SKEPTICISM TO SUCCESS: MEETING CRITICAL WORKFORCE NEEDS THROUGH INNOVATION AND COLLABORATION

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ABSTRACT
To meet workforce demand and the needs of working or place-bound students, Whatcom Community College developed an online version of its existing face-to-face Physical Therapist Assistant program which became a model for other lab-based health science degrees. This article describes research studies that support the program's practices and includes the story of how the program successfully developed despite faculty and professional community skepticism.

KEYWORDS
Workforce development, health science, lab-based, resistance, skepticism

I. INTRODUCTION

Health science degrees are in increasing demand at community and technical colleges and have traditionally been challenging to integrate into an asynchronous model. In an effort to meet workforce demand and the needs of working or place-bound students, Whatcom Community College developed an online version of its existing face-to-face Physical Therapist Assistant program in 2006. This program has been successful in meeting a diverse range of needs and interests through innovation, partnerships and use of technology. The program has been recognized nationally by the National Council of Instructional Administrators for Community College Exemplary Initiatives in 2009 and was also recognized statewide with the Washington State 2008 Governor's Award for Workforce Best Practices. The online Physical Therapist Assistant program has served as a model for the development of other lab-based health science degrees at Whatcom Community College (WCC). Faculty provide leadership to both the WCC campus and community colleges statewide. This article describes research studies that support the program's practices and will include the story of how the program successfully developed despite faculty and professional community skepticism.

II. CHANGING MODALITIES OF WORKFORCE EDUCATION

New technologies and teaching modalities are shaping the lives of students and instructors in higher education. Nationwide there has been a 12% increase in online enrollments compared to 1.2% growth in traditional face-to-face enrollments [1]. Currently over 20% of all higher education students are taking at least one online course. In Washington State's community colleges, online enrollments continue to grow. In fall quarter 2009 Washington State community colleges had 25,025 online and hybrid state-supported full-time equivalent students (FTES), compared to 19,167 in fall quarter 2008 [2]. At WCC, online student enrollments have increased from 1,953 students in 2007-08 to 2,255 students in 2008-09. The trend continues this year with 2009-2010 enrollment numbers surpassing those of the previous year even before summer quarter 2010 numbers are counted.

According to Allen and Seaman [1], online learning is a major focus of community colleges and is considered a critical element of their mission. Enrollment trends from both Washington State community and technical colleges and WCC exemplify this statement. Generally, it appears that community colleges have embraced online learning to a greater degree and regard online learning with a higher value than four-year institutions. The Sloan 2008 study found that 66.5% of associate's institutions agreed that "online education is critical to the long-term strategy of my school" compared to 35.4% from a baccalaureate institution [1, p.11]. Community colleges are well positioned to fulfill the rapidly changing needs of students and industry through innovation and opportunity. The rationale for and the process of implementing the online Physical Therapist Assistant (PTA) program at WCC aligned with many of the issues described in the following research.

The decision to move forward and increase online course offerings often rests with the willingness of faculty. Mitchell and Geva-May [3], describe barriers that may prohibit implementation of online learning at a higher education institution. These barriers include faculty attitudes in relationship to "intellectual reluctance, support, change, and cost-benefit" [3, p. 72]. Intellectual reluctance describes the attitude of some faculty who feel online learning is less rigorous and valuable than a face-to-face class and does not align with the values of higher education. Online learning also brings a change in the instructor's role from the "sage on the stage" to the "guide on the side" which some faculty are not comfortable embracing. Lack of support both from colleagues and administrators, including lack of technical support, can be a barrier for faculty moving forward with online teaching and learning. Changes in the structure, governance, and participation due to changing modes of instruction can make some faculty reluctant to embrace online learning. A redistribution of funds to support online education can be a threat to current resource allocation structures.

Osika, Johnson, and Buteau [4] conducted a survey to determine faculty attitudes and perceptions towards online instruction. The authors asked, "How can an institution encourage their faculty members to move forward with online instruction?" The results of the survey indicated that, while the majority of the faculty believed online learning is critical to the university's survival and offered an increase in access for students, only 47% believed that online courses had the same rigor and quality of traditional courses. This perception could inhibit faculty's desire to offer courses in an online format.

