CAEL

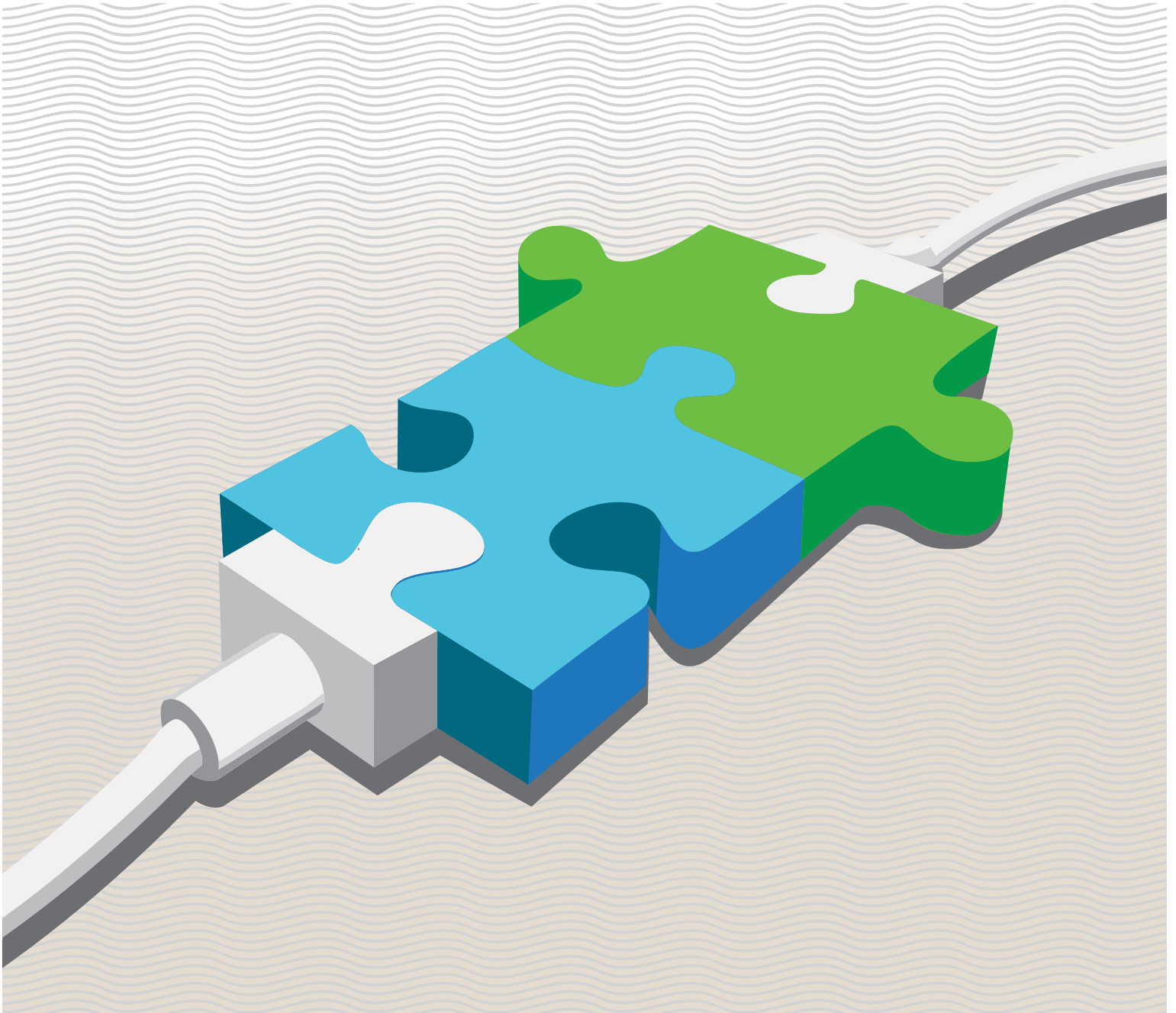## 2017 CAEL Forum and News

LINKING LEARNING AND WORK:

Strategic Partnerships between Postsecondary Education and Employers on Behalf of the Adult Learner

A LETTER FROM THE EDITORS

January 2018

Dear Readers,

The Council for Adult and Experiential Learning has long focused on the link between learning and work—from our time managing employer tuition assistance programs to pre-enrollment advising services, and from prior learning assessment to industry-based workforce initiatives.

We know that in today's economy a meaningful postsecondary credential is one that prepares a student for the workplace—and for a career. That requires close partnerships between postsecondary institutions and employers and a deliberate focus on helping students prepare for their lives after graduation.

This issue of the Forum and News shares voices from the field who are making those kinds of partnerships happen and who are building the programs and services that students will need for their transitions to new careers and work opportunities. These approaches focus on skills and competencies needed in the workplace, new ways to provide career services, and productive collaboration between educational institutions and employer partners.

We hope that you will enjoy these articles and find them useful in your own work!

The Forum and News Editorial Board

Becky Klein-Collins
Beth Doyle
Jennifer Groh
Susan Kannel

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SECTION 1:

RETHINKING THE ASSESSMENT OF COMPETENCIES AND SKILLS

LEADERSHIP EPORTFOLIO: PARTNERING WITH EMPLOYERS TO TRANSLATE ACADEMIC SKILLS INTO EMPLOYABLE SKILLS

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Are college students entering the workforce prepared to meet the demands of their new organizations? A 2017 survey of 63,924 managers and 14,167 recent college graduates suggests that they are not (Strauss, 2016). To set themselves apart from other candidates, graduating students must increasingly find innovative ways to demonstrate their knowledge of the necessary leadership, teamwork, and critical thinking skills required to successfully transition from an academic environment to new positions in the global business community.

To showcase augmentation of leadership and other skills to future employers, 29 undergraduate and graduate students at the University of Alaska (UAA) College of Business and Public Policy (CBPP) created leadership ePortfolios as part of the ePortfolio Virtual Mentorship Program (ePvP). The pilot project was launched as a required assignment of the undergraduate "Introduction to Leadership" and graduate "Leadership and Organizational Behavior" courses at UAA. Student ePortfolios included a leadership vision, narrative, and philosophy as well as a professional biography, resume, and awards and honors. The ePortfolios were enriched with multimedia evidence of skills gained within and outside of the classroom. Thirteen Alaska business executives were recruited to review student ePortfolios and serve as virtual mentors to the classes. Virtual mentor assessments included evaluating the individual ePortfolio frameworks and providing critical feedback to both the students and class instructor from a hiring perspective.

The main objective of the ePvP pilot project was to help students evaluate their skills and employability. However, a positive unintended consequence of the program resulted in actual offers and opportunities for students from the companies in the mentor pool. Approximately 20% of participating students were offered a proposal for employment or an extended opportunity to build a relationship with an employer. Student offers were as follows: three students were offered job interviews, two were offered mentorships, and one student was offered an opportunity to co-author a technical paper.

Overall, the project suggests that the tripartite relationship between students, employers, and the university system strengthens current relationships with the business community and builds new and rewarding relationships for students through their work with the mentor pool.

Bridging the Gap Between Perceptions and Reality

Research suggests that outgoing students view themselves as being well prepared for the workplace, while their future employers do not share in this assessment (Jaschik, 2015). Employers have repeatedly stated that the onus to correct the skills gap resides with higher education (Arnett, 2017; Association of American Colleges & Universities [AAC&U], 2015; National Association of Colleges and Employers [NACE], 2016). Approximately 60% of the employers in an Association of American Colleges & Universities 2015 survey revealed that academia must do more to better prepare students for entry-level positions and promotions after work is attained. Universities and colleges have put in place numerous school-to-work programs like internships, applied learning projects, mentorships, job-shadowing programs, and other co-curricular platforms to complement coursework with job-related skill realization in an attempt to address the business community's assumptions and concerns.

However, employer surveys continue to reflect the perception that college graduates are underdeveloped in the areas of communication (oral and written), teamwork, problem-solving, decision-making, critical thinking, creativity, and leadership

(AAC&U, 2015; American Management Association [AMA], 2012; NACE, 2016; University of Missouri-St. Louis, 2012). Furthermore, in a recent survey, 69% to 80% of employers expressed a desire to see evidence of leadership, communication, teamwork, and problem-solving skills on an interviewee's resume (NACE, 2017). At the same time, almost 75% of college students think their schools do a good job of preparing them for today's workforce, and 64% are satisfied with the effort their college is expending to help them obtain skills needed to advance in their careers (AAC&U, 2015).

> *It is clear that employers have characterized higher education as unable, or unwilling, to comprehend employer needs.*

It is clear that employers have characterized higher education as unable, or unwilling, to comprehend employer needs, while many in academe insist the requisite skills employers desire are being acquired by students (Goodin, 2012).

Assuming both perspectives are true, is the academic/business divergence regarding student skills simply a matter of translation? Is it possible that students are acquiring the necessary skills but failing to articulate them in a way that is readily understood by hiring managers in the business world? In our view, the answer to both of the questions posed is "yes." Universities must do more to help students convert scholarship into demonstrated proficiency easily recognized by their future employer. To accomplish this goal, the CBPP at UAA implemented a pilot ePortfolio program in the fall semester of 2016.

ePvP in Practice

UAA CPPB utilized the ePvP as a bridge to help students traverse the intersection of the academic world to that of corporate America. The main objectives of the 2016 program were twofold:

- Assist students in authentically assessing and communicating their knowledge, skills, and abilities to the local business community; and
- Provide future employers with meaningful evidence of a student's knowledge and skill attainment.

To ensure the success of the program and usefulness of the ePortfolio product, faculty and staff:

- Created and implemented a user-friendly ePortfolio template (see inset);
- Incentivized student adaptability to, and application of, the ePortfolio platform throughout their courses; and
- Made certain that student artifacts communicated the employable skills demanded by the business community by soliciting corporate mentor feedback.

What is an ePortfolio?

The AAC&U recently deemed ePortfolios as its eleventh high-impact practice (Watson, Kuh, Rhodes, Light, & Chen, 2016). A high impact practice denotes "institutionally-structured student experiences inside or outside of the classroom that are associated with elevated performance across multiple engagement activities and desired outcomes, such as deep learning, persistence, and satisfaction with college." (Watson et al., 2016) As such, the eportfolio contributes real-world artifacts and narratives that can authenticate a student's learning and skills. In this way, it is possible that an ePortfolio may eventually surpass the significance of a transcript and, subsequently, in the future may play a complementary role to a resume or curriculum vitae (Porto & Thompson, 2017).

For the UAA CBPP pilot project, the ePortolfio was defined as a virtual space where students collected digitized artifacts (documents, images, videos, etc.) to demonstrate their accomplishments, proficiency, scholarship, and leadership for the purpose of leveraging future employment and/or promotion opportunities after employment attainment. The student's primary focus in the creation of their ePortfolio was to display examples of personal leadership in their scholastic, work, and public lives and to demonstrate a working knowledge of important leadership theories.

Why a Leadership ePortfolio?

Numerous employer surveys indicate that leadership skills are vital to the recruitment and retention of successful employees. Recent research indicates that:

1. **More than 80% of employers seek evidence of leadership skills when evaluating employability.** An article on the National Association of Colleges and Employers website entitled "Job Outlook 2016: The Attributes Employers Want to See on New College Graduates' Resumes" lists leadership skills as **the number one skill** that employers seek evidence of on a candidate's resume. In fact, employers stated that leadership skills were a more influential factor in their hiring evaluation process than that of extracurricular activities, GPA, and the reputation of the school attended. Furthermore, in a report entitled "Are They Really Ready to Work," almost 82% of employers rate leadership as very important for four-year college graduates entering the workforce (The Conference Board, The Partnership for 21ˢᵗ Century Skills, Corporate Voices for Working Families, and Society for Human Resource Management, 2006).

2. **Leadership ranked as one of the top two skill gaps in three consecutive surveys.** According to surveys conducted by the University of Missouri—St. Louis (UMSL) in 2008, 2010, and 2012, a skill gap exists for 10 skills employers deemed as critical for employee achievement. A lack of effective leadership skills vacillated between the first and second position in all three surveys. For example, the UMSL survey noted that a lack of employee aptitude can contribute to low employee morale and higher costs for the employer in regards to training, mentoring, coaching, etc.

3. **Underdeveloped leadership skills impact organizational performance.** Employers consistently report that a significant amount of students are leaving university campuses without effective communication, collaboration, critical thinking, decision-making, and leadership skills. (AAC&U, 2015; AMA, 2012). The lack of these capabilities has the potential to negatively impact an organization's performance.

Taking the research into account, the UAA CBPP team focused the 2016 ePvP project on helping students communicate their leadership experience to future employers.

Proving Leadership

As we were working to help students render academic experience, UAA CBPP faculty and staff determined that we were keeping our focus too academically narrow and failing to facilitate the conversation about how students' employability skills inside and outside the classroom align with their academic experience. Throughout their studies and lives, students encounter numerous opportunities to utilize emotional intelligence, creativity/innovation, collaboration, communication, critical thinking, and interpersonal skills.

In order to exhibit proficient leadership skills and competencies, CBPP faculty considered a 2012 American Management Association survey that suggests "the three R's"—reading, writing, and arithmetic—are becoming less important to employers than "the four C's"—critical thinking and problem-solving, communication, collaboration, and creativity and innovation. Moreover, research indicates that successful 21st-century leaders need to demonstrate additional skills. Thus, we expanded the four C's to eight C's and included the concepts of *community engagement, conflict resolution, cross-cultural awareness, and change/adaptation* into our pilot program. The eight C's of leadership provided the framework for the development of student ePorfolios.

With the framework in place, we next defined the curriculum, design, and integration of the creative mentorships (students, college, and employers) of the eVeP project.

Curriculum. The ePortolio was designed as a semester-long project. The curriculum included leadership development, ePortfolio training, and instruction in leadership theory. The pedagogical approach of courses primarily focused on a mix of case studies, leadership assessments, leadership development plans, experiential activities, and guest speakers, facilitating student comprehension and application when linking leadership theory to practice.

Figure 1. ePortfolio Template

Figure 2. ePortfolio Eight C's of Leadership

ePortfolio design. The design of the ePortfolio template was integral to the success of the program. The students received specific instruction from UAA's ePortfolio initiative coordinator (eIC) and instructor on the integration of the course curriculum into their ePortfolio product.

Milestones were created for each ePortfolio section—My Leadership, Bio, Leadership Skills, Resume, and Awards and Accolades) (see Figure 1)—served as impactful markers to highlight the completion of key tasks. At each milestone, students were provided feedback from the instructor for improvements. This process kept the students on track and fully engaged in the project throughout the semester.

All students were told that their ePortfolio artifacts would be required to highlight their knowledge and abilities in regards to the eight C's of leadership (see Figure 2). They were directed to select two of the C's they felt were in alignment with their strongest capabilities. They then selected from a series of behavioral interview questions (see Figure 3) and began to build their portfolio narratives using the S.T.A.R. approach:

S T– Situation, task, or problem
A—Action
R—Result/outcome (positive)

Creative mentorships. Recruiting and training employers as virtual mentors was a dual effort between the instructor and eIC. The class instructor was responsible for recruitment. Mentors were first identified among alumni and current business partners of the college and then expanded to new partnerships. Mentors were required to have direct experience in hiring employees, and their positions ranged from human resources personnel to department director. During the selection process, the instructor sought to create a cadre of mentors with diverse perspectives and from differing industries.

After the selection process, the eIC implemented the Mentor Training Program (MTP). Training was primarily conducted in-person with teleconference training occurring to accommodate mentor work schedules when necessary. Mentors were trained in the ePorftolo system and the grading rubric, and they were coached on how to provide constructive feedback to students. The rubric was designed using AAC&U's Valid Assessment of Learning in Undergraduate Education (VALUE) rubrics (*https://www.aacu.org/value*) as a framework. The total training time was approximately 45 minutes with the first 30 minutes concentrated on learning to navigate the ePortfolio platform and evaluation process. The final 15 minutes were dedicated to constructive coaching tips.

