Creating a technology-rich associate degree program in office administration

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Abstract: Providing ideas to others who wish to explore the process of making a degree program technology rich is critical to faculty who are building best practice programs. Technology rich is defined here as technology-filled environments and curriculum that include innovative hardware and software combined with technologically enhanced activities and assessments. This literature review reveals a research gap in several areas relating to best practices with respect to the impact of integrating technology into teaching and learning. More quantitative studies that discuss research methodology and professional development in technological pedagogy are needed. Often research efforts have yielded no common definitions, significant differences, or guidelines to measure effectiveness. This article posits arguments for a more systematic study of how technology integration occurs within our schools, what increases its adoption by teachers, and the long-term impacts that these investments have on both teachers and students (Lawless & Pellegrino, 2007). In addition to the program background and findings on technology in education, this article also articulates a case example of a technology implementation in an associate degree program. Concluding with the students' perspective, insight is offered into this program's continued effort to bridge the gap of the digital divide for a student population of predominantly rural, underserved, and disadvantaged through a student-focused atmosphere and curriculum (Goode, 2010). A technology transformation and semester transition of an Associate of Applied Business degree program for office administration (OA) in rural Ohio is delineated.

Keywords: technology; office administration; education; curriculum; online; faculty; students

Introduction

The use of technology is at the forefront of society and education today. Technology in education requires a thorough understanding of this dynamic environment and the cooperation of faculty, administration, community leaders, and students. It is important for any technical degree program to continually assess hardware, software, and faculty development in conjunction with community and student needs thus making a technology rich program. Technology rich is defined here as technology-filled environments and curriculums that include innovative hardware and software combined with technologically enhanced activities and assessments.

Today's college students require exposure to a variety of software applications, innovative electronic devices, alternative delivery methods, and 21st century technology, including social media as it relates to the business world. Integrating innovative software and laboratory hardware, community advisory board involvement, and faculty leadership are diverse factors and all play a role in ensuring a technology program is on track for student success. Associate degree programs are limited as to the number of courses and hardiness of course

delivery. Furthermore, many technical degree programs include underutilized equipment and outdated or seldom used software. A common theme in faculty discussions reflects faculty development needs going unmet and programs in need of updating with regard to technology used in the delivery of diverse courses (Sorcinelli, 2006). Also noteworthy is the need for the students' perspective and insights, with a focus on bridging the gap to stay current with the effects of the digital divide. Faculty want to avoid perpetuating the digital divide inequalities by offering a student focused atmosphere and curriculum (Goode, 2010).

Guidelines for making an office administration (OA) program technology rich as well as applications for applying this methodology to other programs was warranted. This article outlines the way that one program was planned, analyzed, researched, designed, and implemented during a semester transition. The program outlined in this article benefitted by incorporating alternative forms of instruction, design, and delivery. Each of the 17 quarter-based core courses of a program located at a university in a rural town in Appalachia were reviewed. Some of them were altered considerably and all had prescribed changes for the transition to semesters. The technology-rich redesign followed steps similar to the Systems Development Life Cycle (IT Governance, 2014) of planning, analyzing, designing, implementing, and maintaining. Options were researched, beginning with planning and analyzing the current OA programs' content, curriculum, and technology in conjunction with faculty, community and student needs. After the design phase, the revised program was tested and implemented with emphasis on continued maintenance. The resulting student perspective concludes this research, and recommendations for maintaining a technology-rich program were made.

OA Degree Description

This Associate of Applied Business degree in office administration is geared towards those who will work in office settings as administrative assistants, office supervisors, payroll and accounting clerks, receptionists, graphic or desktop designers, and multiple areas of business support. Optional interdisciplinary tracks within the degree included medical, legal, and a newly developed business analysis set of courses. The mission of the program is to prepare students for highly technical, entry-level positions often in specialized roles. These positions are in demand and expected to grow by an average of 14% between 2010 and 2020 with growth expected for medical (41%) and legal (4%) secretaries as well (U.S. Department of Labor, 2012). Job opportunities should be best for applicants with extensive knowledge of software applications and advanced communication and computer skills (U.S. Department of Labor, 2012). This job availability presented hope and opportunity for a student population located in Appalachian territory which is a demographically disadvantaged area of south and central Ohio.

