lives by efficiently capitalizing on what they know and like. The integrated learning system method allows them to earn a bachelor or master's college degree in two to three years.

The iOptimize Integrated Learning System also provides opportunities for instructors and staff to develop and grow professionally, intellectually, personally, and financially. Faculty and staff will have the necessary knowledge, skills, and education in order for them to be 'in the driver's seat' into the future in an extraordinarily competitive business environment.

It is an exciting time for DeVry University and all faculty and students who are involved in iOptimize ILS course delivery across the graduate and undergraduate course offerings. The recognition of the iOptimize ILS by various professional organizations has validated the importance of the initiative. IOptimize ILS is part of a journey for DeVry University, not a destination. The University is on a journey of continuous improvement to enhance students' performance, increase student satisfaction, improve student retention and persistence to graduation, and continue high quality career objectives, for DeVry University graduates. We are confident that this paradigm has enhanced our ability to achieve the benchmarks of the journey.

Bibliography

Abrams, Gens and Haefner, Jeremy (2002). Blending Online and Traditional Instruction in the Mathematics Classroom. *The Technology Source*, September/October 2002. Available online at http://ts.mivu.org/default.asp/show=article&id=970.

Cherif, A, Stefuark, L., Mayers, P, and Graver, B. (2004). *DeVry University iOptimize Integrated Learning Syestem: The Best of Onsite and Online Learning*. Exemplary Model of Administrative Leadership Award Presented at the *2004 AAUA National Assembly* in Chicago, June 23-26, 2004.

Garnhamm, Carla and Kaleta, Robert (2001). Introduction to Hybrid Courses. Milwaukee, Wisconsin: Learning Technology Center University of Wisconsin-Milwaukee. (http;//www.uwm.edu/Dept/LTC/hybrid.html.)

Gialamas, Stefanos and Cherif, Abour (2003). DeVry University Hybrid Courses. Paper presented at the 2003 *The Forum For Teaching In Higher Education*. Louisiana State University, April 27-29, 2003

Jason, Leila. (2001, August 22). Web lectures make it easier for students to skip classes. *The Wall Street Journal*. http://interactive.wsj.com/fr/emailthis/retrieve.cgi?id=SB998428059545963918.djm

Jones, Jeannette and Manning, Lou Anne (2003). Improving Curriculum Quality by Design. Paper presented at the 2003 *The Forum For Teaching In Higher Education*. Louisiana State University, April 27-29, 2003.

Juran, J. M. and Gryna, F. M. (1980). *Quality Planning and Analysis: From Product Development Through Use*. New York: McGraw-Hall Book Company.

Karssop, Mark (2003). Ten Ways Online Education Matches, or Surpasses, Face-to-Face Learning**.** *TECHNOLOGY SOURCE*: *A p u b l i c a t i o n 0 F THE MICHIGAN VIRTUAL UNIVERSITY*, May/June 2003.

Kember, David (200). *Action Learning and Action Research*. Kogan Page, London (and Stylus, Stirling, VA)

Leonard, Dorothy A. and DeLacey, Brian J. (2002). Designing Hybrid OnLine/In-Class Learning Programs for Adults. Boston: Harvard Business School (Unpublished paper; used by permission from the author).

Louisy-Louis, Valerie (2003). Adopting E-Communication to Optimize Teaching and Learning. . Paper presented at the 2003 *The Forum For Teaching In Higher Education*. Louisiana State University, April 27-29, 2003.

Mayers, P., Ricordati, T., and Carter, D. (1995). System-supported teaching and learning to improve student performance, satisfaction, and retention. In

Roberts, Harry V. Roberts (Ed). *Academic Initiatives In Total Quality For Higher Education*. Milwaukee, Wisconsin: ASQC Quality Press.

Murkar, K., Stefuark, L.& Cherif, A., (2004). IOptimize of DeVry University - The First Six Months, The Next Six Months: Supporting the Best of Both Worlds. Two papers presented at the 2004 *The Forum For Teaching In Higher Education " Keeping the Touch in Technology*. Louisiana State University, April 18-20, 2004.

Newman, Adams (2001). *Case Study of the E-Learning Story at University of Central Florida*. Boston, MA: Eduventures, Inc. (Eduventures.com, Inc.)

Ravaglia, R. (2001, August/September). The case for blended e-learning. *Education West*, 12-13.

Roberts, Harry V. (Ed) (1995). *Academic Initiatives In Total Quality For Higher Education*. Milwaukee, Wisconsin: ASQC Quality Press.

Wicker, Martha (2003). Effective Strategies for Integrating Communication Tools In Instruction. Paper presented at the 2003 *The Forum For Teaching In Higher Education*. Louisiana State University, April 27-29, 2003.

DeLacey, Brian J., and Dorothy A, Leonard. "Case Study on Technology and Distance in Education at the Harvard Business School," *Harvard Business School Working Paper Series,* No. 02-026, 2001. '

Zahara, Shaker A., and Gerard George. 2002). Absorptive capacity: A review, reconceptualization, and extension. *The Academy of Management Review, pp.,* 27, 2, April 2002.

Appendix -1-
Newman's "10 Specific Lessons Learned"
About Hybrid Course Design and Teaching

Lesson # 1: There is no standard approach to a hybrid course.
Lesson # 2: Redesigning a traditional course into a hybrid takes time.
Lesson # 3: Start small and keep it simple.
Lesson # 4: Redesign is the key to effective hybrid courses to integrate the face-to-face and online learning.
Lesson # 5: Hybrid courses facilitate interaction among students, and between students and their instructor.
Lesson # 6: Students don't grasp the hybrid concept readily.
Lesson # 7: Time flexibility in hybrid courses is universally popular.
Lesson # 8: Technology was not a significant obstacle.
Lesson # 9: Developing a hybrid course is a collegial process.
Lesson # 10: Both the instructors and the students liked the hybrid course model.
.

Appendix -2-

One Minute Paper Assessment

Below are excerpts from the weekly 'one minute paper' assessments submitted by facilitators in answer to the question-"How confident do you feel that your participants have the basic skills to use the platform and the knowledge to move parts of their lesson delivery online?"

From John:

"Participants support the effort which is half the battle. They are comfortable with the new on-line medium and now need some experience in using it. I am confident that the faculty will be capable of making the transition. Each term will bring new learning (as it has for me). I believe the transition will be successful."

From Jennifer:

"I feel confident that those who have taught before will do very well. I am not as confident (about 85%) about those who are completely new instructors. Their ability to work with this format will depend on their basic computer skills, most of whom I believe are at a good level. However, it will also depend on their ability to integrate the teaching style and knowledge into the whole Keller or DeVry teaching philosophy - this can be supported by the TEC and EIT and/or the Center Director's guidance. I think it will be difficult, however, for them to digest all this quickly and effectively for the July Session. To ensure a successful integration, I would suggest that we pay particular attention when mentoring them and enlist the help of their CDs to make sure there's plenty of follow-up on their progress and to make them feel at home with asking questions."

Appendix –3-

"DVU Faculty
Observation Form -- .