Lessons Learned

Students submitted their ePortfolios prior to the last week of the semester, and the virtual mentors completed their assessments by the end of the final week. The class instructor graded the students' ePortfolio solely on the required content, grammar, and execution of the demonstrated leadership skills requirement. The virtual mentor assessments were excluded from the students' ePortfolio grade for two reasons: 1) knowing that the assessment would not be included in the student's grade encouraged mentors to be more candid in their remarks, and 2) if a mentor failed to meet the deadline, the timing of the student's final grade would not be adversely impacted.

At the pilot project's end, the class instructor and eIC solicited feedback from students and mentors. The main points are summarized below:

- **Both students and mentors wanted more time and more interaction.** Both groups wanted to interact prior to the end of the semester, and they wanted the option to either meet in person, via phone, or through email to review the ePortfolios together.

- **A third of the mentors missed the evaluation deadline.** Mentors suggested that future mentors be given a longer period to assess the ePortfolios and provide feedback.

- **Mentors suggested a more concise and simple rubric.** The rubric contained 6 sections with a total of 35 assessment questions. Mentors were asked to provide a numeric assessment for each question in the component. In response to mentor feedback, the assessment will change. It will retain the 6

Figure 3. Leadership Questions for ePortfolio Narratives

LEADERSHIP

1. Collaboration/Teamwork
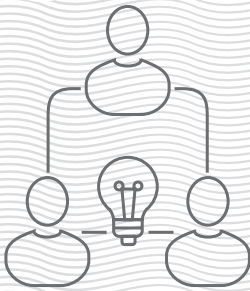
o Talk about a time when you had to work closely with someone whose personality was very different from yours.
o Tell me about a time you needed to get information from someone who wasn't very responsive. What did you do?

2. Change/Ability to Adapt

o Describe a time when your team or company was undergoing some change. How did that impact you, and how did you adapt?
o Give me an example of a time when you had to think on your feet in order to delicately extricate yourself from a difficult or awkward situation.

3. Communication Skills

o Give me an example of a time when you were able to successfully persuade someone to see things your way at work.
o Give me an example of a time when you had to explain something fairly complex to a frustrated client, employee, or colleague. How did you handle this delicate situation?

4. Creativity

o Describe a time when you saw a problem and took the initiative to correct it rather than waiting for someone else to do it.
o Give me an example of a time you were able to be creative with your work. What was exciting or difficult about it?

5. Conflict Resolution

o Describe a situation where you disagreed with a supervisor.
o Tell me about a team project when you had to work with someone difficult.

6. Cross Cultural Awareness

o Talk about a time when you had to work closely with someone whose culture was very different from yours.
o Describe a project that you worked on that promoted diversity. What impact did it make in your organization?

7. Community Engagement
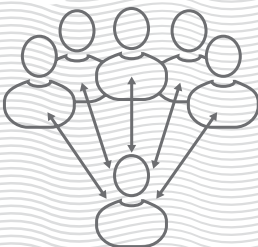
o Tell me about a community project that you worked on and why you decided to work on the particular project.
o Share a rewarding community engagement experience.

8. Critical Thinking
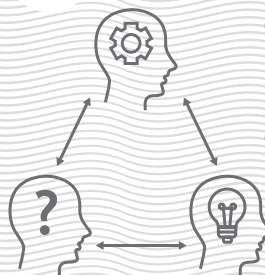
o Give an example of a goal you reached and tell me how you achieved it.
o Describe a decision you made that wasn't popular and how you handled implementing it.

sections, but will only have 3 to 4 assessment questions per section (18-24 questions). Instead of a numeric rating for each question, mentors will be asked to choose between three ratings: "Above Expectations," "Meet Expectations," and "Below Expectations."

Following are excerpts from virtual mentors' assessments of student ePortfolios:

"This is a great start. I would encourage the candidate to continue to think about his leadership philosophy and how he wants to use his leadership skills and professional skill set to make this world a better place."

"Excellent job overall. I can tell that you are an exceptionally intelligent and motivated individual. You have very strong business writing—which are incredibly important in the workplace."

"This E-Portfolio provides a basic overview of [the student's] experience and background. The leadership section was the most enlightening element of the ePortfolio. The other sections were light on detail or supporting information— they would have benefited from supporting text, photos, or videos."

"This portfolio would make it past the first cut for an entry-level growth position involved with customer service and teamwork."

"Statement of the thought process leading to a different approach showed creativity, which is a valuable character trait to employers interviewing college grads, in my experience."

"Exceptional! It is obvious that a lot of time and thoughtfulness went into this portfolio. From a hiring standpoint, I would be very compelled to interview this student after seeing her portfolio."

- **The project was worthwhile.** Both students and mentors thought the project helped students translate academic skills to future employers. Both groups agreed the program should be continued by CBPP.

Forging Opportunities With AAC&U

The CBPP instructor and eIC recognized that a possible challenge with the project was designing a rubric that conveyed a mutual understanding of learning outcomes considered important to both employers and academics. AAC&U's VALUE rubrics served as a bridge linking learning outcomes, workforce skills (soft skills), and ePortfolios.

AAC&U has been a driving force nationally in developing strategies and initiatives to promote the value of liberal education. As part of their Liberal Education and America's Promise (LEAP) work, AAC&U crafted a set of rubrics that helped operationalize LEAP concepts and ideals. These rubrics are at the core of their VALUE work. The CBPP instructor and eIC saw their project as an opportunity to connect with AAC&U.

"When we published the VALUE rubrics in 2009, AAC&U was interested in how this work would evolve both from an academic perspective as well as a workforce perspective. Hence, I was delighted when Paul Wasko contacted me last fall and shared that he and his colleague, Terry Nelson, were planning to modify select VALUE rubrics through the lens of Anchorage business leaders. I celebrate with them how this pilot adaptation of the academic rubrics for preparing for work was positively received by both students and the employer community," said Vice President Terry Rhodes.

Conclusion

Students encounter numerous opportunities to utilize the leadership skills like emotional intelligence, creativity/innovation, collaboration, communication, and critical thinking that employers require for the modern workplace. Postsecondary institutions should position themselves at the intersection of employers and practice (Association to Advance Collegiate Schools of Business, 2016). The ePvP ePortfolio program proved to be a powerful and useful mechanism that fostered productive partnerships between the UAA CBPP and Alaska employers. Most important, the ePvP program helped students better translate synergies and skills garnered through their degree programs into employable skills favored by future employers.

REFERENCES

American Management Association (AMA}. (2012). *AMA 2016 critical skills survey*. Retrieved from http://playbook.amanet.org/wp-content/uploads/2013/03/2012-Critical-Skills-Survey-pdf.pdf

Arnett, A. A. (2017). To close skills gap, entire higher ed business model must be reconsidered. *Education Dive*. Retrieved from http://www.educationdive.com/news/to-close-skills-gap-entire-higher-ed-business-model-must-be-reconsidered/444414/

Association of American Colleges & Universities (AAC&U). (2015). *Falling short? College learning and career success*. Washington, DC: Hart Research Associates.

Association to Advance Collegiate Schools of Business (AACSB). (2016). *A collective vision for business education*. Tampa, FL: AACSB International.

Goodin, A. D. (2012). Successful at the academy, less so at finding employment: Different skills needed. *The EvoLLLution*. Retrieved from https://evolllution.com/opinions/successful-at-the-academy-less-so-at-finding-employment-different-skills-needed/

Jaschik, S. (2015). Well-prepared in their own eyes. Retrieved from https://www.insidehighered.com/news/2015/01/20/study-finds-big-gaps-between-student-and-employer-perceptions

National Association of Colleges and Employers (NACE). (2017). *Job outlook 2016: The attributes employers want to see on new college graduates' resumes*. Retrieved from https://www.naceweb.org/career-development/trends-and-predictions/job-outlook-2016-attributes-employers-want-to-see-on-new-college-graduates-resumes/

Porto, S., & Thompson, J. (2017). ePortfolios based on competency models: Connecting academia to the workplace and back. *The EvoLLLution*. Retrieved from https://evolllution.com/programming/credentials/eportfolios-based-on-competency-models-connecting-academia-to-the-workplace-and-back/

Strauss, Karsten. (2016). These are the skills bosses say new college grads do not have. Retrieved from https://www.forbes.com/sites/karstenstrauss/2016/05/17/these-are-the-skills-bosses-say-new-college-grads-do-not-have/#4dee7cb65491

The Conference Board, The Partnership for 21st Century Skills, Corporate Voices for Working Families, & Society for Human Resource Management. (2006). *Are they really ready to work? Employers' perspectives on the basic knowledge and applied skills of new entrants to the 21st century U.S. workforce.*

University of Missouri-St. Louis. (2012). Skill gaps: The ill-prepared workforce. St. Louis, MO: College of Business Administration, University of Missouri-St. Louis. Retrieved from http://www.umsl.edu/divisions/business/files/pdfs/skillsgap13_14.pdf

Watson, E. C., Kuh, G. D., Rhodes, T., Light, T. P., & Chen, H. C. (2016). Editorial: ePortfolios—The eleventh high impact practice. *International Journal of ePortfolio, 6*(2), 65-69.

PLACING STUDENTS IN THE CENTER: CREATING PARTNERSHIPS BETWEEN EDUCATORS AND EMPLOYERS TO ASSESS ADULT LEARNERS IN THE WORKPLACE

By Len Charney, Dean of Practice, Boston Architectural College

An Overview

An important goal for educators charged with assessing competency-based adult learning in settings outside conventional classrooms is to help students reflectively scaffold and articulate their challenges and accomplishments as well as develop a clear vision for their personal growth and advancement. Regrettably, these positive results can be compromised if a student's sense of achievement is overly influenced by a supervisor who gauges success—along with recommendations for future roles and responsibilities—fundamentally by the timely completion of assigned tasks and deliverables without spending sufficient time to double back and examine the process of learning itself.

An effective remedy is to facilitate a lively assessment process centered on a well-planned, continuous 3-way conversation between the employer, the academic advisor, and the student. Conducting assessments with students in their actual work setting and in the company of direct supervisors—having them present documentation that defines and validates their experience—prompts a rich, multilayered exchange. Students are apt to be more candid and self-assured when they are encouraged to unpack, clarify, and champion their own learning experience in a setting that they judge to be safe and supportive. Recapping knowledge and displaying deeper understanding reveals buried details, extends memory more keenly, and fosters greater retention of fine-tuned skills for future assignments. Research supports that, when performed properly, feedback loops have a positive effect on job performance and facilitate adaptability and learning (Crommelinck & Anseel, 2013). What is, perhaps, most appealing is that the collaborative interaction between student, academic advisor, and supervisor encourages each to actively learn and gain mutual respect from the others.

> *Students are apt to be more candid and self-assured when they are encouraged to unpack, clarify, and champion their own learning experience in a setting that they judge to be safe and supportive.*

A Workplace Assessment

Assessment Tools
- The Student Learning Contract
- Student Self Assessment/ Reflective Essay
- Student Portfolio of Evidence
- Supervisor Assessment
- Assessment Evaluation Form

Jumpstart the Conversation

Student/Employee

The Academic Advisor

Manager/Supervisor
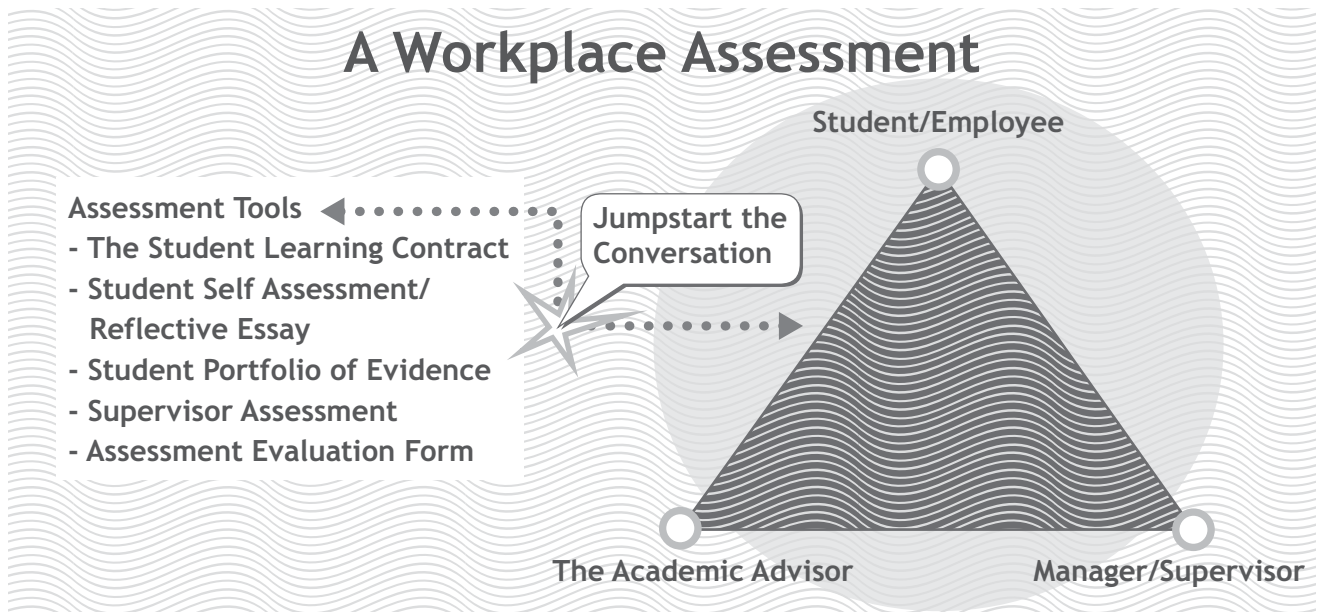
This paper provides guidelines for academic advisors, students, and supervisors to follow when completing performance evaluations or assessments in the field. It begins by recognizing common characteristics of adult learners, aligning these traits with methods that motivate them to carefully document what they have learned and be contemplative. Given the pressures and concerns that face supervisors when training and evaluating versus simply directing employees, the paper outlines different techniques that can be introduced by academic advisors to lessen a supervisor's apprehension, such as creating a script and modeling behavior for supervisors to learn from and emulate. It presents systemic tools that enable students to rigorously self-report learning and demonstrate competencies with metrics and outcomes that support a range of learning styles. Examples and practical hints are suggested which promote a reciprocal dialogue.

Once students have prepared portfolio-worthy evidence, academic advisor and supervisor are well positioned to examine, request clarification, or ask questions in a probing yet positive manner. Recommended improvements or supplemental evidence is required at times to clarify and validate learning outcomes before a student's updated status is entered into her/his permanent record. Finally, recommendations for further achievement are integrated into the assessment conversation; once

the full complement of procedures, discussion, and documentation have taken place, the assessment is deemed complete.

Incorporating Essential Adult Learning Criteria in an Assessment

Principles specific to adult learners shape an assessment that is both "summative" in nature—that is, one that objectively evaluates project outcomes—and "formative" by focusing on the learning cycle itself (Vaughan & Cameron, 2009). Attention has to be paid to both perspectives for there to be balance and reciprocity between the supervisor's summative concerns that gauge "getting the job done" and the academic advisor's interest in taking the long view by encouraging students to retrace steps and emphasize personal development and growth. The joint assessment approach ensures that students maintain their status as valued employees as well as students in good standing. Moreover, it codifies practices that enable a self-directed pathway or learning contract, with the student exercising maximum control.

Adults need to be involved in planning and evaluating their own instruction, and their experiences should provide the core of learning. It is important to recognize direct relevance between subject matter and job or personal fulfillment because adult learning is problem centered rather than content oriented (Conlan,

Grabowski, & Smith, 2003). These principles not only apply when scrutinizing the quality of instruction provided by teachers in conventional classrooms but also when gauging approaches taken by managers and supervisors while interacting with their employees in the field. In order to evaluate the overall effectiveness of instruction, we need to assess learning outcomes by the quality of student work and by the quality of constructive feedback provided to the student.

The Significant Role of the Educator/ Academic Advisor in a Field Assessment

The reluctance of supervisors to assume responsibility for conducting a comprehensive, critical assessment related to student/worker performance—a factor that is sometimes echoed by students—may be due to a number of concerns. Such apprehensions include time and resource constraints, general discomfort stemming from a lack of formal training or support from within the organization, plus a fear of consequences or reprisal for speaking or acting inappropriately.