Rationale and Motivation for Program Technology Changes

A primary motivation for major transition updates to the program was change at the state level in education policy in Ohio. In 2008, new state mandates for 17 of Ohio's universities and colleges included creating similar academic calendars and courses across the system. Thousands of courses were reviewed by faculty panels to ensure all transfer classes met the high quality and rigor that Ohioans expect. A panel convened with the Ohio Board of Regents and the Department of Education to develop articulation agreements and create common career field technology content standards for Administrative and Professional Support programs to begin in fall 2012.

The establishment of the University System of Ohio in 2008 created new academic opportunities for university resources. New degree programs, distance learning, and a common calendar was the goal. A semester time period across the system would provide a longer time period for absorbing materials and more breathing room for the new traditional students that attend primarily regional campuses to complete projects while juggling home, family, and jobs (Ohio University, 2013). In addition, the academic year would end sooner providing the opportunity for longer, more meaningful internships. As a result of this move to a semester system, an opportunity was given to take a closer look at an existing program in OA.

Transitioning from a quarter to a semester system while upgrading classroom technology is a challenge for any program. Equally stimulating is the inclusion of new procedures and methodologies for a technology-rich program with a variety of delivery options (online, blended, hybrid, and traditional). Understanding the ubiquitous nature of technologies on university campuses is a catalyst for change and structure between mobile phones and iPods versus desktop computers and application software. The research began by planning the steps necessary for change and analyzing the current condition of this and other OA programs.

At the start, courses in the existing program that could benefit from the addition of technology were reviewed. Comparisons were made with like programs throughout the state in a continued effort to reduce the inequalities between universities, their programs, and their courses, keeping in mind that courses should easily transfer between institutions.

The Change Process Analysis

The program experienced a period in which only a few of the courses were being updated with the latest versions of application software. Overall, the entire program of courses required a plan to include and update technology in both the delivery and instruction as well as in the use of application software for practice, further development, and completion of assignments simulating the business support role of the administrative assistant as closely as possible. The pre-existing level of technology used by faculty in delivery of courses was limited to textbook author "canned" presentations for lecture. Prior to the transition to a semesters system with the updates described here, the Microsoft Office 2007$^{©}$ suite of applications was a primary portion of the curriculum in five of the core courses, missing the true university level of understanding how to communicate with these tools beyond the scope of learning these pre-packaged applications. Other courses contained the required depth of knowledge but lacked the technical aspects necessary for success beyond the classroom.

Technology and Education

Hooper and Rieber (1995) ascertained that educational technology differs in comparison to technology in education. Musawi (2011) defined educational technology as the study and ethical practice of facilitating e-learning, which is learning and improving performance by creating, using, and managing appropriate technological processes and resources. The term educational technology is often associated with instructional theory and learning theory (Musawi, 2011). Educational technology includes other systems used in the process of developing human capability to learn and complete assignments. Software, hardware, Internet applications (e.g., wikis and blogs) are included in educational technology (Musawi, 2011). There is still some debate on what these terms mean and how they are used.

Educational technology has involved applying ideas from various sources to create the best learning environments possible for students. Educational technologists also have asked questions such as how a classroom might change or adapt when hardware or software is integrated into the curriculum (Hooper & Rieber, 1995). This integration meant that the curriculum and setting may also need to change to meet the opportunities that the technology may offer (Hooper & Rieber, 1995).

Technology in education is most simply and comfortably defined as an array of tools that might prove helpful in advancing student learning (Musawi, 2011). Technology in education involves hardware and software and how they might be used to support traditional classroom activities (Musawi, 2011). Educational technology itself has consisted of two major parts: one is teaching technology and the other is learning technology (Musawi, 2011).

Revising a technology-driven program like OA required understanding how technology flows throughout the degree program. Technology is used in college courses in a three-fold method. First, technology supports teaching by aiding the organization and delivery of content. Second, it supports learning by providing software applications and Internet capabilities for extended learning opportunities for students and completion of assignments. Last, technology is at the core of what the OA program is; technology is used in the support of business to plan, produce, communicate, organize, and train. This is the role of the administrative assistant.

Teaching with technology in this program includes the opportunity to use Blackboard as a course management system for face-to-face and hybrid offerings, technical presentations for lecture, and Web-based learning and practice tools. In order to better communicate with students and organize course content, the current faculty needed to begin or further extend their use of a learning management system for all courses going beyond the basic use of email as a communication tool outside of the classroom.

Beyond uses of basic presentation software to support lecture, kinesthetic and discovery methods of learning must involve the use of computer technology. Internet and search engines, social media, student smart phones, classroom management software, tablet pcs, and other devices and applications support learning, while mimicking the business world's methodologies for producing, communicating, and training. For the purpose of this research, educational technologies involved teaching the tools of the trade (e.g., Administrative Assistant/Business Support). Both ideologies were involved in this transition plan with communication and critical thinking skills at the core.