Zhen, Garthwait, and Pratt [5] describe a study conducted at the University of Maine to determine what factors influenced a faculty member's decision to teach online. The survey was distributed to 400 randomly selected faculty members. The results suggest that faculty who strongly believe that online learning will enhance student learning and have a strong belief in their ability to effectively use the technology will likely invest the needed time and effort to integrate online course management applications into their teaching. Faculty played an important role in transitioning the WCC PTA program into an online format. However, for some PTA faculty, the first reaction to the idea was shock and disbelief. Some stated, "That can't be done in a hands-on field of health care." Similar sentiments were echoed by industry professionals and other campus colleagues. Conversely, faculty who were early adopters saw the potential in the program and how it would increase the access for place-bound and working students. These faculty were excited, enthusiastic, and ready to begin!

Skeptical colleagues voiced concern regarding a perceived lack of direct faculty-to-student contact online. The level student-to-faculty and student-to-student interaction has been shown to impact students' success and academic achievement [6, 7]. Encouragement of social presence in online courses allows students perceive each other as 'real people.' Social presence can be facilitated and encouraged by the instructor through active involvement of the online students. The authors conclude that to increase students' per-

ceived learning online, online instructors should develop effective strategies that foster social participation and identification of class members. Active engagement by students contributes to their sense of belonging and group inclusion and also avoids a sense of isolation. Students who engage in discussions and interchanges tend to perceive themselves as learning more. Whether this perception is actual cognitive learning or only perceived learning has not been determined by the research. Accordingly, WCC faculty focus on creating opportunities for community building and social presence in online learning.

Online instructors can lay the foundation for community in their virtual classrooms through the choice of assignments and postings. Indicators that students have a sense of community include "active interaction, collaborative learning, socially constructed meaning, sharing of resources, and expressions of support and encouragement" [6, p.31]. PTA faculty teaching online for WCC recognize the importance of building community among their students. Over the years, they have added resources such as wiki sites, group projects, the VOIP Elluminate Live! for interactive meetings, and a student club. The required face-to-face lab time also helps to build sense of community and social presence for students. Throughout the year faculty participate in a high degree of contact with students by phone and email.

Students taking online courses need to recognize the different behaviors and strategies required to be successful in online learning. The roles of face-to-face learners and online learners vary. Garrison, Cleveland-Innes, and Fung [8] discuss the changes learners experience in transitioning from a face-to-face environment to an online venue. Students need to take on new roles and expectations and develop new ways to operate and communicate in an online setting. Online learning environments are generally less instructor directed; therefore, the authors suggest that online students need to take greater responsibility for their learning. The role of the online student is defined, developed, and acquired within the online community; thus, building a sense of community is important in the development of the role of the students. Faculty have been successful in communicating the unique demands of online learning and fostering positive learning environments. Faculty provide a mandatory, in-person student orientation to prepare students for success and clarify the unique responsibilities of online education. Students admitted into WCC's online PTA program are also highly motivated by the unique opportunity and by the program's consistent 100% workforce placement as working PTAs after graduation.

III. WORKFORCE DEMANDS

There is a high demand for PTAs both locally and nationally as employers are unable to fill job openings because of the lack of trained PTAs. There is a projected growth rate of 30.2% in Washington State through 2016 [9]. On a national level, PTA is listed as one of the 30 fastest growing occupations in the *Occupational Outlook Handbook 2008-09* with a 32.4% projected growth nationally through 2016 [10]. Wages have risen in recent years, increasing to an entry wage of $20 - $25 per hour in 2009, up from $14 - $16 per hour in 2005. The demand for health-care workers continues to outpace the number of available employees and many colleges are responding by transitioning their allied healthcare programs to an online or hybrid delivery venue in order to increase access and graduates [11, 12].