Involving an academic advisor in a formal assessment performed in a work setting cultivates a controlled situation and can possibly offset a supervisor's concerns. Positive results might be contingent on the academic advisor's ability to offer a steady hand and nurture a thoughtful dialogue—objectively functioning as coach, buffer, and role model. They establish rules of engagement and metrics, ensuring beneficial outcomes for everyone.

The academic advisor assumes responsibility for preparing evaluative tools and templates to gauge performance, then makes sure that students have included a self-assessment questionnaire in their formal documentation. In addition, the supervisor is typically required to forward in advance a written performance questionnaire to validate and score the caliber of the student's learning experience.

Evaluative Tools that Document and Measure Applied Learning

A customized set of evaluative materials are integrated into the assessment process to classify and appraise a student's knowledge and *applied* understanding. This formal documentation serves as a reference for the academic advisor and supervisor to jointly jumpstart close scrutiny of a student's work and comfortably prod the student for clarification or expanded self-examination of their work.
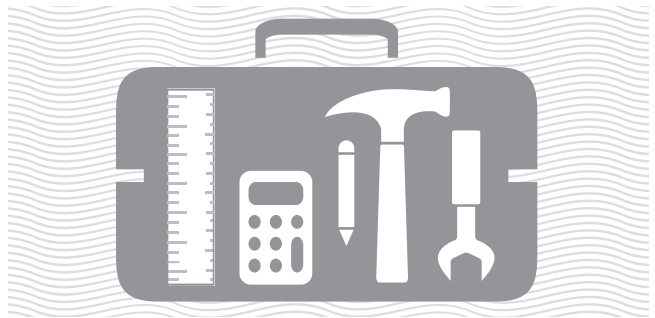
The Student Learning Contract

A well-organized assessment starts with a catalogued set of skills and competencies which incorporate content and performance criteria relevant to a particular professional discipline, vocational area, craft, or trade and which is used to measure a student's achievement. Referred to as a learning contract, this document allows adult learners to assume major responsibility for charting their own career paths; it grants them considerable freedom to complete tasks encompassed within project-based, on-the-job instruction and training. An expansive learning contract outlines what the student needs to know, helps define appropriate learning settings, identifies the types of projects where skills might be developed, and suggests a flexible timeframe to complete tasks and acceptable deliverables. Furthermore, the learning contract details how the student's improvement will be scored, plus intervals or milestone activities that influence the frequency of required assessments.

The learning contract levels the playing field by clarifying for the student, supervisor, and academic advisor the scope of expected requirements that must be verified during the assessment process. To foster knowledge transfer, there needs to be consensus about preferred learning outcomes and clear indicators that the student has achieved deeper critical understanding that will facilitate knowledge transfer on to future projects. It is essential that skill and competency conventions have been prepared with objective input from both the educator and the practitioner. If not, there is a risk that differences of opinion will interfere

when estimating student progress. By recognizing essential knowledge, skills, and expertise that students need in order to acceptably perform as an intern or employee, the educator should, in turn, support the student's progress by ensuring that classroom instruction is aligned with what a student needs to know at work. Moreover, students must understand—and be able to articulate—how the evidence they prepare and exhibit serves them well outside the classroom. They must feel that there has been ample opportunity to practice and develop the necessary expertise to advance through future projects.

> *Evidence should depict opportunities where the student has taken responsibility for his own learning, rather than simply following instructions.*

Important Portfolio Elements

The portfolio serves as the main instrument for the student to present evidence of their professional development through project based learning. There are countless functional guides available that describe how to organize the documentation of work—what to include, how to format, and different criteria used to assess satisfactory progress. Suffice it to say that in order for the portfolio to be effective, it must be thoughtfully planned and purposefully composed to accurately communicate the application and critical understanding of essential competencies and skills.

Entries in the portfolio must be hand selected by the student, who should be encouraged to represent examples of work in ways that far exceed checking off completed tasks and deliverables. The final portfolio will serve as the common bridge for student, supervisor, and academic advisor to discuss the quality of work and evaluate progress that has been made. If instructors expect students to demonstrate nuanced problem solving and critical thinking that has spawned careful analysis and thoughtful problem solving, then prior counseling that they provide the student needs to emphasize the importance of iterative exploration, and how handicaps or obstacles have been overcome.

Portfolio evidence should be directly aligned with requisite skills and competencies that are prescribed in the learning contract. During the assessment session, the student wants to make sure that the exhibit of work draws attention to skill building. Both narrative and supporting graphics should specifically use language found in the learning contract. If particular terms are referenced, for example, "demonstrates critical thinking," "collaboration," or "integrated and applied learning," the student should describe the scope of their involvement in a project using similar terminology.

We live in a world that expects individuals to appreciate and thrive working collaboratively. Individuals who describe successful project work as a collective enterprise, accentuating how they have identified and solved problems collectively, are valuable team members and thus more desirable. Active listening demonstrates self-confidence with an attendant willingness to challenge assumptions and support opinions proposed by other members of the team. It is perfectly acceptable to present final work as a group effort where the student's individual contribution is accurately shown and integrated into the presentation.
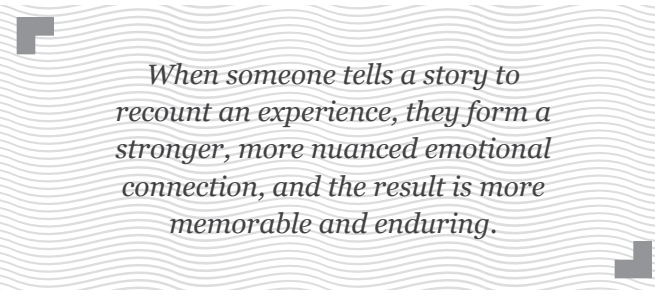
The range of projects featured in portfolios should highlight growth and improvement. Evidence should depict opportunities where the student has taken responsibility for his own learning, rather than simply following instructions; it should exhibit the testing of concepts and fundamental ideas and how this process has influenced the unfolding of viable solutions. It is the story of how experience becomes personal learning. The student should not feel compelled to exclusively show the most polished, impressive efforts. Formative work punctuates nascent phases of the learning process, with the portfolio organized so that critical understanding later resurfaces in subsequent portfolio pieces in an advanced, evolved manner. This progressive gaining of knowledge—along with increased skills— is something the student communicates directly during the assessment meeting.

The entire portfolio is meant to serve as an exercise in synthesis, bringing together evidence of technical skills and analysis of the learning experience. A concise introductory essay—one page

will usually suffice—should provide an overview of the student's learning experience and serve as a transition between acquired technical skills and a personal celebration of overall professional growth and development. It reflectively shares significant challenges, accomplishments, and a personal vision for next steps and progress.

Enriching the Assessment Conversation

The academic advisor provides critical leadership by opening the meeting with simple rules of engagement: stating that the paramount goal is to provide constructive feedback on work that has been prepared by the student and pointing out that clarifying questions and additional issues are likely to arise. Being critical of presented work is certainly acceptable, assuming that the student's conscientious efforts are first acknowledged, that comments are framed supportively, and that specific recommendations for improvement are included.

> *When someone tells a story to recount an experience, they form a stronger, more nuanced emotional connection, and the result is more memorable and enduring.*

After this necessary introduction has been made, students should be asked to summarize the work they have detailed in their portfolios, underscoring both challenges and accomplishments. Rather than simply depending on the supervisor and academic advisor to control the conversation, the student should be asked if there are particular areas where it would it be helpful to receive counsel or critical feedback. An open discussion of the student's reflective essay/self-assessment narrative provides another opportunity for the student to claim ownership over her/his learning and progress.

Students should be encouraged to portray their experience in the form of a personal story. This depiction of their learning will prompt the student to recapture essential details and share insights that might otherwise be lost. Time and again it is found that when someone tells a story to recount

an experience, they form a stronger, more nuanced emotional connection, and the result is more memorable and enduring (Eck, 2006).

A common mistake is to ask the student to enumerate their skills in the form of a detailed list to quantify and, thereby, validate what they have learned. However, when an advisor asks students to depict their work more dynamically by bringing to life how they responded to challenges that unfolded in the course of an actual project—and then doubles back asking them clarifying or probing questions—the academic advisor allows the student to perceive, then articulate, and finally stake a stronger claim to essential skills and competencies acquired or reinforced along the way. A related approach is to refer to the student learning contract to verify the intrinsic value of direct project-based activities; this reflection also enables the student to project where future assignments might further advance skill development.

The process of examination, clarification, and reinterpretation during an assessment process will likely trigger the work supervisor to fully appreciate the breadth of the student's involvement and understanding. In addition, this method of assessment underscores the importance of providing sufficient time to highlight learning versus only completing the work.

Gaps in deeper understanding should be openly discussed at the assessment meeting. The supervisor might hear the academic advisor commenting about various options for the student to benefit from additional support available back at school. Support options could take the form of special tutoring, remedial instruction, or recommendations for more advanced coursework. Discussing knowledge gaps might then similarly prompt the supervisor to consider other resources within the work setting to help the student keep pace and improve. It could encourage the supervisor to think about other opportunities for learning and discovery: everything from the chance to attend client meetings, shadow veteran staff, designating a mentor, or even different project assignments. The academic advisor's actions and behavior are now being actively modeled in ways that benefit the student's professional development.

Repositioning Assessment to Provide Quality Feedback for Adult Learners

In their 2006 article on adult learning and assessment, "Formative Assessment and Self-Regulated Learning: A Model and Seven Principles of Good Feedback Practice," Nicol and Macfarlane-Dick support the belief that adults prefer to structure their own learning and proactively seek critical feedback. The seven principles they propose for students to achieve maximum control of the assessment process have been incorporated into this paper and bear specific mention. These principles are a fitting summary to reshape assessment procedures for experiences occurring in the workplace. They are especially helpful when there is a strong interest to form an integrated alliance between educators and supervisors, one that precedes a unified discussion with the student.

According to Nicol and Macfarlane-Dick, feedback should:

1. Clarify what good performance is (goals, criteria, and expected standards).

2. Encourage reflective learning.

3. Deliver high quality information about student learning.

4. Encourage teacher/peer dialogue around learning.

5. Encourage positive motivational beliefs and self-esteem.

6. Provide opportunities to close the gap to achieve desired performance.

7. Provide information to teachers that can be used to help shape teaching.

When it comes to validating and developing common understanding about the merits of competency-based education, conducting a 3-way performance assessment in the field is one of the most effective ways to find common ground between employers and the academy. Properly planned and executed, the transparency of this format for assessment bridges a critical gap, enabling each participant to learn from the other. The exchange fosters a safe setting for both groups to question why they previously isolated or compartmentalized diverse skills needed to be successful in today's increasingly complex work environment. Employers too often berate educators for not providing meaningful instruction and not preparing graduates for "the real world." Simultaneously, classroom educators criticize supervisors for being too preoccupied with meeting deadlines and satisfying increasingly demanding clients instead of supporting double loop learning with time spent nurturing employees to consider lessons learned, or even teaching them *how* to learn. By creating an assessment process that places students in the middle, agency is given to both academic advisors and supervisors to value the instruction and preferred skills/competencies they are most familiar with, yet extend themselves to test assumptions and consider how this collaborative approach truly serves the best interests of the student. As Dorothy Wax and Becky Klein-Collins remind us, "Involving faculty in discussions with employers about competencies ...can result in recognition that the goals of faculty and employers are essentially the same. Both faculty and employers want students to gain broad, transferable skills that will enable the student to be a lifelong learner with the ability to apply their skills to a broad range of ever-changing circumstances" (2016).

REFERENCES

Conlan, J., Grabowski, S., & Smith, K.. (2003). Adult Learning. In M. Orey (Ed.), *Emerging perspectives on learning, teaching, and technology*. Retrieved from *http://epltt.coe.uga.edu/*

Crommelinck, M., & Anseel, F. (2013). Understanding and encouraging feedback-seeking behavior: A literature review. *Medical Education, 47*(3), 232-41.

Eck, J. (2006). *An Analysis of the Effectiveness of Storytelling with Adult Learners in Supervisory Management* (Unpublished Master of Science research paper). Career and Technical Education, The Graduate School, University of Wisconsin-Stout.

Figgis, J. (2009, April 28). *Regenerating the Australian landscape of professional VET practice: Practitioner driven changes to teaching and learning.* National Centre for Vocational Education and Research. Retrieved from *https://www. ncver.edu.au/publications/publications/all-publications/ regenerating-the-australian-landscape-of-professional-vet- practice-practitioner-driven-changes-to-teaching-and-learning#*

Harvey, O., & Harris, P. (2008). *The skills-productivity nexus: Connecting industry training and business performance.* Wellington: New Zealand Department of Labour.

Helyer, R. (2015). Learning through reflection: The critical role of reflection in work-based learning (WBL). *Journal of Work-Applied Management, 7*(1), 15-27.

Knowles, M. S. (1960). *The modern practice of adult education: From pedagogy to andragogy.* NY: Cambridge Adult Education.

Mezirow, J., & Associates. (1990). *Fostering critical reflection in adulthood: A guide to transformative and emancipatory learning.* San Francisco, CA: Jossey Bass.

Nicol, D. J., & Macfarlane-Dick, D. (2006). Formative assessment and selfregulated learning: a model and seven principles of good feedback practice. *Studies in Higher Education, 31*(2), 199-218. DOI: 10.1080/03075070600572090

Peach, D., Ruinard, D., & Webb, F. (2014). Feedback on student performance in the workplace: The role of workplace supervisors. *Asia-Pacific Journal of Cooperative Education*, (15)3, 241-252.

Richardson, J., Kaider, F., Henschke, K., Kelly, M. P., Jackling, B., & Tempone, I. (2009, November). *The role of industry supervisors in providing feedback to students as part of the assessment process in work-integrated learning (WIL).* Paper presented at the Australian Technology Network (ATN) Assessment Conference. Melbourne, Australia.

Shafer, L. (2015). Learning to Learn at Work: How to Make the Most of On-The-Job Learning. *Usable Knowledge.* Retrieved from *https:// www.gse.harvard.edu/news/uk/15/12/learning-learn-work*

Sturgis, C. (2012). *The art and science of designing competencies.* A CompetencyWorks Issue Brief, International Association for K-12 Online Learning. Retrieved from *http://www.competencyworks. org/wp-content/uploads/2012/08/CompetencyWorks_IssueBrief_ DesignCompetencies-Aug-2012.pdf*

Vaughan, K., & Cameron, M. (2009). Assessment of learning in the workplace: A background paper. Wellington: New Zealand Council for Educational Research for the Industry Training Federation Research Network.

Wax, D., & Klein-Collins, B. (2016). Competency-based education: A powerful way to link learning and the workplace. *The EvoLLLution.* Retrieved from *https://evolllution.com/programming/ applied-and-experiential-learning/competency-based-education-a- powerful-way-to-link-learning-and-the-workplace/*

AN OVERVIEW OF RETURNERS IN ENGINEERING GRADUATE EDUCATION: DIVERSE PATHWAYS AND UNANSWERED QUESTIONS

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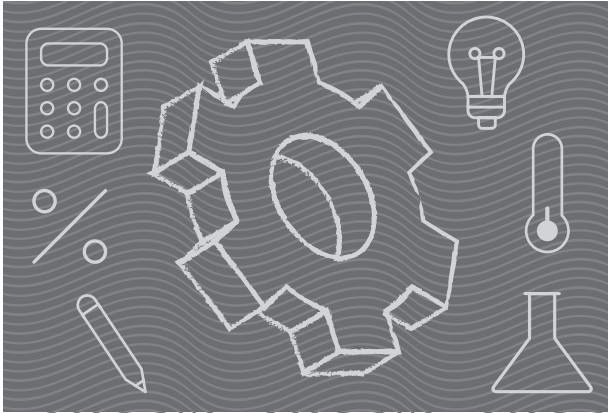
Introduction

In fields like education, people who pursue graduate degrees do so at varying stages of their career, including after having significant time in the workforce. In other fields, such as engineering, there is less variation in students' typical paths through graduate school, with the majority of students pursuing graduate study shortly after completing their undergraduate degree. The average age of engineering PhD students upon graduation is 30, compared to 34.2 in humanities and 38.3 in education (National Science Foundation et al., 2014).