Goals

In 2009, the existing program offered applications' skills in only five core courses. Certifications were seldom budgeted or tied to those courses. LMS software was underutilized by faculty if used at all. Connections to the community were faltering. The program lacked a full-time research focused faculty for several years. The primary goal of this renovation was to include the latest enhancements for furthering students' fundamental knowledge of technology and communicating through computers, applications, and Web 2.0 features, while increasing critical thinking and problem solving skills. Courses would be combined, removed, and replaced throughout the curriculum to create a 21st century technical model.

The revised OA program would include a rigorous technical and general educational curriculum unique only to a university experience. For example, no longer would students be taught only the basics of a packaged word processing application. The revised application course

in word processing now includes all options for obtaining access to word processing (free and monetary). The course celebrates a true university level of knowledge by including elements of visual literacy, human information processing models, cognitive overload, understanding use of color, and unique business uses of word processing software not covered in the basic use of the application. As a final boost, the course now includes more than just the option to test for certification. This is more in line with the program level learning outcome of outside organization certification testing (e.g., MOS[©] - Microsoft Office Specialist in Microsoft WORD). This certification testing has been available off and on in the past as the budget allowed. However, more support was needed in the courses to ensure positive outcomes for the students. Additional planned changes to the application courses included new textbooks, assignments using a vendor's practice exams, and case-based problem solving activities. A better understanding of the uses of these production software applications (word processing, spreadsheets, databases, and presentations) in general has been implemented in the curriculum and repeated throughout the program.

It is important to note the student perspective and the efforts of this transition to bridge the gap, noting that the digital divide still exists. Awareness of the concept of *technology identity* as an innovative theoretical and methodological approach to studying the digital divide, reporting interviews collected from students demonstrate multiple environmental factors contribute to the development of a technology identity, highlight the role of schools and universities as institutions which are perpetuating — rather than resisting — inequalities associated with the digital divide. (Lawless, & Pellegrino, 2007). Knowing how to utilize the campus technology is critical for academic success. However, technology prerequisites and testing for technology skills for college entrance is rare. The result is a range of student technology abilities among the student population. Females, low-income students, and students of color are the ones most underprepared for the digital college environment (Goode, 2010). These are the populations primarily found in this OA program.

Program Change Rationale and Design Description

To define the critical focus areas and determine community and student needs, an analysis of the current condition of the OA programs and technical degrees including technologies being used in OA classes was conducted. The focus was on higher education courses delivered online, blended, and in traditional modes with the inclusion of social media and technology in OA classrooms.

Research and Analyses

Simulating what is often business proprietary software in the classroom was part of a new approach to a typical procedure of consulting advisory boards. A major portion of this conversion included attendance at technology-based conferences. Other similar programs were reviewed and internal conversations with faculty and the program advisory board (retired faculty, local business professionals, and program alumni) were held. The process drew attention to faculty needs and sparked their desire to be successful in the classroom. Motivated faculty made the time commitment, showed initiative, demonstrated leadership in the use of technology on campus, and collaborated on the use of technology in the program. Faculty success with

technology depends upon their willingness to try new things and integrate successes in the classroom.

Students were surveyed in the entry-level courses about their expectations of the program and what they needed to be successful in their chosen careers as part of an initial research project. Pre-semester conversion testing was conducted by the program coordinator through special topic courses. Student feedback was encouraged in the courses using selected lessons and topics. Additionally, external discussions with faculty, textbook publishers, and university leadership led to a combination of effort to transition to a technology-rich model for this OA program. This process set the tone for continual tech-rich updates that will support the program through the semester transition and beyond.

Job Market

The technological advances achieved in the past few decades have brought about a revolution in the business world, affecting nearly all aspects of a working life. The result is today's heavily technical workplace, where proficiency with complex phone systems, fax machines, and often networked computers, shared file resources (e.g., digital dropbox) are basic essentials. However, these much-praised advancements imposed dramatic changes in what is expected from workers and where and how they go about their jobs.

As new technologies become standard in the workplace, administrative assistant positions are moving towards higher skilled and more adaptive workers. In service, data analysis, and engineering positions, for example, most workers clearly need to be technologically savvy, even the secretaries who might be required to use complicated accounting programs, email, and other communication devices (Stanford, 2014). Technological skills are required coupled with a fearless attitude to prevent some workers from avoiding technology. Advanced technology is making the use of it simpler and easier, but the overall ease and comfort of a skilled individual is needed.