For a college, offering a PTA program is expensive; requiring costly equipment, a low faculty-to-student ratio for labs, clinical externship experiences for students, contracts and contacts with clinical sites and instructors, travel to clinical sites, a lab for students to learn and practice skills, and staffing for the open lab times and clinical coordination. Because of the program's high cost and the college's physical limits on classroom campus space, it has been prudent and far-sighted to increase enrollments through an online program. The online program is able to utilize existing resource investments without the need to build additional physical instructional space.

Only five state colleges in Washington State are accredited to offer a PTA program. While these programs graduate approximately 130 students per year, this does not meet the high demand for PTAs. Additionally, the programs are full-time, with face-to-face commitments often requiring students to relocate and quit their jobs. WCC's online PTA program is one of only five online PTA programs in the nation.

IV. INNOVATIVE DESIGN AND PURPOSE

The concept of an online PTA program at WCC began as a result of requests from owners and managers of physical therapy clinics in underserved areas of the state. In the fall of 2003, clinic business owners asked WCC to transition its face-to-face PTA program into a hybrid/online format to meet industry and employment needs. After thorough research, WCC moved forward with this project. The curriculum was developed and adapted for hybrid/online use, approval was obtained from the Commission for Accreditation of Physical Therapist Education (CAPTE), instructors were trained, additional equipment and supplies were purchased, and the first hybrid/online PTA cohort began in spring 2006.

WCC's online PTA program is a part-time program targeted towards working adults and place-bound residents. New students can complete prerequisites for the PTA program in an online format through WCC's online general education courses, their local community college, or Washington Online, a Washington State consortium for online education. After completing their prerequisites, students apply to WCC for admission into the online PTA program. Once accepted, students start the program in the spring. The program enables students to complete all didactic coursework online, using the Angel course management system. The students are required to come to WCC's campus once per month for an intensive weekend to complete lab skills, but clinical externships are arranged as near as possible to the students' residence. As a part-time program, the coursework is plotted over nine quarters, and it takes approximately two years for completion.

WCC's first online PTA class began in the spring of 2006 with seventeen students. Thirteen students from the initial cohort graduated in 2008 with a 76% retention rate. The graduating students had several employment offers to choose from and 100% gained initial employment as PTA's**.** The pass rate on the National Physical Therapist Assistant (NPTAE) licensure exam was 100%. A recent study from the first cohort indicated that students were highly satisfied with the program and would recommend it to others. All the clinical evaluations from the clinical instructors of the online students indicated the students were very well prepared. Out of this first cohort of graduates from the program, 92% continue to be employed as PTAs.

The second cohort began in the spring of 2007 with twenty-one students. This cohort graduated in spring 2009 and had an 88% retention rate. Licensure exam pass rate for the students in this cohort was 94%. To date 88% of these graduates are employed as PTAs with one graduate choosing to delay employment. In the spring of 2008, the third cohort of twenty-eight students entered the program. This cohort currently has a 96% retention rate. All students are currently on track for program completion and graduation in June 2010. Approximately 60% of the students in this cohort have already received employment offers as a PTA from their current employers. The remaining students have received offers from the clinical externship sites they have attended as a student and others have received multiple offers after attending job fairs.

Twenty-four students enrolled in the spring 2009 cohort. There are currently twenty-one students with a retention rate of 87%. The newest cohort, spring 2010, includes twenty-one students with some attending from as far away as Texas. The online PTA program continues to receive more applications than capacity in the program. In spring of 2006, there were thirty-three applicants to the PTA program. This number has steadily climbed as high as forty-five applicants for the 24-student capacity of a program cohort. Online PTA student success is seen in evaluation feedback statements from clinical instructors who oversee clinic-based externships. One clinical instructor states, "Things are going great. He [the student] is very knowl-

edgeable and has more experience than the physical therapy students that I have had here….I am having difficulty finding any areas that he needs to improve. Thanks for sending him here. We will hate to see him go". This statement is representative of the feedback from the clinics where the online PTA students complete their externships.