While it is common for most engineering students to go directly into graduate studies after completing their baccalaureate degree, some people do wait until later in their life and career to pursue a graduate education (either a master's degree or a doctorate). We define those who choose this path as "returning students" or "returners," in contrast to "direct-pathway" students who have little or no gap between their undergraduate and graduate education. Returner status exists on a continuum, but for our work we defined the boundary between the two groups as

a five year gap. Five years would allow a person to establish a professional identity, to forget things that had not been used since graduation, to learn new skills, and for the academic environment to evolve as well. There are several key thresholds that are at or near this time span and further support this number: GRE scores are good for five years before the test needs to be re-taken, the Professional Engineer designation requires at least four years' work experience in addition to the two required tests, and engineering programs are re-accredited by ABET on a six-year cycle.

Returner status is not a tracked demographic in engineering graduate programs, so the exact number of returners is not known. From our research and data on average age of graduate degree completion, it appears returners are a relatively small portion of the engineering graduate student population. Despite this, returners can have a large impact on the field, as they can add to the diversity of thought and perspectives in their graduate institutions based on their work and life experiences (MacFadgen, 2008; Schilling, 2008; Strutz, Cawthorne Jr., Ferguson, Carnes, & Ohland, 2011). Returners' on-the-job experience gives them a unique perspective not only on curriculum but also on the real world applications of their graduate work and research.

In this paper, we describe our research on United States domestic returners. In an initial pilot study, conducted at a single major Midwestern university, we explored the experiences of a diverse group of 10 returners in various STEM disciplines, in both master's and doctoral programs. In a second study, with a large national pool of participants, we examined issues surrounding

returners in engineering doctoral programs. Our third study, which is currently ongoing, focuses on the differences between direct-pathway students and returners in engineering master's programs. These studies, although just a beginning, show that work experiences supplement and enhance formal learning experiences. Returners' work experiences provided them with motivation for their further education and gave them a different perspective on what they saw in the classroom. After presenting a summary of the findings from these studies, we discuss several questions for future study.

Pilot study

The initial pilot study was conducted in 2010-2011 with participants from a major Midwestern research university (Peters & Daly, 2011; 2012; 2013). The goal of this study was to explore the experiences of returners with a focus on why they chose to return, what challenges they faced, and how they overcame them. We interviewed 10 returners. Interviews lasted approximately one hour. The interview protocol covered five areas:

- Demographic questions;
- Preparations for returning to school;
- Differences and challenges;
- Contributions to success; and
- Closing remarks.

The participants included 4 females and 6 males and ranged in age from 27 to 45. They had been out of school for a minimum of 5 years, with the largest gap being 18 years.

> *There are four types of perceived task value described in Expectancy Value Theory (EVT): utility, interest, attainment, and cost, with cost functioning as a disincentive that counters the three incentivizing values.*

Several analyses were conducted on the data from these interviews; an initial analysis focused on identity and looked at transitions in participants' identity as they went from professional to student (Peters & Daly, 2011). A further analysis was conducted using Expectancy Value Theory (EVT). In EVT, decisions are a function of a person's expectancy of succeeding in a given task along with the perceived value an individual associates with that task. There are four types of perceived task value described in EVT: utility, interest, attainment, and cost, with cost functioning as a disincentive that counters the three incentivizing values (Eccles, 2005; 2009; Wigfield & Eccles, 2000). In EVT, utility is defined as the person's perception of what advantages they will have from achieving a goal. Interest is their anticipated enjoyment of the things they will be doing to achieve that goal, and attainment is their perception of how it contributes to who they are at a fundamental level.

This analysis revealed that the primary motivation for the participants to return to graduate school was utility, followed by interest. Attainment was the least significant component of the value of their graduate degree (Peters & Daly, 2013). The utility they perceived took different forms: to transition from an industry career pathway to an academic career pathway, to change the focus or direction of an industrial career into a new specialty area, or to advance in a current career path (Peters & Daly, 2012).

Returners felt that they were able to succeed at the degrees they had started but had questions about whether their studies were worth it—cost, both financial and non-financial, was a major concern. The costs they experienced were analyzed and categorized, and we found that these costs could be broken down into four major categories: financial, intellectual, balance, and cultural/environmental. The degree to which these costs affected different people varied, as did the strategies they used to deal with the costs. As an example, some people had a working spouse or partner who was able to support them during their degree program while others made lifestyle changes or drew on other financial resources.

One of the intellectual costs that returners faced was the fact that they had forgotten some material while out of school. The degree to which this cost was a problem varied based on how long they were out of school and what material they actually used in their jobs. Returners took two basic approaches when faced with material they had forgotten: some participants studied intensively to recover that material, others chose degree programs that drew more on their

current knowledge and strengths and avoided the need to do as much to recover past knowledge.

Returners in PhD Programs

Building on findings from our pilot study, we designed a multi-phase study of both returners in engineering doctoral programs as well as their direct-pathway peers. This study, launched in 2012, included three phases: characterizing the population, capturing in-depth information, and understanding stakeholder views, as shown in Figure 1.

Figure 1: Phases of Study on Doctoral Returners

Phase 1

Goal: Characterize the population of returning students

Approach: Develop and distribute a national survey of returners and direct-pathway students

Phase 2

Goal: Capture in-depth information on the interaction between prior work experience and research

Approach: Conduct interviews with returners and direct-pathway students

Phase 3

Goal: Understand stakeholder views and institutional policies in academia, industry, and government

Approach: Conduct interviews with returners and direct-pathway students

In the first phase, we developed and deployed the Graduate Student Expectancy and Motivation Survey (GSEMS), covering 30 states and 61 universities (Mosyjowski, Daly, Peters, & Skerlos, 2013). We used a rolling recruitment strategy in an effort to get approximately equal numbers of returners and direct-pathway students. Ultimately, the respondents included 179 returners and 297 direct-pathway students. The survey questions covered 11 topics:

- Demographic information;
- Academic background;
- Current academic information;
- Pre-PhD activities/career;
- Decision to pursue a PhD;
- Expectancy of success in PhD;
- Values of the PhD;
- Costs of the PhD;
- Cost reduction strategies;
- Advising relationship; and
- Post-PhD plans.

We conducted several analyses, including a simple description of the detailed demographics of the study population (Mosyjowski, Daly, Blake, Peters, & Skerlos, 2015), an analysis of participants' interactions with their advisors (Mosyjowski, Daly, Peters, Skerlos, & Baker, 2014), and a mixed-methods analysis of the challenges and benefits associated with pursuing a PhD as a returning student (Mosyjowski, Daly, & Peters, 2017a). The mixed-method analysis indicated that returners had significant financial concerns with pursuing a doctorate, particularly given the salaries they were able to command while working. They felt that their work experience was helpful in that it gave them a greater understanding and appreciation of real world problems, and it helped them develop non-technical skills that were useful in academic work (Mosyjowski et al., 2017a). These skills included self-discipline, time management, communication, and project management, all of which allowed them to manage and complete their academic work effectively.

In the second phase of the study, we developed an interview protocol for semi-structured one-on-one interviews to be conducted by a member of the research team either in person or over Skype.

These interviews covered seven topics:

- Introduction to the interview and basic background information about a participant's current position in their PhD program;
- Characterization of their pre-PhD work and research experiences;
- Their process in deciding to pursue a PhD;
- Characterization of academic experiences and their doctoral research, including the progression of their research agenda;

- Students' plans upon completing their PhD;
- Hypothetical research scenario aimed at capturing various elements of their research process and related past experiences; and
- How students believe their past experiences shaped their doctoral work.

Participants were drawn from the GSEMS respondents. Analyses of these interviews, while still ongoing, has shown that there are considerable differences in the research process sophistication of different doctoral students (Mosyjowski, Daly, Peters, & Skerlos2016); although, the differences between returners and direct-pathway students' research processes are not yet well understood. Nonetheless, returners more commonly report intrinsic motivation for selection of their research area, which may be derived from the perspectives and skills gained from their past experiences (Mosyjowski, Daly, & Peters, 2017b).

> *Returners more commonly report intrinsic motivation for selection of their research area, which may be derived from the perspectives and skills gained from their past experiences.*

Returners in Master's Programs

The third study, which is still underway, focuses on understanding knowledge construction in the master's program as well as the differences between how returners and direct-pathway students learn in the classroom. Master's degree programs may take different forms, including coursework-only programs and a "professional" master's degree intended for those in the industry. Alternatively, they may include large research components and provide a pathway to a doctoral degree. Master's degrees are also offered at a wide range of institutions, both those that offer a doctoral degree and those that do not. Because of these differences, we expected that the issues affecting returners could be different in master's degree programs compared to doctorate programs.

The study on engineering returners in master's degree programs is focused on the way in which learning is affected by prior work experience. This project has two phases. In Phase 1, a survey was developed and deployed. This survey had several questions in common with the original GSEMS, but questions relating to the particular goals of that project were removed, such as the questions based on EVT and questions specific to the doctoral degree. Questions relevant to the new project were added.

The sections of this survey were:

- Demographics;
- Undergraduate information, including degree year and major;
- Other education, including a second or third master's;
- Family support and encouragement for the student in the master's program;
- Questions about the current master's program, including structure, advisor support, and major/focus; and
- Future plans that included choices such as consulting, remaining at current employer either with new responsibilities or in a different position, research, or pursuit of a PhD.

In Phase 2, currently being conducted, a subset of the survey respondents is being interviewed. This interview focuses on

- Prior experiences;
- Background knowledge, retention, and recovery of forgotten concepts;
- New knowledge and how learners incorporate it with what they already know; and
- Reflection on connections in their work between experience in industry/previous academic experience.

Analysis of the survey results has revealed that there are many similarities between returners and direct-pathway students in terms of their familiarity with computer tools and in their engineering skill set. While younger students may be considered "digital natives," returning students have a similar level of familiarity with modern computer tools and comfort using them. In most engineering skills, both groups are similar. In a few areas, however, returners have a higher level of self-efficacy. These areas include analyzing the tradeoffs between alternative

design approaches and selecting the one that is best for a given project, identifying the safety concerns that pertain to a current project, and synthesizing information to reach conclusions that are supported by data and needs. This proficiency is most likely due to the fact that returners have practiced these skills for years in the workplace, while direct-pathway students have not had that opportunity (Gross, Peters, Mann, & Daly, 2017). Further analyses are ongoing to determine what other key differences and similarities may exist.

> *While younger students may be considered "digital natives," returning students have a similar level of familiarity with modern computer tools and comfort using them. In most engineering skills, both groups are similar.*

Unanswered Questions

Over the course of these research projects, we have learned a lot about returners in engineering graduate programs. We have seen that they face different types of costs, both financial and non-monetary, but despite these obstacles they are also highly motivated to complete their degrees. We know that their work experience affects their attitudes about learning; they may be even more motivated than they were in their undergraduate work (Peters & Daly, 2011). They realize how much they know but also understand that there will always be more to learn, and they are willing to put in the effort to do so.

However, there remain many unanswered questions. Some were beyond the scope of these research projects, while others have arisen in the course of these projects. They can be grouped, roughly, into seven categories.

What Are the Demographics of Returners?

Because returner status is not a tracked demographic, we cannot be certain if these findings are generalizable to the entire population of returning students in the U.S. If returner status became a commonly tracked demographic characteristic by universities, we could have a better understanding of common pathways through graduate school. For instance, are there particular points in individuals' personal or professional lives in which they are particularly likely to return? Do many returners have particular personal or academic experiences that distinguish them from their direct-pathway peers? What is the gender breakdown, and how many underrepresented minorities are returners?

What Other Factors May Motivate Returners?

Some of the motivations for returning have been studied in the course of these projects. Many returners use a master's degree as a way of attaining the level of education needed to change jobs or to consult. The additional education, potentially in a new field, allows them more choices within their current employment and in future plans. Motivation to learn in and of itself has also been shown to be an important factor with returners. However, there may be additional motivations that have not been captured at this point which might draw someone to return to graduate school for an additional engineering degree.

What Determines Whether a Potential Returner Will Return?

All of these studies have focused on those who did return to graduate school for an additional degree. However, there may be people who consider going back to school for a graduate degree but decide not to for some reason. Others may attempt to go back but are unable to find an appropriate program. Yet more people may find a program that appeals to them, apply for admission, and are rejected. We have no idea how many of these people may exist or how they differ from those who do successfully return for a graduate degree. Universities' and employers' policies and procedures may have a large impact on these people. Our analysis using EVT has implications for this area and points towards areas for further study.

What Additional Alternative Pathways Do Students Follow?

There is a huge spectrum of higher education pathways a person could take within the field of engineering. Some students may enter the

workforce right after receiving their bachelor's degree. Some of these bachelor's degrees represent on-the-job experience incorporated into the requirements for the degree, known as co-operative education. A student is placed within industry to experience real-world applications of their studies. A portion of these students may later decide to go back to school for a master's or PhD. Other students might proceed directly from their undergraduate studies on to a master's or PhD program. Whether engineering students go directly into a graduate program or wait, they could pursue a different field of engineering from their bachelor's or work experience. They could even earn multiple master's degrees in different areas of engineering. Further still, engineering students may opt to go to law school, medical or veterinary school, or study other professional terminal degrees. Some may choose to get a second bachelor's degree in another area of engineering or even in a totally different discipline. Each of these pathways presents its own challenges and benefits and are chosen for a myriad of reasons.

Co-operative education represents an alternative pathway because a number of universities encourage or even require a student to successfully complete a certain number of terms working as a co-op in their field in order to graduate. These students may have several years' worth of work experience by the time they graduate. Some of these students may then be employed at the place where they completed their co-op experiences. Because work in industry has been part of their undergraduate experience, are they more like returners (due to work experience), more like direct-pathway students (due to recent educational experience), or some combination? And of what influence is the gap experienced by returners?

How Do International Educational Experiences Intersect with Returning?

All of these studies have focused exclusively on domestic students—those who are United States citizens or permanent residents, with their undergraduate degree from a university in the United States. Students from foreign institutions, or United States citizens or permanent residents who study abroad, would face language and cultural issues that would impact their learning. Further, any issues would vary based on the countries involved. Additionally, other countries have different typical paths through postsecondary education that could shape the experiences of returning students.

How Can Educational Institutions Attract and Facilitate Returners?

What attracts returners to certain institutions over others? Undoubtedly, geography can play a role for those who are tied to a particular location for family and personal reasons. Beyond that, however, what makes a university attractive to returners, and able to support their success? It might be informative to identify policies, programs, and initiatives that are more attractive than others for returners. We do have interview data about students' decision making and quantitative data about who students consulted, which could provide the basis for further investigation.

Questions About the Long-Term Effects of Returning

All of the studies on returners have recruited from the population of current graduate students and are not longitudinal. Thus, the long-term effects on their lives and careers are not yet clear. We don't know what returners' long-term career progression looks like compared to those without any graduate degree or compared to those who pursued their graduate degree earlier in their lives. Are they satisfied with their decision as they look back over their careers? What were the long-term effects?

In addition to all of these questions, there are undoubtedly new questions that will arise through additional studies.

Summary and Conclusions

Over the course of these projects, we have learned a great deal about engineering returners in graduate programs, both in master's and in doctoral programs. We have learned that returner status affects graduate students in many different ways, including student motivation, the value of a graduate degree, and the personal and professional costs of pursuing a degree. We are beginning to understand how learning is affected by returner

status and, specifically, how that affects knowledge construction. Many questions remain to be answered, however, and it is our hope that future studies will address these questions and provide a more complete picture of engineering graduate student returners and the diversity they bring to the graduate student population.

REFERENCES

Eccles, J. S. (2005). Subjective task value and the Eccles et al. model of achievement-related choices. In A. J. Elliot and C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 105-121). New York, NY: Guilford Press.

Eccles, J. S. (2009). Who am I and what am I going to do with my life? Personal and collective identities as motivators of action. *Educational Psychologist*, 44(2), 78–89.