Business Technologies

When teaching with technology in any program, it is necessary to test, implement, and constantly update curriculum, dealing with new challenges brought forth by students and modifying teaching methods to accommodate these new situations. Although other academic degree programs are involving technology in their methodology, OA students are expected to leave a technically focused program knowing the latest in application software and how to use computerized methods for solving problems and communicating in the workplace. Whereas, educational technologies might not be consistently used or minimally included in the classroom of a general education course to deliver the information or for students to present assignments. The instructor has often used presentation software slideshows for lecture and a learning management system to manage the course and little else. Students may create presentations to share research findings that explain their papers or use word processing applications to type papers. They may have created electronic portfolios or Web pages, but this OA program does all that and more. A full understanding of current word processing applications, spreadsheet applications, or database applications is required to become certified, which employers are looking for in an administrative assistant, payroll clerk, or legal secretary. These are the tools of

their trade, and they will see these tools used by the instructor in a variety of situations that they can use to complete assignments or allow to spark their creativity.

Implementing and Maintaining the Technology Rich Program

Technology ushers in fundamental structural changes that can be integral to achieving significant improvements in productivity. Used to support both teaching and learning, technology infuses classrooms with digital learning tools, such as computers and hand held devices; expands course offerings, experiences, and learning materials; supports learning 24 hours a day, 7 days a week; builds 21st century skills where the rate of technology change can be faster than implementation into OA programs; increases student engagement and motivation; and accelerates learning. Technology also has the power to transform teaching by ushering in a new model of connected teaching. This model links teachers to their students and to professional content, resources, and systems to help them improve their own instruction and personalize learning (U.S. Department of Education, 2014).

Social Media in Curriculum Content

Incorporating social media elements like YouTube, Facebook, Twitter, and BlogSpot into a course not only enhances curriculum but also engages students with resources that are part of their daily routine. To ignore or disprove of the inclusion of social media and personal devices like cell phones in the classroom is a mistake in the process of creating a technology-rich program. Students must learn a balance in the use of these technologies. Asking the right questions is the beginning (Agee and Holisky, 2000) of engaging students, and our chosen research methodology focused on the following questions:
- From your experiences are you capitalizing on technological ideas for your classroom (Cohen, 2002)?
- Will the transition from a quarter's to a semester's system present opportunities and concerns that the addition of technology can resolve by adding, combining, eliminating and updating courses?

Faculty Development

The OA faculty are expected to always raise the bar for technology in education. Participating in and conducting training is part of being a leader in university settings, public presentations, and especially in the classroom. The challenges in education for the 21st Century encompass addressing a variety of pertinent questions surrounding the rapidly changing area of technology education, such as: What topics are important for the 21st Century? How does the Internet change the task of teaching? What is the role of the professor in a world of online learning? Educators in this field must be prepared to include technology (Schachter, 2009). These questions would likely be answered differently for this technology-based program than for other programs such as social sciences, yet no differences in answers not relevant to OA.

For college students the Internet is a tool for research, learning, and presentation of findings to their instructors. This program now goes a step further with the use of ePortfolios as examples of their work that can be used for employment opportunities, demonstrating their skills to future employers. In the revised program courses use the Internet to provide social media as it

applies to the workplace (e.g., document sharing, communication, marketing, free apps). The OA faculty need to be exemplary in their use of technology in the classroom and beyond. All have been practitioners employed full-time in public education and businesses that use technology and Intranet capabilities for first-hand knowledge of workplace needs.

Training, motivation, and preparedness make this program's new and existing faculty ready for the challenge. Teamwork was essential as faculty met to exchange information and experiences. More faculty began to introduce students to instructional elements using a Web-based learning management system (LMS). Although learning management systems are not new to higher education, many faculty lacked the training and motivation to use the tools. Time was taken to ensure comfort with using this system *in class*, ensuring that students choosing online courses would be better prepared. Feedback on course evaluations and instant reflections face-to-face were encouraged. Tenured faculty outside the program, information technology (IT) leaders, program alumni, and advisory board members offered advice and gave suggestions for creating a successful technology-rich program that would meet the needs of the community and technological trends in education.