One key to the success of this program is the application of eLearning tools and practices which facilitate faculty pedagogical goals and promote student learning. These efforts have consistently benefited the face-to-face cohort as well, though that was not the initial intent. PTA program faculty continually improve their program through responding to student requests and suggestions. In the first year of the online PTA program, students articulated the need for interactive multimedia resources. The PTA department researched online anatomy software and selected Primal Online 3D Anatomy Software. This comprehensive online database has images of human anatomy that can be viewed multi-directionally and in motion. Students are able to view and manipulate layers of muscle and tissue, view muscle movements, read information on anatomical features and self quiz. The Primal site is all web based and can be used at home or school. It is used in online instruction, during monthly labs and for the face-to-face program's classes as well.

Student requests also prompted PTA faculty to provide video documentation of technical skills learned in the laboratory. To utilize resources most effectively, PTA faculty researched open source skills videos available from iTunes U and YouTube. When otherwise unavailable, skills videos have been professionally filmed, edited and narrated by PTA faculty for student use. These videos are available to students online from home and are used by both online and face-to-face cohorts of PTA students. The skills videos are another example of services implemented to benefit the online students that have positive overlapping impact for all PTA students. Skill videos cover some of the most important patient procedures that require extensive practice to master with proficiency, such as use of crutches, walkers, bed transfers and bed mobility, range of motion and goniometry. The videos also allow faculty to use class time more effectively by spending less time repeating demonstrations. Student response to the lab skills videos has been very positive, with faculty reporting they save time during lab session by not repeating skill demonstrations as often.

To increase collaboration and community building, faculty created several wiki pages that connect faculty, students, clinical sites and program graduates to share experiences and mentor each other. Building community and collaboration among the students is critical to faculty who make extra effort to create opportunities for online and face-to-face students to build relationships. Student surveys have repeatedly praised faculty members regarding their quick responses to questions or inquiries. Online students claim they have greater access to instructors than in face-to-face courses. This past academic year, an online PTA student took the initiative to set up a WCC sanctioned PTA club for students to connect socially and academically accessible to both online and face-to-face students. In addition, an online student from a different cohort established a WCC Facebook page for the PTA program to enhance interaction among current students and graduates.

To address the discourse surrounding rigor and quality in online instruction, WCC uses the Quality Matters rubric for course evaluations and has two PTA Faculty trained as Quality Matters Master Reviewers. In 2008 online PTA instructors participated in a Washington State pilot project to train faculty in the Quality Matters (QM) online course certification rubric. These faculty are participating in course review work nationally, and over the next year WCC will work to certify the curriculum design and implementation of all online PTA courses and expand the number of certified QM Peer and Master Reviewers in the department.

Individualized support is available to PTA faculty from the e-Learning Coordinator, along with 24/7 online technical support for both students and faculty. The availability of individualized support has empowered faculty to meet their student needs and continually incorporate new uses of technology and current peda-

gogical strategies into their courses. Through the use of instructional technology, faculty have strengthened their courses and have increased accessibility to multiple learning styles. Faculty development is accomplished in workshops and trainings, through screen capture video recordings available on the campus eLearning Wiki site and through showcasing faculty best practices in teaching. Projects to support online teaching and learning continue to grow and have been initiated from both students and faculty.

V. REACHING NEW POPULATIONS

One of the major initiatives of the project has been its collaboration and partnership with Yakima Valley Community College (YVCC). YVCC is located in a rural region of Eastern Washington, 230 miles east of Bellingham and across a major mountain pass. While there was a great need in the region for PTAs, there was not sufficient demand to justify starting an entire new accredited PTA program. The online program offered an ideal solution for both interested students and clinical owners in need of trained employees. The connection between the colleges and the potential students is supported by an YVCC instructor who serves as a liaison. The YVCC instructor works with all potential students, advising them on prerequisite courses. This position is critical to the partnership and the success of students from the Yakima Valley region. This position also works closely with employers securing clinical sites for students. A total of twenty-eight students from Eastern Washington have been admitted into the online PTA program.