Gross, E. A., Peters, D. L., Mann, S. L., and Daly, S. R. (2017, June). Perceived self-efficacy of master's in engineering students regarding software proficiency and engineering acumen. Paper presented at the 2017 American Society of Engineering Education Annual Conference & Exposition, Columbus, Ohio. Washington, DC: American Society of Engineering Education. Retrieved from *https://peer.asee.org/27860*

MacFadgen, S. L. (2007). *Mature students in the persistence puzzle: an exploration of the factors that contribute to adult learners' quality of life and retention in post-secondary education* (Thesis). Faculty of Education - Simon Fraser University. Retrieved from *http://summit.sfu.ca/item/8453*

Mosyjowski, E. A., Daly, S. R., Peters, D. L., & Skerlos, S. J. (2013, June). Designing a survey instrument for a national study of direct-pathway and returning engineering graduate students. Paper presented at the 2013 American Society of Engineering Education Annual Conference & Exposition, Atlanta, Georgia. Retrieved from *https://peer.asee.org/19391*

Mosyjowski, E. A., Daly, S. R., Peters, D. L., Skerlos, S. J., & Baker, A. B. (2014, June). The PhD advising relationship: Needs of returning and direct-pathway students. Paper presented at the 2014 American Society of Engineering Education Annual Conference & Exposition, Indianapolis, Indiana. Retrieved from *https://peer.asee.org/23171*

Mosyjowski, E. A., Daly, S. R., Blake, A. B., Peters, D. L., & Skerlos, S. J. (2015, June). Engineering practitioners in PhD programs: Who are they and why do they return? Paper presented at the 2015 American Society of Engineering Education Annual Conference & Exposition, Seattle, Washington. Retrieved from *https://peer.asee.org/23975*

Mosyjowski, E. A., Daly, S. R., Peters, D. L., & Skerlos, S. J. (2016, June). Characterizing research process sophistication in engineering PhD students and the influence of prior experiences. Paper presented at the 2016 American Society of Engineering Education Annual Conference & Exposition, New Orleans, Louisiana. Retrieved from *https://peer.asee.org/26483*

Mosyjowski, E. A., Daly, S. R., & Peters, D. L. (2017a, June). Challenges and benefits of applied experience as an engineering returner in a PhD program. Paper presented at the 2017 American Society of Engineering Education Annual Conference & Exposition, Columbus, Ohio. Retrieved from *https://peer.asee.org/28021*

Mosyjowski, E. A., Daly, S. R., & Peters, D. L. (2017b). Drivers of research topic selection for engineering doctoral students. *International Journal of Engineering Education, 33*(4), 1283-1296.

National Science Foundation, National Institutes of Health, U.S. Department of Education, U.S. Department of Agriculture, National Endowment for the Humanities, & National Aeronautics and Space Administration. (2014). Survey of earned doctorates. Retrieved from *http://www.nsf.gov/statistics/srvydoctorates/*

Peters, D. L., & Daly, S. R. (2011, June). The challenge of returning: Transitioning from an engineering career to graduate school. Paper presented at the 2011 American Society of Engineering Education Annual Conference & Exposition, Vancouver, British Columbia. Retrieved from *https://peer.asee.org/18729*

Peters, D. L., & Daly, S. R. (2012, June). Why do professionals return to school for graduate degrees? Paper presented at the 2012 American Society of Engineering Education Annual Conference & Exposition, San Antonio, Texas. Retrieved from *https://peer.asee.org/22234*

Peters, D. L., & Daly, S. R. (2013). Returning to graduate school: Expectations of success, values of the degree, and managing the costs. *Journal of Engineering Education, 102*(2), 244-268.

Schilling, W. (2008, June). Issues effecting doctoral students returning to engineering education following extensive industrial experience. Paper presented at the 2008 American Society for Engineering Education Annual Conference & Exposition, Pittsburgh, Pennsylvania. Retrieved from *https://peer.asee.org/3847*

Strutz, M. L., Cawthorne Jr., J. E., Ferguson, D. M, Carnes, M. T. & Ohland, M. W. (2011, June). Returning students in engineering education: Making a case for "experience capital." Paper presented at the 2011 American Society of Engineering Education Annual Conference & Exposition, Vancouver, British Columbia. Retrieved from *https://peer.asee.org/19735*

Wigfield, A., & Eccles, J. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology*, 25, 68-81.

SECTION 2:
FOCUSING ON NEW WAYS TO PROVIDE CAREER SERVICES

INFORM. PREPARE. CONNECT.

A New Model of Career Services at University of Maryland University College

By Matthew Prineas, PhD, Provost and Vice President Academic, Athabasca University; and Francine Blume, PhD, Assistant Vice President, Career Development, and Nikki Sandoval, Associate Vice President, Career Services & Alumni Relations, University of Maryland University College

As discussed in our article, "Experiential Learning: The Core Philosophy of Education at the University of Maryland University College (UMUC)," our university is focused on the educational needs of working adults. Academically, the central experiential component is the project, on which students receive feedback and continue to refine their work. Consistent, timely feedback ensures learning and progress towards our students' goals of advancing in their careers, transitioning to new careers, or launching their first professional careers.

Academic preparation, however, may not be enough to support successful attainment of those aspirational career goals. Traditional university career services generally offer intense advising and guidance, exposure to different career paths, internships, and a focus on job readiness upon a May graduation date. However, with 86,000 adult learners balancing work, families, military service, and studies, and all at different stages of academic progress, UMUC needed to shift away from the traditional model centered on individual advising to focus on self-service content and tools providing immediate feedback.

This transition has enabled us to scale our services, which were originally reaching 1% of our student population, to the point where we are now directly reaching well over 14% of our students in two years' time. Through our integrated career services platform, students and alumni can access a wide variety of career tools and services. They can view the latest job openings, see mentors matched to their specific profiles, and access innovative artificial intelligence (AI) tools that provide immediate resume and interview performance feedback. This content is accessible 24/7, as are professional development webinars which are recorded in real time then archived on the career platform for easy access. Additionally, all career events have virtual components, thereby expanding accessibility.

Having these just-in-time tools and resources means help and feedback is available when they are needed. For those desiring more hands-on support, direct career advising services are still available.

Along with recalibrating our career services, UMUC has dedicated itself to cultivating a curriculum in direct alignment with the ever-advancing demands of the workforce arena Through real world project-based demonstrations of these competencies, students show they have mastered the knowledge, skills, and behaviors employers have said they need (Association of American Colleges and Universities & Hart Research Associates, 2013).

All of these developments have been implemented with the goal of supporting ongoing career development in the classroom and ensuring access to career services.

Merger of Career Services and Alumni Relations

During UMUC's efforts for significant curriculum reform, the importance of career planning and development became apparent, and we began work on scaling up and remodeling these services. We shifted the focus of our career services to be less on a reactive mentality and more on ways to empower students throughout their time here. In addition, we readily identified the need alumni also have for career planning and development and the power

they can collectively give to assisting students in career development. As a result, Alumni Relations and Career Services were merged into one team, leveraging the synergy between the two groups. This merger immediately combined key resources, including communications, website, and events. Staff assigned to these tasks were quickly able to handle the job for both areas, streamlining processes and elevating the consistency of career support. This innovative structure enables students and alumni to better leverage their UMUC education to realize both their potential and maximize the value of their education.

> *With 84,000 students and more than 200,000 living alumni scattered across the country and the world, the traditional model of career services needed to be radically changed.*

Given the need to scale services and given that UMUC is an online university with 84,000 students and more than 200,000 living alumni scattered across the country and the world, the traditional model of career services needed to be radically changed. Also, as the average student age is 31 years old and all students declare a major as they matriculate to the university, career exploration did not need to be our focus as much as providing just-in-time services. It takes an undergraduate an average of eight years to complete their degree; and with students moving at different academic paces, it's not possible for the career and alumni team to engage in intense one-on-one advising or structured programming based on academic standing over a period of years.

Many who still have yet to complete their degrees or have graduated are in need of immediate career assistance. About 50% of our clients are moving up in their careers, about 40% are changing careers, and the remainder are launching their first professional careers. Therefore, the most effective way to reach the most number of our clients efficiently was to flip the traditional career services model in several ways. We needed to provide instant access to a great deal of information and tools regarding job seeking and attainment skills. We needed to prepare active job seekers for immediate opportunities; and we needed to connect our students and alumni directly with mentors, career advising specialists, and employers. The focus of our career services approach is to inform, prepare, and connect our community.

Inform

Given that learners learn best when the material is directly relevant to them at the time they need it, we wanted our students and alumni to have access to self-service resources and general job seeking tools and information. So we partnered with a vendor to develop a career platform uniquely suited for our needs. Accessible 24/7 and exclusively to UMUC students, alumni, employers, and staff, the platform has the traditional jobs board searchable in a wide variety of criteria, but it also has carefully curated written and video content from both vendors and career services staff to address the unique needs of our students and alumni. The website also addresses topics that most traditional universities do not, such as job seeking over the age of 50; transitioning from military into civilian life; or how a career changer can gain relevant experience to add on a resume while balancing a family, job, and online classes. Beyond the content, we have also curated career development tools that can facilitate instant access to learning without career advisor intervention. These interactive online tools help with career assessment, discernment, planning, and acquisition.

In addition to announcements in The Undergraduate School's online classrooms and weekly posts on university social media, a robust career e-newsletter is sent monthly to all students, driving them to utilize the career platform. Career resources are also included in each monthly alumni e-newsletter and through alumni social media posts, connecting them to the system.

Three resume tools are available to students and alumni, all of which offer opportunities for reflection and improvement. The platform itself includes a simple resume builder for those who have never created a resume before. Given that we have

many students transitioning out of the military or working their way up from blue-collar jobs, resume development is a high need area. The resume builder asks questions about one's education, skills, and experience. Through this automated inquiry, participants learn what aspects are critical to a resume as they create their own document.
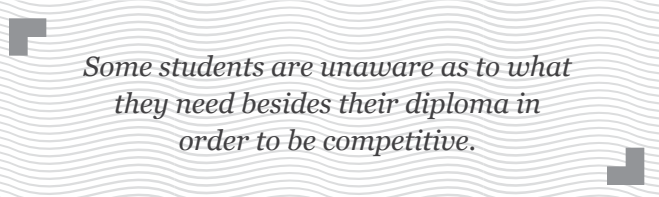
A second tool uses preset benchmarks developed by our career services staff to critique resumes in a matter of seconds as opposed to the 30 minutes to an hour it would take a career advisor, and it does so in much more depth. In addition to layout and the use of the active voice, this tool also checks for quantification of one's roles, the presence of overused words, and the integration of key soft skills—such as leadership and initiative. Students receive a score and a detailed analysis with the opportunity to edit and improve.

Our third tool uses resume scanning software to identify any gaps between the resume and an aspirational job. The tool not only scores how closely aligned the resume is to the job but also offers suggestions on how to specifically tailor the resume to that position. The process helps learners identify gaps in their profile so that they can prepare themselves accordingly with the right classes and training. It also teaches how to write a resume to a specific position and best demonstrate the strength of the jobseeker's candidacy.
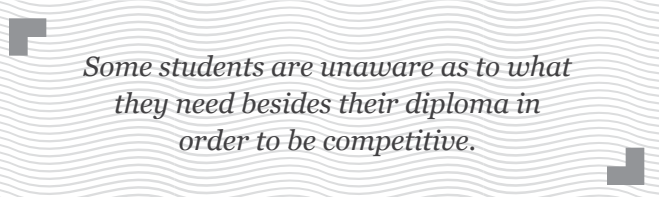
Along with the resume tools, we also offer two different video interview tools. The first tool has over 7,000 interview questions that can be selected individually or in groups according to the type of job and level of experience. The participant can then self-critique the video interview using a rubric provided by the tool. The participant can also e-mail a link to the interview for others to critique as well. This video tool is proving to be a very effective way for students and alumni to see how they are coming across in interviews, particularly with regards to focus and filler words. There is a "like/um" counter where they can count the number of times they are using filler words.

The other video tool uses artificial intelligence to decide what questions will be asked in an interview based on a PDF of the student's resume. It then analyzes the content of the answers, facial expressions, body language, and tone of voice and gives an extremely thorough evaluation beyond what any of our career advisors would be able to give. Students can note from second to second how they were responding and watch themselves to recognize whether they displayed fear or anxiety or disinterest, etc. They also have the opportunity to do a second interview and improve their scores.

Some students are unaware as to what they need besides their diploma in order to be competitive.

While the content and tools have proven to be very effective for those who seek out this material, there are others who believe that all they need is a college education and the job offers will come pouring in. While true at one point in our history, it is certainly no longer the case. They do not know what they do not know and, for this reason, the provost and deans of both The Undergraduate School and The Graduate School of UMUC committed to embedding career-relevant competencies in their curricula. Because obtaining a degree tends to be a lengthy process for many of our students and because they are of a generation when a college education was enough to get one an entry-level job, some students are unaware as to what they need besides their diploma in order to be competitive. By integrating career competencies into the curriculum, we give our students an advantage so that they really are job ready upon graduation.

This approach of embedding career activities and relating competencies to career development is different from having a stand-alone career planning class, which UMUC does also offer. By integrating competencies directly into coursework, students have the opportunity to develop and revise their value proposition in the form of resumes, elevator pitches, and interview skills with regards to what they have learned, what they know, and what they have to offer an employer. They also develop networking skills early on, skills which are critical in advancing one's career aspirations.

Prepare

For those students and alumni who need more interaction, we offer job seeking skills support through webinars, live chats, and interview preparation for specific employer recruiting events. These activities allow for some limited interaction between students, alumni, and subject matter experts as students and alumni specifically target particular employers at in person and virtual events. Learning is much more meaningful because the end goal is in sight with a very specific application.

Through these interactive sessions and through a series of systematized preparatory e-mail instructions that we send prior to employer recruiting events, we are able to "chunk" content into a series of steps, giving students clear guidance through the process. In the first step, students focus on improving their resumes in relation to a particular employer. Second, they research and understand the employer and the specific positions. The third step is to understand their own talents and skills as they apply to specific positions and to articulate how these competencies fit the position. This articulation comes either in the form of face-to-face or virtual chat interactions at specific recruiting events (see CONNECT below) or through cover letters to their applications if they were unable to attend.

Connect

By scaling our services using technology, along with the targeted program of just-in-time intervention centered on recruiting events, we are able to use our human skills for those who need high touch the most. Face-to-face connections are available through our alumni mentoring program, which enables students and alumni to connect with an alumni mentor either for a six-month benchmarked mentorship or for a one-time informational interview. This program has had over 1,000 matches in just two years.

Connections also take place between career services clients and career advising specialists. The career platform synchronizes with the career advising specialists' calendars. Students and alumni can make appointments directly through the platform for either face-to-face, video chat, or phone appointments at a time of their convenience without going through a receptionist. This year, we had over 1,700 appointments with those who most needed advising services.

The third aspect of connection which UMUC promotes is directly connecting with recruiters who have active, open positions and are actively seeking resumes. Over 140 employers representing over 35,000 positions met more than 2,600 unique applicants in person and virtually through our exclusive career activities in FY17. Many of these connections were made through traditional and virtual recruiting events, with recruiters meeting individually with job seeking students and alumni. Connections were also made through the career platform with students and alumni applying directly for jobs and with employers browsing and searching on various criteria for potential candidates and contacting them via email or video chat. And connections were also made by career services staff filtering resumes on employer-specified criteria and providing them to recruiters.

Conclusion

Because of the multiple modifications made to our career services programing, UMUC has gone from 4,331 unique logins in fiscal year 2015 to 16,184 unique logins in fiscal year 2017, more than tripling the numbers of those assisted from the previous model. Our success and positive student impact has been noted across the university, and our profile and reputation have greatly improved. Additionally, integrating competencies into the curriculum will reach even more students, and we expect to continue to scale at an even greater rate. Students and alumni are having a better experience understanding their own growth and applying their learning towards their aspirations, making happier and more fulfilled students and alumni who have a better learning experience and a better outlook on their university.

REFERENCES

Association of American Colleges and Universities & Hart Research Associates. (2013). It takes more than a major: Employer priorities for college learning and student success. Retrieved from *https://www.aacu.org/leap/presidentstrust/compact/2013SurveySummary*

WORKING SMARTER, NOT HARDER BY COLLABORATING WITH THE COMPETITION

By Beth Romanski, Director of Professional and Continuing Education, Maryland University of Integrative Health

Introduction

To foster economic prosperity in our country, employers need employees with relevant skills in an industry landscape that is changing at an increasingly fast pace. However, despite a return of unemployment rates to pre-recession levels, a skills mismatch persists between employers' critical, in-demand skills and the availability of those skills in workers (Lumina Foundation, 2016).