Hardware and Devices

Schachter concluded that as cell phones with ever-expanding possibilities of texting, Web browsing, and game playing have multiplied in recent years, so have the concerns of educators and administrators about the distractions these devices can cause; college classrooms are not exempt (Schachter, 2009). Yet, there are opportunities. This program embraced technology and consider the opportunities these new technologies can create in the classroom. Laptop and desktop screens can create a physical barrier between students and instructors in our lab classrooms during instruction despite the goal to emulate the workplace (Schachter, 2009). Classroom management tools such as teacher mobility, group exercises, and lab management software for the instructor can keep this environment technology rich while still supporting an incredible learning environment. Schools and individual instructors are banning cell phones and various handheld technologies from the classroom. However, advanced wireless devices can be used as much for learning as for entertainment. Permitting smart phones allows students to take quizzes, check schedules, and complete course work requiring pictures, videos, and research. Consideration should be given to the prevention of cheating while using the devices (Bates & Poole, 2003). For example, assessment design can accommodate the availability of such devices. These devices can become part of the curriculum by capturing sound, video, and pictures related to the course topic. Again, classroom management combined with rules for use of technology that are clearly outlined verbally and in the syllabus on day one can create an environment where students understand how these devices can be used in the educational and later the workplace environment significantly and appropriately.

Support Systems

A campus-based Technology Learning Community (TLC) comprised of faculty leaders aided in course development and was tasked with ensuring a quality product. This community's rigorous training course on development of online and blended courses aided faculty members in completing the process of blended delivery certification and online course development. Online course plans included formal written approval by the Associate Dean, approval of the LMS

design, delivery of the completed course, and release of archived materials owned by the university. The community gave feedback and support to the designers throughout the process.

Maintenance

For hardware, software, people, and solutions maintenance is to be ongoing. Experience within this program has shown some textbook publisher Web sites fall short of expectations and desired reliability and should be tested or used in conjunction with a well-developed LMS. An upgrade to Blackboard version 9 was launched in the fall of 2010 with subsequent updates that afford the necessary feature-rich virtual learning environment. The OA program faculty attended one or more training sessions on course development using this system. Faculty can see students working in the business communications course online site, which is linked to the Blackboard site for the course. The cost of registration codes for publisher Web-based software was expensive and confusing for students. Packaging information needed to be accessible and easy to understand. E-books options should be considered for every course. Faculty could also see student work in the keyboarding courses.

The Technology-Rich Program

The information provided below includes details of the revised technology-rich program. Courses are aligned based on introductory, applications-based, and upper-level design.

Introductory Courses

Fundamentals of Information Technologies is a program introduction course in computer fundamentals and technology with an emphasis on computer literacy. Topics include the history of computers, computer components, software applications, operating systems, Internet research, Web 2.0, security, storage, ethics, and electronic files management. Text Web support containing activities and assessment tools from a publisher with a proven record of Web excellence is used in conjunction with the Blackboard course management system, which allows students to view presentations, upload assignments, practice with tools, and complete quizzes. Faculty for this course includes the program coordinator and a campus IT manager who have technology experience and an understandable use of computer literacy.

Keyboarding I and II is focused on keyboarding and document processing using the personal computer. Traditional software was replaced with a Web-based application available from the publisher. The courses are available online and utilize a variety of elements (chats, document sharing, podcasts, audio feedback) not previously included in a traditional keyboarding course. Online course tests and testing centers were incorporated. Two new faculty were hired with backgrounds in technology education and keyboarding instruction. In preparation for this new method of delivery, all program faculty attended an in-service training and sharing session.

Office Procedures I and II were combined into one semester course emphasizing the enhancement of office skills, best practices, and procedures as they relate to the world of work for an administrative assistant. General office routines including roles and responsibilities, as well as, electronic and paper file systems were emphasized. A new textbook was selected with enhanced Web-based assignments involving word processing, electronic files management, and

e-flash cards. Electronic files management was introduced as a supplement to paper-based filing instruction. The course was moved into the computer lab for Web-based exercises. The technological changes to this introductory course required minimal development for faculty.

Applications Courses: (Word Processing, Spreadsheets, Presentations, and Databases)

These courses offer production software application instruction with an emphasis on professional communications. Creating a technology-rich curriculum meant updating software, while utilizing Blackboard for document submission and sharing. The effort to be "green" was stressed with the implementation of an electronic portfolio (ePortfolio) of assignments. These courses were also designed for online delivery with word processing leading the way. Podcasts and audio recordings are used for lecture and feedback to students. Online practice tests lead to the successful completion of MOS© (Microsoft Office Specialist) exams. A new faculty member and the program coordinator developed online versions approved by members of the TLC.