The online PTA program has also been accessed by students and appreciated by industry partners in Alaska, which currently does not have a PTA program. The WCC online program is the closest option and is within a reasonable traveling distance for students to attend the on-campus weekend lab classes. The first online cohort in 2006 included one student from Southern Alaska. Upon graduation, this student was able to choose from three different employment opportunities which included flexible working hours and bonuses. Two additional students from Alaska have participated in the program since that time. In addition to Alaska, the online PTA program has had five students from Oregon and one from Central Texas, which are underserved for access to this workforce profession. In the past two years there has been a small but growing interest in WCC's online PTA program from students residing in California, Florida, Nevada, and West Virginia.

The online PTA program has become a model for innovation and collaboration in meeting workplace demands. WCC is continually asked to partner and collaborate in order to meet industry needs in remote, rural, and non-program areas. The development of further partnerships continues to expand. WCC will explore securing approval from CAPTE to offer additional lab classes in other venues nearer to where students live. These alternative lab sites would reduce the currently required once per month travel to Bellingham. Employers have been extremely supportive of their employees in the program, with some contributing over $7,000 a year toward a student's expenses. Employer support has included paying for tuition, books, travel, and per diem expenses of employees. In return the employee will stay with the clinic for an agreed upon number of years.

The success of the PTA program has encouraged WCC to implement additional online lab-based health sciences and their prerequisites. WCC's Registered Nursing and Medical Assistant programs will both add online/hybrid cohorts in fall 2010 modeling the PTA program. These health science degrees have strong workforce demands, are not often available to working and place-bound students, and have enrollment requests in excess of the capacity of WCC face-to-face classes. Online Anatomy and Physiology and lab-based Introductory Chemistry are also available to students, enabling a fluid online based pathway to completing crucial prerequisites to the PTA program and other health science degrees. The PTA program continues to have positive ancillary impacts that benefit the entire WCC campus through an increased inte-

gration of online courses, pedagogical models, technology acquisitions, and support and training services. Accordingly, online and hybrid enrollments are up 44% at WCC in the past year, with the addition of over 30 new online and hybrid courses campus wide. The online PTA program implementation helped identify the eLearning training and support needs of both faculty and students. WCC has responded by adding personnel, investments in hardware and software, and services to facilitate teaching and learning. As a result of the success of this program, WCC is a leader in innovative workforce education and eLearning.

VI. SUMMARY

The journey to online was not without its bumps and challenges. But the vision of what the PTA program could deliver and offer to students who had no access to a program, the tenacity of the faculty, and the support of key administrators kept the initiative alive and moving forward. The procurement of workforce high-demand grants helped support the critical work in transitioning the program to an online setting. Each year the program is refined based on student input and learning outcomes. It is a strong program with outstanding results and positive feedback from both students and clinic employers. Students are overwhelmingly grateful for the online program. Many students have stated that without the online option, they would never have been able to access a PTA program, graduate, and secure a well-paid position in a rewarding career. Faculty find teaching online appealing for the flexibility and the opportunity to engage in dialogue with all their students in an online setting. The monthly labs offer the face-to-face element that enhances student engagement and retention. This online PTA program model is strong and successful and one that can be emulated. It is an effective and efficient method to maximize limited resources in support of student and workforce needs. As the demand for healthcare workers continues to rise, the need for colleges to be innovative in offering education and training is crucial.

Community colleges with their responsive and flexible instructional delivery systems are the solution to meeting critical education and training needs.

VII. ABOUT THE AUTHORS

Margaret Anderson is the Program Coordinator for the Whatcom Community College Physical Therapist Assistant Program. She has been a Physical Therapist for more than 25 years and holds a Master's degree in Education from Western Washington University with a focus on Adult Education and Community College Teaching.

Linda Maier is the Dean for Workforce Education at Whatcom Community College overseeing professional and technical programs, e-learning, and community education. She is currently a doctoral candidate at the University of Washington in the Higher Education Leadership and Policy Studies. Her dissertation research is focused on building community among online teaching faculty.

Michael Shepard is Whatcom Community College's eLearning Coordinator, providing faculty training and support for technology integrated teaching and learning, along with instructional design assistance. He is currently pursuing a PhD in Anthropology at the University of British Columbia studying interactive web-based technology application to Indigenous language revitalization efforts.

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