The so-called "skills gap" has become a common term amongst business leaders, with much of the blame seemingly directed towards the shortcomings of the education system. To put the pervasiveness of this issue in context, the Manpower Group, a human resources consulting firm, goes so far as to say the gap is a chasm. This declaration is based upon a recent study by Manpower Group which found that of the more than 42,000 employers the firm surveyed last year, 40% said they were having difficulties filling appointments—the highest level since 2007 (Hanc, 2017).

While some colleges and universities are adapting and responding to this need better than others, there are usually critical aspects missing in the skills gap conversation. First, developing skills should not be a siloed effort between industry and education. Second, neither industry nor education can hold all the responsibility or blame for the perceived skills gap. Third, there is something to be said about the importance of cultivating a spirit of lifelong learning so that workers can continually develop and enhance their skill set well beyond a one-time training or academic experience and this needs to be recognized by both parties to provide such opportunities.

Linking Learning and Work

Despite the frequent separation between industry and education and typical differences in perspectives on what should be taught and how, there seems to be consensus that high-quality learning is a pathway to increasing both employers'

ability to compete and employees' access to career opportunities and higher wages. Linking learning and work not only includes the education that is achieved while in a formal academic setting right out of high school but also the learning gained throughout one's life and career.
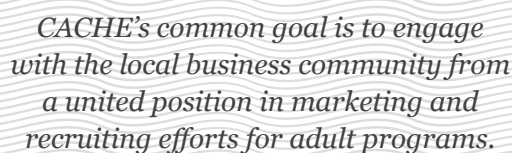
> *It is important to cultivate a spirit of lifelong learning so that workers can continually develop and enhance their skill set well beyond a one-time training or academic experience.*

To help fill talent and skills gaps, U.S. employers spend approximately $177B annually on formal training and talent development. On average, 10% of an employer's learning and development budget goes towards tuition assistance that provides access to postsecondary degrees and credentials so employees can improve their knowledge and skills (Lumina Foundation, 2016). According to EdAssist's "Annual Review of Employer Tuition Assistance Programs," more than 60% of employers offer some form of tuition assistance as a benefit, and there are roughly one million students (approximately 20% of which are adult learners over the age of 40) currently receiving some level of employer support to further their education (Mulhere, 2016). With these numbers, it's clear that many employers are recognizing how institutions of higher learning can help facilitate employee development by offering employer support for professional development. This monetary incentive not only serves to lessen the skills gap by increasing access and motivation, but it has also shown to improve retention rates at organizations in an era where job longevity is increasingly rare (Lumina Foundation, 2016).

Employer tuition assistance programs are often highly valuable to many adult learners who want (or need) additional education to gain new skills or

advance their careers but who may not have the financial means to do so. Not only are employer tuition assistance programs valuable for employees, they have also proven to provide positive results for employers if promoted properly and linked to internal career opportunities and performance objectives. In the ROI study of Cigna's Employer Reimbursement Program (ERP), which focused on the three key areas of promotions, transfers, and turnover, it was determined that the ERP was a valuable business investment resulting in quantifiable cost avoidance for the company.

As organizations realize positive gains from investing in employee education programs, colleges and universities that cater to adult learners are also realizing that partnerships formed with companies can support their enrollment numbers and revenue objectives in a time of increasing competition. There has been a surge of pressure to move in the direction of corporate outreach from for-profit schools that have been on the forefront of industry-education partnerships as well as non-profit institutions with strong online divisions. One example of such an alliance is the agreement between Starbucks and Arizona State University (ASU), which offers full tuition to Starbucks employees that attend ASU online (Rooney, 2015).

CACHE's common goal is to engage with the local business community from a united position in marketing and recruiting efforts for adult programs.

In summary, for proper learning-work linkages to truly occur, institutions of higher education must make a concerted effort to reach out and form relationships with employers and engage them in educating their workforce. Likewise, organizations offering employer tuition assistance programs must make the benefit known to employees and link education and training to the overall talent development strategy. This needs to stem from the organizational leadership. Without these components in place, the ERP benefit may be for naught.

If we have the shared goal of educating our workforce and the results seem positive for forming strategic industry-education alliances, the question remains: How do we do a better job of bridging the gap between higher education and industry so that these opportunities are made readily available to adult learners?

The following case study of a group of colleges and universities in Central Pennsylvania offers an example for a solution to this issue.

Consortium Formation

A consortium is an association of two or more individuals, companies, organizations, or governments (or any combination of these entities) with the objective of participating in a common activity or pooling their resources for achieving a common goal. Historically, collegiate consortia have pooled the resources of their member colleges and universities to share human and material assets as well as to link academic and administrative resources.

While there may be examples of efforts to connect employers and institutions through traditional consortiums and associations at the national or state level, there was a lack of collaborative initiatives amongst the individual institutions within the Harrisburg region of Pennsylvania to specifically engage with employers in order to better serve the nontraditional students employed at their organizations. As an attempt to bridge this gap, in 2012 a group of motivated admission representatives from 14 colleges and universities in Central Pennsylvania decided to join forces and form The Capital Area Consortium for Higher Education (CACHE). CACHE was a direct response to connect the need (business and skilled workers) to the solution (education and skills) within the local region.

The purpose of this regional consortium is distinct from the typical collegiate consortium arrangement where the intention was to share operational and financial resources. CACHE's common goal is to engage with the local business community from a united position in marketing and recruiting efforts for adult programs—working smarter, not harder—that support each of the individual institution's enrollment objectives. The organization has established formal by-laws and requires nominal annual membership dues,

which go towards collective events, sponsorships, and marketing materials; however, the activities of CACHE are essentially volunteer driven by the representatives involved, making the activities—and success—highly dependent on the individual efforts of those in the group.

The Capital Area Consortium for Higher Education (CACHE)

CACHE's mission is to act as a one-stop resource for area employers, adult learners, and member institutions to meet the region's continuing need for a more educated and effective workforce. Collectively, CACHE pulls together a diverse and wide variety of degree and certificate programs, professional development options and customized training for any industry, which is a unique value proposition for both prospective students and organizations seeking skill development opportunities.

CACHE's value proposition for employers and prospective students includes:

- Access to over 100 different program offerings for all levels of adult learners (undergraduate, graduate, continuing education);
- Direct connection to experts and resources in higher education in the greater Harrisburg region;
- One-stop resource for adult educational opportunities in our region; an efficient and effective way for employees to gather college information to advance in their chosen field;
- One point of contact for employers to minimize solicitation from multiple

school representatives (which is often a deterrent to establishing industry-education partnerships); and
- Enhanced perception of professionalism among prospective students and employers. CACHE's value proposition for the individual consortium members includes:

  o Expanded employer contacts with potential for better success/results with a united approach;
  o Increased opportunities for exposure with pooling of resources (both human and financial);
  o Shared initiative leading to higher productivity and efficiency; and
  o Networking and knowledge sharing in a highly competitive space.

CACHE Then and Now

CACHE was formed by member institutions of higher education for marketing and recruiting purposes to serve as a single point of contact for all businesses, organizations, state agencies, and others in the Capital Region. Members benefit on several levels. First, there is an extended market outreach since all members promote CACHE within their varied individual markets. Second, recruiting efforts are strengthened because marketing materials are available at all recruiting events even when member representatives are unable to attend. Third, best practices are shared and built upon in an ever evolving landscape.

Sharing ideas, challenges, and best practices ultimately leads to an open, transparent way of existing in an otherwise highly competitive space.

This last advantage, of sharing ideas, challenges, and best practices, of having the support and varied perspectives of colleagues, ultimately leads to an open, transparent way of existing in an otherwise highly competitive space. It offers a new and highly advantageous approach to meeting the demand for an educated, well-trained workforce.

8 Essential Steps for Forming a Consortium:

1. Identify potential schools and representatives
2. Establish primary point of contact
3. Define the value proposition to all stakeholders
4. Outline goals and objectives
5. Identify opportunities, resources, and technologies for collaboration
6. Set expectations
7. Determine yearly dues
8. Assign responsibilities of members

In order to reach its goals most effectively, CACHE has developed official by-laws; an operating budget; shared online resources to maintain employer contacts; marketing materials, including an employer outreach letter and logo; and a website (*www.cachepa.org*), which is easily linked to employer intranet portals as necessary. Additionally, the organization has grown its coordinated presence at education fairs to total of 47 events between the origination in 2012 through June 2017, when this article was written. The organization continues to increase its reach by conducting complimentary virtual information sessions through the recent addition of a Facebook page and through the development of a virtual education fair, which will serve as a more flexible and accessible option for organizations with employees at multiple locations or who have varied schedules. Additionally, an employer survey is in discussion to assess the value of CACHE's offerings in a more meaningful and results-oriented way.

Overall, the specific initiatives of the group primarily evolve based upon the interests, skills, and opportunities presented by the individual members, which has helped maintain momentum as new representatives come on board. The induction of new representatives can provide a challenge to continual improvement, but long-standing members are able to provide context so the group isn't constantly recreating what was done in the past and losing traction.

Unified Approach

Together, the 14 colleges and universities that are currently represented by the organization bring a unique offering to the employers in the region, with over 100 distinctive program options. Despite the vast differences in the institutions, CACHE has successfully managed to operate as a unified entity, which is often rare in the competitive higher education environment.

Employers are thrilled with the fact that, together, the organization brings a diverse range of educational opportunities to their employees within a cohesive team approach. Rather than competing for students, the CACHE representatives listen to the employees' needs and do their best to connect them with the right college or university to fulfill their goals. Prospective students often find this style of support to be refreshing, challenging their assumptions that school representatives would only be interested in recruiting and advising their own students. While it's certainly true that institutional representatives will advocate for their own institutions whenever possible, CACHE representatives understand that adult learners will determine what school is the best fit for themselves without a college necessarily making that decision for them.

One of the reasons CACHE formed was the tenuous experience representatives had when conducting business outreach. Most employers were not opposed to offering a tuition assistance program or partnering with academia in some fashion. At the same time, they were either overwhelmed by multiple colleges and universities reaching out to form partnerships, unable to show preference for one institution over another, or too understaffed to make promoting the company's tuition assistance program a priority. CACHE seeks to resolve those obstacles by providing a unified approach to employer engagement.

Additionally, CACHE can act as a resource in a broader scope should the organization want to measure a greater return on investment in their educational benefit programs. Through their services, CACHE is an entity that can assist employers in making a tuition assistance benefit more widely known and valued to their employees, which addresses the shortcoming highlighted by the Cigna study.

Tips for Forming a Similar Consortium

As previously stated, the success of CACHE has depended largely on the individuals involved and their level of commitment and investment in the group. Therefore, while each situation will be distinct, there are several tips for forming a similar consortium based on lessons learned that could benefit comparable efforts in regions across the country.

Those essential steps include:

1. Identify potential schools and representatives based on their role and interest in contributing and collaborating.

2. Establish primary point of contact to bring group together.

3. Establish purpose of the consortium; define the value proposition to all stakeholders.

4. Outline goals and objectives. This can encompass official by-laws or solely a mission statement and clearly defined goals.

5. Identify opportunities, resources, and technologies for collaboration (GoogleDocs, education/benefit fair model, website, etc.).

6. Set expectations (participation, routine meetings, etc.).

7. Determine yearly dues to fund group events and marketing materials.

8. Assign responsibilities of members to foster the spirit of equality in contributions.

There have been several membership changes since CACHE's inception in 2012, which is one of the challenges towards continual progress. With new involvement, however, comes fresh ideas and interest in taking the lead with initiatives and projects.

Conclusion

While a similar organized consortium effort may not work in every region of the country, any form of grassroots collaborative approach among institutions and organizations fostering a positive solution to reach employers and organizations should be worthy of exploration. The case study of an organization like CACHE is one that demonstrates how employers and education can form a meaningful link in the context of supporting adult learners' professional development. Ultimately, this kind of synergy contributes to a healthy workforce, diminishes the skills gap, and leads to success in attaining larger economic goals.

REFERENCES

Capital Area Consortium for Higher Education. (n.d.). Retrieved from *www.cachepa.org*

Hanc, J. (2017). With innovation, colleges fill the skills gap. New York Times. Retrieved from *https://www.nytimes.com/2017/06/07/education/with-innovation-colleges-fill-the-skills-gap.html*

Lumina Foundation. (2016). Talent investments pay off: Cigna realizes return on investment from tuition benefits. White paper. Retrieved from *https://www.luminafoundation.org/news-and-views/2016-04-22-cigna-education-reimbursement-program*

Mulhere, K. (2016). Paying their workers' college tuition can pay off for companies. *Time Magazine*. Retrieved from *http://time.com/money/4305549/paying-their-workers-college-tuition-can-pay-off-for-companies/*

Pennsylvania Department of Education. (n.d.). Postsecondary and adult education. Retrieved from *http://www.education.pa.gov/POSTSECONDARY-ADULT/Pages/default.aspx#tab-1*

Rooney, B. (2015). Starbucks to give workers a full ride for college. Retrieved from *http://money.cnn.com/2015/04/06/pf/college/starbucks-college-tuition-arizona-state/*

FOSTERING COLLABORATION BETWEEN EMPLOYERS AND EDUCATORS

COLLEGE OF THE CANYONS, GOODWILL SOUTHERN CALIFORNIA, AND AMS FULFILLMENT: A COLLABORATIVE APPROACH TO APPRENTICESHIP

By Jeffrey P. Forrest, Vice President, Economic and Workforce Development, College of the Canyons

Ana Rodriguez is the definition of a go-getter. She came to AMS Fulfillment as a temporary employee and as a mother of a two-year old; but since her arrival, she has become a permanent fixture at the company's warehouse operations. After eight months with the company, she has been promoted five times and is now a supervisor of the company's shipping operations in a warehouse that spans more than 100,000 square feet. When she heard about the apprenticeship program at AMS Fulfillment, she was eager to sign up. "I want to gain the tools for success as a leader with AMS Fulfillment. I believe this apprenticeship program will position me for further promotion within the company."

In an effort to deliver on the promise of a college education—and provide job skills for adult learners like Ana—College of the Canyons, Goodwill Southern California, and AMS Fulfillment have created an apprenticeship program. The program provides customized instruction and on-the-job training to 18 adults from underserved populations in Santa Clarita, California. This partnership between higher education, a workforce intermediary, and a local employer is unique in the following ways:

1. The apprenticeship is nontraditional in that it does not require membership in a union to participate;

2. The apprenticeship is accelerated with a duration of 1-2 years, depending upon the intensity of the training;

3. It specifically seeks to assist veterans, dislocated workers, and underserved communities;

4. If a candidate is not proficient in English, College of the Canyons will offer English as a Second Language (ESL) training at no cost to the individual;

5. The apprentices are full-time employees with AMS Fulfillment, receiving fringe benefits, health care, and a living wage;

6. AMS Fulfillment guarantees a wage increase to the apprentice upon completion of the training;

7. AMS Fulfillment offers a career pathway to the apprentices, allowing them to seek promotion within the company. Conversely, AMS works with the program to help the apprentices obtain a better paying opportunity with another employer.

In addition, College of the Canyons offers courses onsite at AMS Fulfillment. This option removes any barriers the students may have regarding transportation to the campus. Instructors are experienced in teaching adult learners and deliver content in a non-threatening, engaging environment. The ultimate goal is to demonstrate that adults from underserved communities make good workers as well as great learners.

Dr. Dianne G. Van Hook, Chancellor of College of the Canyons, is a strong advocate for adult education and apprenticeship: "College of the Canyons has a long and rich history of supporting initiatives that promote equity, adult education, and engagement with companies in the Santa Clarita region. This apprenticeship is a great example of our college's commitment to continue to equip our veterans, dislocated workers, and underserved communities with the skills they need to compete in today's job market."

Apprenticeships 101

For one hundred years, apprenticeship has proven to be one of the most effective means for companies to train and develop their current and future

workforce. It consists of on-the-job training (OJT), in which the apprentice gains the skills necessary to become proficient in a particular occupation. Generally, apprentices are placed with a mentor who "shows them the ropes" for performing a specific job task and navigating their way around the company.