Upper-Level Courses

Business Communications I and II were combined into one course providing a review of English usage from a business office perspective. Grammar, spelling, vocabulary, word usage, sentence structure, paragraph development, capitalization, punctuation, and proofreading for more effective business writing are emphasized. Students compose a variety of business forms including email, letters, memoranda, and reports. The curriculum encourages a free subscription to a grammar basics organization. Students receive weekly emails with grammar rules and common errors in word usage, enhancing classroom discussion and supporting lessons. An electronic book (e-book) has been implemented that can be purchased by the chapter. The publishers made it easy for faculty. A specially designed Web site was created for the course by the instructor and the publisher. Additional practice modules were made accessible for individual purchase. The new focus is on professional blogs, email etiquette, and workplace instant messaging with an emphasis on maintaining professionalism regardless of the tool or method of delivery chosen.

Desktop Publishing I and II were combined into a course offering the development of skills in desktop publishing software with emphasis on graphic design basics and publishing information. Students prepare newsletters, brochures, business cards, letterheads, photos, and catalogs of professional quality. The course now incorporates applications from the Adobe Creative Suite© (Photoshop© and Dreamweaver©) and freeware along with Microsoft Publisher© to create brochures, business cards, letterheads, calendars, and Web pages. Initially, these courses focused primarily on Microsoft Publisher© and the second course fell short of the challenge to prepare students for a variety of job opportunities involving Web design and graphics. Now, new faculty members with previous professional and teaching experiences in desktop publishing bring new light to a combined course.

Dictation and Transcription is focused on the development of machine transcription skills from taped dictation, language skills, and various other methods of recording. Updates to this course include the purchase of new transcription kits in 2010, a new edition of the text with updated data files, and utilization of the latest word processing software in our computer lab. The purchase of voice recognition software for generating documents was made to give students an understanding of its value in the workplace. The course was made optional and offered in

conjunction with the medical track courses. The occupation was calling for medical scribes as hospitals transition to electronic records. Students could choose this course or Keyboarding II in the semester version of the OA program. Faculty training will continue as necessary with purchases of software.

Stress Management/Time Management defines stress and discusses the seven missing pieces of managing stress that decrease productivity in the office leading to health and performance issues. The role of stress in time management is emphasized in conjunction with application software. A lesson utilizing MS Outlook for business and personal use including e-mail, calendaring, contact management, and tasks listing is included. Instructors emphasize the need for stress management as administrative assistants and business support staff prepare for added responsibilities and expanded duties required for job performance and promotion. The American Management Association (AMA) tools are examined for identification and management of stress and time to show students how to efficiently deal with the overflow of information, avoid over commitment, and still be able to produce effective results (Stroman, Wilson, & Wauson, 2011)

Information System Design offers tools for designing an optimal business system utilizing feasibility studies, process documentation, process analysis, technical writing, and ergonomics. Incorporating elements like YouTube and smart phones, students examine real work spaces. Applications like Microsoft Visio$^{©}$ for flowcharts, swimlanes, and floor plans, enhance this once paper-based course. Students audit work spaces and processes using audio programs such as Audacity. Videos of assessments are created, affording the opportunity to use smart phones and Web 2.0 capabilities. The instructor utilizes business analyst experiences to offer the updated version of the course.

Entry and Exit Seminars discuss special topics and problems encountered in the field. This course is a mentoring opportunity for new students and sophomores ready to graduate. Students research career options and discuss advancements in technology and applications. Development of skills was personalized for each offering. The course was an opportunity to bring current technological trends to light before graduation, requiring the instructor to be flexible and prepared. Accumulated program course work (artifacts) serve as evidence of learned skills and is required for an electronic portfolio by exit students completing a capstone project. The new Entry and Exit Seminars are built into the semester program.

Special Topics courses allow for the study of a variety of topics and new innovations. Every special topic course is designed with technology in mind. Windows 8, Intermediate Spreadsheets, Social Media in the Workplace, and Using Graphical Organizers comprise a few of today's special topics. Faculty offer courses based on expertise in various subjects and technology.

Internships are instituted for semesters. Placements are selected based on a number of factors with importance placed on the utilization of technology in the chosen setting. Students display applications skills for employers via projects. The Program Coordinator facilitates all placements. Grants from the Ohio Board of Regents and Ohio Means provide guidance and monetary compensation to students and employers.