In addition, there is related technical instruction (RTI) which is delivered by a local education agency, such as a community college or technical training center. The RTI is content that corresponds to the on-the-job training. Historically, apprenticeships have been focused on the trades (plumbing, electrical, construction, etc.) and administered by union-based organizations, but a new movement is underway to expand apprenticeship across all industry sectors.

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Growth in Manufacturing

Recent trends in the U.S. economy have led to an expansion of apprenticeship to nontraditional occupations. For example, the growth in the manufacturing sector has been a major factor in the turnaround of the U.S. economy. According to the National Association of Manufacturers (NAM), there are more than 12.3 million employees in the manufacturing sector. While the growth in manufacturing has been good for the economy, research has revealed a significant skills gap in the existing labor force. Workers do not have the training needed to take advantage of the increase in jobs that require higher skills. In a study conducted by Deloitte and the Manufacturing Institute, it was cited that "over the next decade, nearly 3½ million manufacturing jobs will likely be needed, and 2 million are expected to go unfilled due to the skills gap" Deloitte and the Manufacturing Institute, 2015, 2).

The Registered Apprenticeship

In an effort to close this gap, the United States Department of Labor (DOL) created the American Apprenticeship Initiative. Launched in 2015, the American Apprenticeship Initiative seeks to expand the apprenticeship model to nonunion, nontraditional occupations. To participate, companies or other organizations register with the DOL. As part of the apprenticeship, the employer will provide an on-the-job work experience based on the competencies of the occupation. The apprentices will receive a mentor and are considered an employee of the company. After six months into the apprenticeship, if candidates make satisfactory progress towards acquiring workplace skills, *they will be eligible for a pay increase*. The amount of the increase is determined solely by the employer and is not mandated by a governance organization, such as a union or legislative body. Once apprentices complete the OJT and the RTI, they will receive a credential from the DOL certifying that they have met the qualifications for the specific occupation.

Key Partners

The AMS Fulfillment apprenticeship is administered through the collaborative efforts of College of the Canyons, Goodwill Southern California, and AMS Fulfillment. Each of the partners plays a unique and essential role in the development and implementation of the program.

College of the Canyons

College of the Canyons serves as the Local Education Agency, or LEA. In this role, the College provides the related technical instruction (RTI) to the apprentices. Here are some of the features of the RTI for this particular program:

1. **The instruction is held at the company's location.** This option allows the apprentices to attend classes without having to leave the workplace. Not only is this a convenient alternative for the students, it allows the college to be more engaged with the company. AMS Fulfillment dedicated a portion of its facility to the construction of a world-class learning center, equipped with computers, whiteboards, and projectors. The learning center can seat up to 60 students. College of the Canyons has been providing a variety of non-credit courses at the learning center since it opened in 2015. These courses are tailored for adult learners and cover subjects such as English as a Second Language (ESL), Citizenship, Reading, and other foundational learning skills.

2. **Flexible schedule.** The courses are offered in the evenings from 6:00pm—8:30pm, Monday through Thursday. The length of the courses is usually 12 weeks.

3. **No tuition cost to the apprentice or company.** The apprenticeship is funded through the California Apprenticeship Initiative New and Innovative Grant Program. The grant covers teacher's salaries as well as other costs associated with taking classes (such as uniforms, tools, etc.).

4. **Mobile enrollment.** Practically all of the apprentices at AMS Fulfillment are adults who have not been to school in many years. As a result, they may be intimidated by the prospect of going to a college to register for classes. To address this challenge, an enrollment team from College of the Canyons goes to AMS Fulfillment to assist the apprentices in becoming students of the College. The process includes advising, assessment, and enrollment. This feature has been a critical component to the education process.

Goodwill Southern California

A workforce intermediary works with the DOL to secure the standards that govern the implementation of a registered apprenticeship based on a specific occupation. In addition, the intermediary works with government entities, educational institutions, and interested companies to create opportunities for collaboration on workforce development initiatives such as apprenticeship. Goodwill Southern California is the workforce intermediary for the AMS Fulfillment apprenticeship. Goodwill Southern California is also the leading advocate for implementing the DOL Registered Apprenticeship Program in Southern California. Tracy DiFilippis, Apprenticeship Coordinator and Sector Strategies Manager for Goodwill Southern California, oversees this effort. In partnership with College of the Canyons, she serves as co-chair of the Strong Workforce Apprenticeship Group (SWAG) which has 16 occupations approved by the DOL under its management. These occupations are focused around high priority industry sectors, such as advanced manufacturing and logistics, and are based on the DOL's Occupational Network (O*Net)

Codes. For AMS Fulfillment, the occupation code is 43-5061.00, known as Material Coordinator. The on-the-job training for this occupation is two years in duration and requires 288 hours of related instruction. DiFilippis reviews the work processes of the occupation to make sure that they align with the apprenticeship at AMS Fulfillment.

Once AMS Fulfillment agrees to the work processes, it signs an Employee Participation Agreement (EPA) in which it agrees to provide the OJT along with a standard wage schedule based on the position. *The apprentices are employees of AMS Fulfillment and receive all of the benefits that are associated with the job.*

Through her efforts, DiFilippis has become an subject matter expert on apprenticeship and provides an invaluable service as a facilitator to colleges, workforce development boards, and corporations. According to DiFilippis, "apprenticeship is the single most effective model for today's companies to develop a pipeline of talent for their workforce. Companies that invest in apprenticeship will have a competitive advantage in securing a skilled and qualified workforce for years to come."

AMS Fulfillment

It is no secret that the United States economy is going through a time of tremendous growth. In fact, this current expansion is in its seventh year, making it one of the longest growth cycles in U.S. history. However, millions of Americans have not participated in this booming economy. Veterans, minorities, women, dislocated workers, and the disabled make up the lion's share of those who are left out.

AMS Fulfillment focuses on these groups by doing targeted recruiting and working with community organizations to identify candidates to apply for the apprenticeship. As a result of their efforts, more than 90% of the apprentices are veterans, minorities, women, and dislocated workers.

Ken Wiseman, President and CEO of AMS Fulfillment has been working to foster a diverse and inclusive workforce since becoming CEO of the company in 2004. "AMS Fulfillment has always strived to provide opportunities for our veterans, minorities, and underserved communities. We are proud to partner with College of the Canyons and Goodwill Southern California to offer this unique and innovative program."

> *The vast majority of individuals who have been left out of the economy have one thing in common: no high school diploma, occupational certificate. AMS Fulfillment has changed all of that.*

Many years ago, one could get a great paying manufacturing job with just a high school diploma. That is no longer the case. Today's manufacturing positions require "some college" or a specialized certificate. The vast majority of individuals who have been left out of the economy have one thing in common: no high school diploma, occupational certificate, or skill. What compounds the problem is the inability of these individuals to navigate the educational system. The apprenticeship at AMS Fulfillment has changed all of that. The 20 apprentices going through the program, regardless of their educational background, are given access to a quality education that will prepare them with the skills to be great employees—and continue their studies if they choose to do so. If the United States is to close the ever-growing skills gap, it must start with education—the kind of education that leads to meaningful employment and serves as a springboard for lifelong learning.

A Guided Pathway to the Middle Class

The apprenticeship program at AMS Fulfillment is more than a job with "some college." It is a guided pathway to the middle class. The guided pathways model is a part of the strategic thinking of Eloy Oakley, Chancellor of the California Community Colleges Chancellor's Office (CCCCO),

who is spearheading this initiative for the state's 113 Community Colleges. The SWAG model of apprenticeship at AMS Fulfillment embodies the principles of guided pathways and supports the CCCCO guided pathway agenda.

The guided pathways model is built on the following principles:

1. **Create clear curricular pathways to employment and further education.** The SWAG model through its partnership with College of the Canyons offers content that is aligned to the competencies of the on-the-job training experience.

2. **Help students choose and enter their pathway.** The SWAG model provides apprentices an outline of the competencies and the entry and exit points of the program.

3. **Help students stay on the path.** The SWAG model includes employee mentoring and coaching provided by the company. The apprentice receives the support and confidence to complete their experience.

4. **Ensure that learning is happening with intentional outcomes.** With the SWAG model, the learning is focused on skills attainment related to the occupation, with the opportunity for promotion.

Ana scans a product as one of her duties at AMS Fulfillment

As a member of the AMS Fulfillment Apprenticeship Program, Ana Rodriquez sees a future that is bright and full of hope. "Five years from now, I would like to be director of operations, or a vice president, with oversight of two or three warehouses. My dream is to make sure that my little girl has a better life and to become an example to those looking to improve their lives."

The partnership between College of the Canyons, AMS Fulfillment, and Goodwill Southern California is making the dream of a better life a reality for people like Ana. We look forward to utilizing the power of partnership to expand access to education and employment throughout the State of California to address the needs of today's adult learners.

REFERENCES

Deloitte and the Manufacturing Institute. (2015). *The skills gap in manufacturing, 2015 and beyond.*

NACTEL: AN ONLINE INDUSTRY-LED CURRICULUM SINCE 1999

By Nancy Lynch Hale, DPS, Executive Director, Pace University Online, and Associate Professor, Seidenberg School of Computer Science and Information Systems, Pace University; and Susan Kannel, Executive Director, NACTEL, and Associate Vice President, Council for Adult and Experiential Learning

A Trip Down Memory Lane

Do you remember your world of telecommunications in 1999? Here are a few reminders:

- It was a landline world.
- Every business, and many homes, wanted a fax machine.
- Telecom companies could not install second and third lines fast enough to accommodate these requests.
- It was the time of dial-up connections—remember the sound of the analog-to-digital "handshake" to access the Internet? Remember traveling with a phone cord?

On a macro level in the U.S. economy, the late 1980s and 1990s were a time when a revolution took place in economic deregulation. One of the industries most affected by deregulation was telecommunications (Joskow, Bohi, & Gollop, 1989). Industry deregulation, coupled with rapid

technological change, triggered a major growth spurt in telecom. For example, in 1999 the industry employed 1,213,200 workers, reaching a peak of 1,363,000 workers in 2001. However, as of June 2017 the industry employs 765,000 workers (Bureau of Labor Statistics, 2017). This rapidly changing and unsteady landscape is the backdrop for our story of a 19-year, high performing industry-higher education partnership. Let's take a closer look at what has made it so successful.

The Needs of the Telecommunications Industry

In 1999, the telecommunications industry faced a dramatic shortage of qualified technicians needed to install second phone lines that would allow homes and businesses to access the Internet or operate a fax machine without interrupting their phone service. The technicians that were available worked 24/7 to install and maintain phone lines, while at the same time responding to emergencies around the country. These job demands made regular attendance in a traditional educational environment nearly impossible. At the same time, the industry's most pressing workforce challenge was creating a pipeline of prepared technicians.

In order to meet the need for a qualified telecom workforce, the Alfred P. Sloan Foundation provided funding to launch the National Coalition for Telecommunications Education & Learning (NACTEL). The founding partners of NACTEL included representatives from Southwestern Bell, Qwest, Bell Atlantic, GTE, the Communications Workers of America (CWA), and the International Brotherhood of Electrical Workers (IBEW). These industry leaders worked alongside CAEL and Pace University's Seidenberg School of Computer Science and Information Systems to develop NACTEL.

NACTEL

www.nactel.org

Since 1999

- The National Coalition for Telecommunications Education & Learning is a partnership between telecom companies and two major labor organizations which sponsors online education *to provide a qualified workforce for the telecom industry.*
- NACTEL is a 501c3 non-profit corporation led by a Board of Directors made up of representatives from the partner companies and unions.
- Pace University is NACTEL's original and exclusive academic partner.
- CAEL serves as NACTEL's program administrator.

AT&T

CenturyLink

CWA

Frontier COMMUNICATIONS

INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS

verizon

PACE UNIVERSITY

CAEL

This model of an industry-education partnership broke new ground on several fronts. Even though the industry and labor partners were competitors and at times, adversaries, they recognized the value of creating and supporting a standardized, industry-wide curriculum that would be branded by NACTEL. They envisioned a curriculum that met industry benchmarks for technical job titles, thereby becoming a recommended and trusted source of reliable industry education. The curriculum they developed was offered asynchronously, totally online, which meant it was available to a workforce across time zones from anywhere in the world. In 1999, when online education was relatively new in all academic disciplines, it was radical to consider offering *technical* education via the Internet.

And so it was that, in the fall of 1999, Pace University first began offering NACTEL classes online, starting with an Associate of Science degree in Telecommunications.

Evolution of an Industry—Evolution of a Curriculum

When we use the words *industry-led curriculum* or *high performing industry advisory board* to describe NACTEL, it's important to recognize that a program such as this represents a significant investment of resources from multiple organizations—including the NACTEL partners, Pace University, and CAEL—over a 19-year period. Starting with the 1999 grant from the Alfred P. Sloan Foundation to support what was, at that time, the new era of online education, the first curriculum offering was a single associate degree in telecommunications with content to support the industry's "legacy" landline and copper technology phone systems. As we are all aware, the industry and its place in our lives has transformed and exploded since then. Today our phones are mobile devices that are our pocket-sized computers which are always with us. These changes in the industry directly shaped changes in NACTEL's curriculum offerings from 1999 to today.
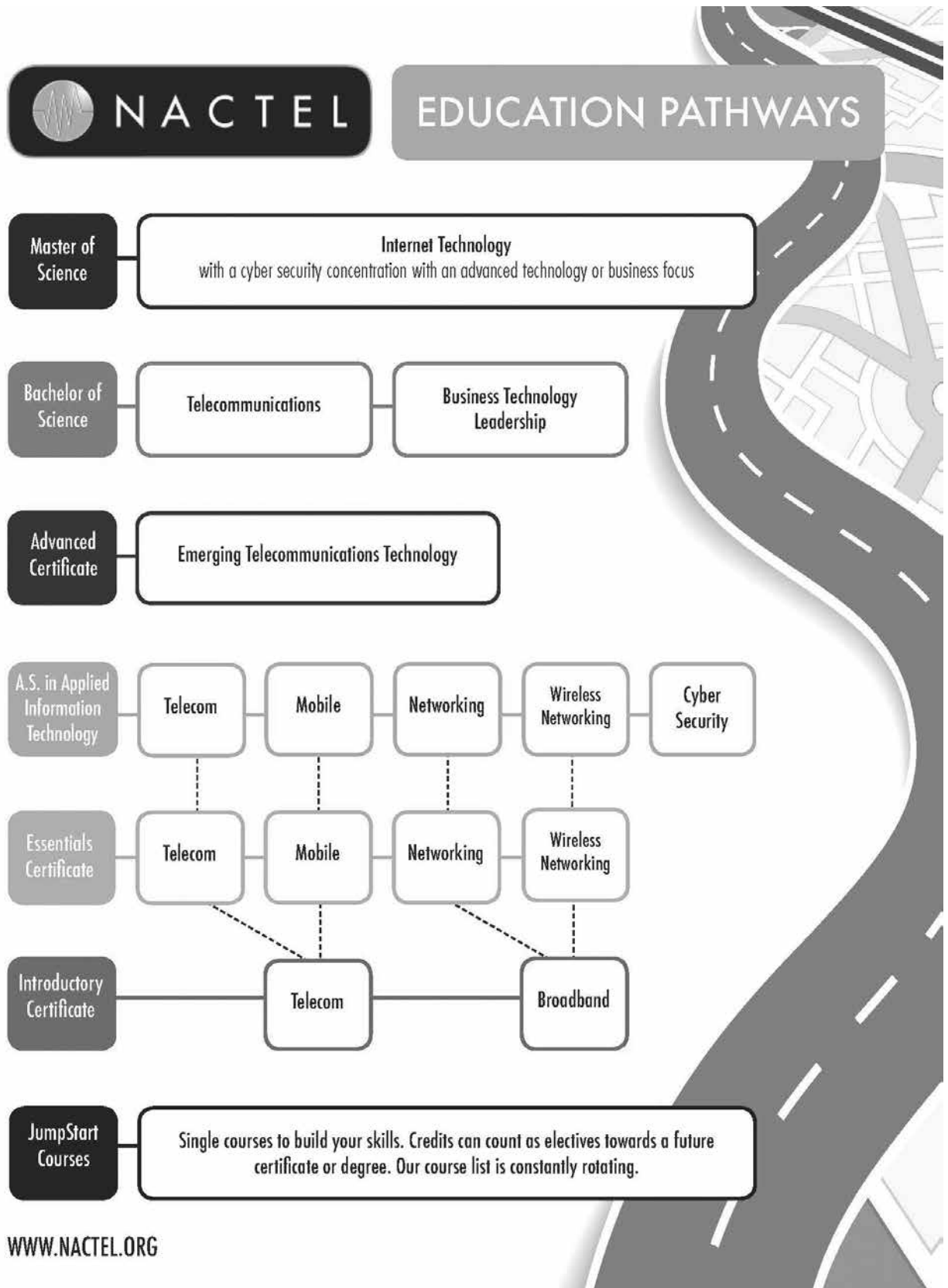
Timeline of Curriculum Offerings

- 1999—Associate degree in telecommunications
- 2000—Two embedded certificates at the associate level, "Introduction" and "Essentials" (These two certificates have been replicated in each of the additional concentration areas at the associate level.)
- 2003—Accelerated BS in telecom
- 2003—Associate degree concentration in networking (fiber, broadband)
- 2004—Associate degree concentration in wireless networking
- 2007—Bachelor's certificate in emerging telecommunications technologies
- 2008—Associate degree concentration in video technologies (This concentration supported building the infrastructure that was required for the 2008 political conventions held in Minneapolis and Denver. The video technologies concentration was phased out in 2016.)
- 2010—Associate degree concentration in mobile technologies

Figure 1 NACTEL Educational Pathways 2017

NACTEL EDUCATION PATHWAYS

Master of Science
Internet Technology
with a cyber security concentration with an advanced technology or business focus

Bachelor of Science
Telecommunications | Business Technology Leadership

Advanced Certificate
Emerging Telecommunications Technology

A.S. in Applied Information Technology
Telecom | Mobile | Networking | Wireless Networking | Cyber Security

Essentials Certificate
Telecom | Mobile | Networking | Wireless Networking

Introductory Certificate
Telecom | Broadband

JumpStart Courses
Single courses to build your skills. Credits can count as electives towards a future certificate or degree. Our course list is constantly rotating.