Table 1 compares the level of technology used throughout the program prior to 2010. The program required a leader, and a new program coordinator was hired in late 2009. Prior to the initiation of these changes basic updates were needed in addition to those required to turn the program around.

Table 1

Comparison Model of Former and Revised Technology in OA

Courses	Former Technology	Revised Technology
Fundamentals of Information Technology – New Course		• Hands-on computer components – portable lab cart • Textbook Publisher Web site
Keyboarding (Keyboarding I and II)	• Server based program keyboarding software offering no measureable feedback to the student typist and lacking assessment capabilities for the instructor • Separate word processing software	• Publisher Web-based program - complete teaching and learning system accessible anywhere there is Internet • Incorporated word processing software
Office Procedures (Basic, Medical, & Legal)	None required	• Internet research • Publisher Web site • Electronic filing
Applications Courses (word processing, spreadsheets, presentations, desktop publishing & databases)	Outdated software	• Latest software • MOS$^{©}$ test preparation
Business Communications	Word processing application required to complete assignments	• Publisher Web site for practice, assignments, and assessment • Free email program delivers daily grammar rules and "word of the day"
Information Systems Design	None required	• Diagramming and Flowcharting software • Word processing software • Presentation software
Internship – Revised/Not previously required	None required	Must include a technical environment

It is easy to see how the inclusion of technology or enhancement of existing technology affected a change in outcomes and assignments that support the program level learning outcomes. Technology will now allow students to complete electronic portfolios and prepare for internships, and support completion of assignments in the general education area as well.

With the new level of technology in the content and maximized use of technology in the delivery of the content throughout the curriculum, courses introduce concepts, assess knowledge,

and end with a mastery level of knowledge for the students. The revised program of courses easily follows the program level learning outcomes with an emphasis on technology as demonstrated in Table 2. It is also important to note that courses outside the core including mathematics, language, & social science are not listed but contribute to the achievement of the program goals and mastery level of knowledge. Conversely, program level learning outcomes directly connected to general education and other required courses in the degree program are not listed.

Table 2
Technology-Rich Program Curriculum Map and Measures

Program Learning Outcomes → Courses ↓	Technology Skills	Communication Skills	Analytical/ Critical Thinking Skills	Quantitative Skills	Evaluation of Organizational Practices and Implementation of Improvements.	Understanding of Organizational Ethics	Leadership and Supervisory Skills
Entry Seminar*	I	I	I		I	I	I
Fundamentals of Info Technology*	I	I	I		I	I	
Keyboarding I*	I	I	I				
Office Procedures*	I	I	I		I	I	I
Word Processing**	I	I	I		I	I	I
Presentations**	I	I	I		I	I	I
Keyboarding II*	A	A	A		A		
Spreadsheets**	A	A	A	I	A	I	I
Databases**	A	A	A	A	A		
Desktop Publishing**	M	M	M		M	A	
Business Communications*	M	M	M		M	A	M
Information Systems Design**	M	M	M	M	M	M	M
Internship*	M	M	M	M	M	M	M
Exit Seminar*	M	M	M		M	M	M

*Technology used in education (delivery)
**Technology in content and delivery
I=Introduce   A=Assess   M=Master

Student Perspectives

As changes were incorporated into former program core courses in late 2009, special topic courses were added in anticipation of becoming part of the revised program. Students in the former program began to experience the technology-rich environment as early as 2010. Students majoring in OA from 2010 through 2012 were interviewed and their perspectives were included in this research.

First impressions involved reduced expenses in conjunction with flexible scheduling and options that would enhance student employability. There was considerable cost savings on textbooks with e-book options as courses were offered in the evenings, online, hybrid, and accelerated. The associate degree was strengthened by certification options, interdisciplinary courses, and updated medical and legal tracks that became popular with students. These certifications included the National Safety Council's Airborne and Bloodborne Pathogens certification, Microsoft's MOS© certifications, course supported Notary Public commissions, and First Aid and CPR certifications. Exposure in classes and during internships to databases like LexisNexis used in the legal professions and other tools for medical and business analysis professions made the graduates with associate degrees more experienced and marketable as the job placement process began. Applying learned concepts during internship and employing

students on campus proved to boost student confidence in the program. Student welcomed learning about connected fields as they shared experiences in groups during an interdisciplinary course. Of particular mention was the Medical Office Clinical Techniques course developed by the OA Program Coordinator and a nursing faculty.

Courses became "fun" as technology was introduced. The existing courses were enhanced with the addition of technology in delivery and in required content as it matched the expected learning outcomes. A variety of communication methods met every student's needs including LMS, email, and text messaging. The graduates were particularly excited about the enhancements to the desktop publishing course that would go beyond learning another basic application like MS Publisher© to teach Web design using more advanced software like Dreamweaver© and free tools like Prezi©. Students created a Web site for a local business as a project and a personal, electronic resume.

Of special note was the addition of Microsoft Outlook© to the Stress Management course. The old Stress Management course was all theory based and lacked any application software. The new Time Management course still lectures on theory, but it also teaches how to use Microsoft Outlook as an aid in balancing home and life responsibilities while in school. The transition to internships and the workplace comes with ease for new graduates who learned this type of application.

 In regard to the new Fundamentals of Information Technologies program entry-level course, many students remarked in the final course evaluations that if this course would have been offered as they started college rather than halfway through sophomore year for many and as a special topic, the content really would have helped them over a few hurdles. Several did not know how to use a flash drive or what it even was when they started the program fresh from high school. Most knew nothing about Blackboard or learning management systems. This class was a great beginning class just to get familiar with new technology. Electronic assignment submissions, research papers on purchasing a home or business computer, Web 2.0 tools and other enhancements easily translated into "useful tools for work and home" as students completed this course.

Application software updates occur frequently, and students can expect changes to take place during the completion of their degree. Students appreciated the content flexibility of the new capstone seminar course, which allows for instruction on updates to software previously learned in the program. The e-portfolio and its required artifacts organized in the capstone course project left a feeling of accomplishment and "pride" by providing concrete evidence of student abilities and employability.

Technical requirements in well-placed internships gave the 2012 (revised semester program would begin fall 2012 for new and transitioning students) graduates an edge in the job market. One student remarked, "Internships had never been required by the program, and I completed mine at a local medical center. I was able to move to three different locations through the system including assistant to the nursing coordinator, the foundation, and billing and coding. Each experience was very different, but I learned the most from the assistant to the nursing coordinator. She showcased what a true administrative assistant does on a daily basis. We had to complete a project while interning, and I created spreadsheets displaying attendance and retention."

Finally, students felt more prepared for bachelor degree programs, and they began to ask about them in advising appointments. Students reported back that they saw the benefits of a

technology-rich associate experience in the completion of assignments and internship goals in two bachelor programs.

Recommendations and Conclusions

One final recommendation includes keeping up with K-12 technology exposure, which would enable a university program to challenge incoming students while closely guiding non-traditional students through foreign territory. Another consideration for the revised program is a better match between the content and a new program name to include "technology" and "administration." This will enable the program similarities with other technology programs for administrative assistants to be comparable while making the program more marketable, updated, and indicative of today's job market. Keeping the goal of a truly well-rounded university degree program is at the forefront of all maintenance.

Making a program technology rich involves faculty and IT involvement, flexibility, a supportive LMS, and a student-centered approach. While keeping in mind that a technology-rich plan is a dynamic process, this program's journey suggested it is important to carefully complete an assessment as part of the planning process for major curricular changes. Technology is always changing and employer needs vary as they adapt and deploy technology. Support from a faculty development community within the university and online alternatives will secure the future of a program. Share strengths by role modeling technology in meetings. Anticipate technical glitches and be a troubleshooter. Expect the unexpected and be open to student input.

It is important to note the similarities this revised program has with other OA programs. These include a majority of the courses and a focus on technology. However, the differences are found in the inclusion of ePortfolios throughout the program, introductory and capstone courses, mandatory technology-focused internships, and innovative inclusion of technology in teaching, learning, and student certification. Monitoring of student success through grades and course evaluations will continue to measure successes and opportunities for change every term. Continued advances in technology will keep the target moving for faculty, but this new approach of planning, analyzing, designing, and maintaining will continue to keep faculty development and resources budgeted, followed, and incorporated.

Larger monitors were installed in the labs where the applications courses are taught to allow students purchasing e-books to see their book and the application used for completing assignments at the same time. Larger monitors and dual monitors are being budgeted for the next academic year. Recently, ergonomic keyboards have been provided to students in lab classrooms.

Remember, associate degree students select bachelor programs in order to use learned technology and communications skills from their technical degree, giving them a clear advantage. Technology will be at the core of student assets when pursuing employment. The approach must be student centered to be successful. Encourage student technological independence, keep current by reading the literature, and be tech savvy. Most importantly, keep the students' employment and educational needs at the forefront of any programmatic decisions.

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