WWW.NACTEL.ORG

- 2011—Master's degree in Internet technology concentration in security
- 2014—Bachelor's degree in technology leadership
- 2016—Associate degree concentration in cyber security
- 2017—Master's certificate in information technology leadership

Looking back over 19 years, one might think that this curriculum emerged organically, with relative ease, but this is not the case. Throughout these 19 years, Pace program administrators and faculty have met with industry subject matter experts (SME's) four or five times each year as members of a formal Curriculum Committee. Meeting agendas vary and are jointly determined by both the industry and the university. In the early days, agenda topics included such things as math readiness for a technical telecom curriculum and student readiness for online courses. Today the agenda might include such items as when and how to sunset curriculum—the AC-DC course is now an elective instead of a requirement, for example—and emerging industry trends like cloud computing, programming, big data, or addressing National Security Association (NSA) standards throughout the cyber security curriculum.

"Our industry has rapidly evolved from telecommunications to technology solutions. That evolution could not have occurred without a skilled workforce made possible through programs like NACTEL."

Wesley Long
AT&T University

Success in building such a curriculum depends on several factors. For example, it takes a unique skill set on both the university and industry sides to succeed in this kind of collaborative role. Faculty members who continually need to be "the expert" may have difficulty in the back and forth collaboration required, and industry SMEs who need to hold proprietary content close to the vest may

not be willing to share their companies' future directions and training content in an open forum. As a result, over the years many members of the Pace-NACTEL Curriculum Committee have remained—and some have not—but the overall trend line toward success has been a positive one.

Currently there are literally a dozen entry points into the program for NACTEL students, from a single jump start course to entry into the master's degree. The program today, from jump start courses through the master's degree, is a tightly built system, including stackable credentials, all woven together to support students and their careers within the industry.

"A strength of the NACTEL/Pace relationship is the ongoing curriculum development. The approach was never a one-and-done but scheduled, regular meetings between industry representatives and the college to discuss the curricula. This allowed the courses offered to evolve as the industry did, remaining relevant today and into the future."

Rich Hake
Century Link Technical Training

Surrounded by Student Support Services in an Asynchronous Environment

In addition to initial funding from the Alfred P. Sloan Foundation, in 1999 Pace University applied for and received a grant for the Improvement of Postsecondary Education (FIPSE) as a part of Learning Anytime Anywhere Partnerships (LAAP). At a time when online education was new, the FIPSE grant supported the university's pioneering development of robust student support services that were particularly responsive to online students. Today these systems continue to support our online learners and most are now considered best practices by accrediting groups:

1. **A database-driven website** delivers the most up-to-date program information to students, including a calendar for the five overlapping semesters; degree descriptions; course descriptions indicating the semester the

courses will be offered; links to bookstore information by semester; program policies and procedures; and links to key program administrators, advisors, and instructors.

2. **A student information system** offers an adult-centric web interface for student applications; transcript management; registration; payment, including voucher payments; and advisement information. The system was developed and refined using feedback mechanisms. Information in the student's portal is driven by the database in conjunction with advisement from our academic advisors.

3. **A proctoring system** provides learner authentication and ensures academic program integrity. The system allows faculty to incorporate proctored midterm and final assessments in their courses. The student can select a face-to-face proctor from a list of acceptable proctors—trusted individuals who are not members of the student's family or household—or use an online web proctoring service through a third-party provider.

4. **An embedded course assessment** is performed in every course in weeks 4, 8, and 12. These assessments are completed anonymously by all students and the feedback is provided in real time to the faculty and program administrators. These embedded assessments provide a continuous feedback loop to ensure the quality of the student learning experience throughout the delivery of the course.

5. **An online Seminar** taken prior to the being the program is required for all new students. This course is designed to provide the student with a first-hand experience in learning online, and it stresses the need for student engagement, communication with the instructor and fellow students, and a good time management plan. The exercises in the course allows the student to ready his or her learning station with the necessary software and plug-ins that are required for instruction in the content areas.

6. **A prior learning assessment process** provides the student with the opportunity to earn college credits through the evaluation of his or her professional portfolio or proficiency challenge exams.

7. **An academic and support services team** ensures that the student is making good academic progress, understands how to navigate the support services available in the online learning environment, and creates his or her unique education pathway.

> *"In keeping with the adage that "The only thing that is constant is change" attributed to Heraclitus, the ability of the NACTEL partners and Pace University to adapt to serve online learners working in the telecommunications industry has been remarkable. Marking nearly 20 years of successful program delivery, the NACTEL program has been the jewel in the crown of quality online education. The Seidenberg School of Computer Science and Information Systems at Pace University is honored to be a collaborator to the NACTEL partnership."*

Jonathan Hill
Dean, Seidenberg School of Computer Science and Information Systems

What Makes NACTEL Work?

There are several factors which have contributed to the success of the NACTEL program at Pace University. Some of these factors are in place by design; some by luck. In any case, the elements proven to be critical for such a high-performing educational partnership include:

• **Industry need.** NACTEL can be described as having an "industry driven curriculum" or as "built by the industry—for the industry." The bottom line is that if the industry didn't need this curriculum, it wouldn't exist.

• **A consistent and dedicated point of contact (POC) for both the industry and**

the university. There are teams that support both sides on the NACTEL partnership. On the university side are faculty, student service personnel, and an instructional design team. On the industry side are six partners—four employers and two unions—each with representatives who support NACTEL. Over the 19 years that NACTEL has existed, both the university and industry have experienced turnover. However, there has been a constant and consistent POC on both sides of the partnership.

When there has been turnover in the POC, there is a commitment from all partners to identify a replacement and facilitate a smooth transition. The NACTEL director at Pace and the NACTEL executive director, who is also a CAEL employee, have routine meetings, serving as the glue that holds each respective side together. Without these POC's in place, the risk over time of the partnership dissolving would be much greater.

- **The importance of continual marketing and promotion of the program.** A common blind spot in some college programs built for corporate clients is the heavy emphasis placed on building the curriculum, followed by scant emphasis on marketing and promoting the program. Of course, both are important. Successfully promoting this program to the NACTEL incumbent workforce requires a specific skill set that includes detailed knowledge of each partner's workforce and membership; continual tracking of the changes and trends in the industry; and finding new, imaginative, and effective ways to communicate to each partner audience.

- **University responsiveness.** Responsiveness is a core value at Pace University, and it's important in several ways.

  o *Responsive curriculum development*. Whether it's deserved or not, colleges have a reputation for moving very slowly. When the client is an industry coalition that changes quickly and

expects immediate action, slow moving curriculum development isn't an option. There are many factors that contribute to the university's ability to respond quickly. The ability to respond quickly and effectively seems to be part of some colleges' DNA; some can do it automatically, while some struggle. Faculty at Pace University, many of whom work or have worked in the industry, contribute to responsiveness. It also helps that the dean of the school that houses the NACTEL program has experience in managing a start-up company.

  o *Attention to faculty concerns*. Pace has a team approach in delivering the NACTEL program. A weekly NACTEL team meeting provides an immediate forum to address faculty concerns, curriculum development, and student service issues.

  o *Attention to student concerns*. Responsiveness to students shows up in several ways. First, the embedded course assessments administered in weeks 4, 8, and 12 provide the format to respond to student feedback immediately—early in the course—instead of waiting until the end of a course when feedback will only help the next students taking the course. In addition, each degree program offered through NACTEL has a dedicated advisor who serves as a gatekeeper and advocate, helping students with questions or concerns and making appropriate and timely connections with faculty, tutors, technical assistance, and financial and billing assistance.

- **Data, evaluation, metrics.** Data is important for both the university and for the NACTEL partners. In the early years of NACTEL, the FPSE grant allowed the university to build a data-driven website, which continues to serve as the backbone for the program. Students access their information through an online student portal. Additionally, in the early years of the program NACTEL and Pace jointly developed a reporting structure to track enrollment, company and

union affiliation, successful course completion, and degree and certificate completion. Over time, this consistent reporting template has been invaluable.

In considering the NACTEL industry-education partnership compared to a more traditional model, we believe there are inherent and significant differences.

A more traditional partnership has an industry advisory group that meets occasionally to "bless" a curriculum that the university has developed. NACTEL, however, includes employers who serve as true partners over time, co-developing and truly "co-owning" the curriculum. Table 1 clarifies the differences between the two models.

Table 1: Models of Employer Partnerships

Employers as Advisors	Employers as Partners
Employers attend program advisory committee meetings to "sign off" on a faculty-built curriculum.	Employers are deeply involved in: • Identifying critical competencies • Signaling the trends and direction of the industry • Curriculum assessment and design • Providing adjunct faculty, equipment, teaching materials
Employers respond to surveys and occasional data requests.	Employers help design, implement, and interpret surveys.
Employers work ad hoc with units in the school to meet customized training needs.	Employers work with colleges over time to address current and pending workforce needs.
Employers discuss the importance of higher skills and provide curriculum advice.	Employers work with colleges and their partners to provide detailed direction about requisite competencies, both current and future.
Employers participate as needed when asked by college or program staff.	Employers are continually involved in program design, direction, refinement, and promotion.

One of the most touching and insightful pieces of data collection are the interviews of each year's graduates. Following is a sample of student comments:

Alphur "Slim" Willock
Verizon, CWA 1106

"When I first started, it was all about phones; now it's all about computers; and next is where I want to go, which is wireless. The emerging wireless technology course I took has definitely helped me and geared me toward the right path."

Ray Whitman
AT&T, Director of Customer Information Services

"The knowledge that I gained at Pace is directly aligned with the trajectory of the telecommunications industry."

Joe Cartwright
AT&T, Network Technician
CWA 4123

"The NACTEL program helped me gain the big picture view of networking and all of telecom."

A Student Perspective

Since 1999, NACTEL students have taken nearly 30,000 courses and earned 1700 degrees. From the beginning, NACTEL believed it was important to survey students independently from the university. Each year, NACTEL surveys students who have graduated, fielding the survey 18 months following graduation to gauge their thinking after they've had time to reflect on their experiences.

Results of these surveys indicate that:
- 92% have been able to use what they have learned in their work.
- 100% have a better understanding of the telecom industry.
- 93% are more aware of the emerging job opportunities in the industry.
- 93% believe they are more prepared for the emerging job opportunities in the industry.

These students have the same challenges that are typical for all working adults when they return to school, including the responsibility for young children, spouses, and elderly parents. But telecom employee-students have additional challenges. Remember, that while attending college, these adults continue to work in an industry that must respond quickly to national emergencies. Consider for example, the September 11, 2001 attack on the World Trade Center, multiple Category 5 hurricanes (Sandy, Katrina and most recently Harvey, Irma, and Maria), or major wildfires in the West. In the midst of these emergencies, and of many others like them, restoring the communication infrastructure becomes the top priority. In this context, it is remarkable that NACTEL students successfully complete Pace University classes 98% of the time and persist to graduation. On average, students need six years to complete the associate degree and four years following completion of the associate degree to complete the bachelor's. The program record is probably the student who took 11 years to complete his associate degree—but the point is that he *did* complete!

Looking Back and Ahead

Without a doubt, NACTEL has had its share of luck and good fortune over 19 years, but NACTEL's success is the result of more than just luck. By both intention and intuition, NACTEL and Pace built a program that models the best of online practices, provides quality service for both the adults and the industry sector that it supports, and ultimately touches all of us as telecom consumers in a positive way. Who knows what is coming next in the industry, but you can be sure NACTEL will provide the education to get us there.

REFERENCES

Joskow, P. L., Bohi, D. R., & Gollop, F. M. (1989). Regulatory Failure, Regulatory Reform, and Structural Change in the Electrical Power Industry. Brookings Papers on Economic Activity. Microeconomics, 1989, 125-208.

Bureau of Labor Statistics, US Department of Labor. (2017). NAICS 517000 - Telecommunications.

PATHWAYS TO DEGREE, PATHWAYS TO PROMOTION: HOW EMPLOYERS AND COMMUNITY COLLEGES CAN WORK TOGETHER TO CREATE PATHWAYS TO SUCCESS

By Patrick H. Green, Interim Vice President for Workforce Development, Tulsa Community College

Community colleges and retail banks share many of the same retention issues for both new students and new employees, respectively. Entry-level employees are often not engaged and do not have a clear vision of their path to promotion and increased opportunity, resulting in high levels of turnover and low utilization of tuition reimbursement benefits. Likewise, community colleges often struggle to engage students and give them a clear pathway through their degree programs, resulting in low graduation rates and low levels of student engagement. Tulsa Community College (TCC) is working with Arvest Bank's Tulsa regional offices to combat these retention issues. In a unique partnership, TCC and Arvest have built a program dubbed 20/20 to encourage entry-level bank employees to attend college, finish college, and move into higher-level positions. The program borrows from the guided pathways model to give these employees a side-by-side view of both their degree path with TCC and their career path with Arvest. The 20/20 program allows employees to begin their journey with TCC and Arvest with an end in mind; it gives them clarity of their potential future in both education and their career. This article will explore how some of the principles of guided pathways can be used in partnership with employers to help recruit and retain talented employees and students through the lens of the TCC/Arvest partnership.

The Shared Issue

It is no secret that retention of community college students presents challenges across the country. Nationally, the Department of Education measures the community college three-year graduation rate to be 22%. The American Association of Community College's (AACC) document "Trends in Community College Enrollment and Completion Data, 2016" shows that when the measurement period is stretched to six years, more than 60% of students who start with a 2-year institution will not have finished (Juszkiewicz, 2016). The most common reasons students fail to persist in community college have been widely studied and consistently include:

- Lack of engagement;
- Lack of clarity of their path;
- Lack of financial resources; and
- Lack of desire or need to finish a degree to accomplish their goals.

Retail banks, and the retail sector in general, face similar retention issues among entry-level employees. The *Small Business Chronicle* notes that, "banks often fill teller jobs with people who have no college education. College degrees are often prerequisites for more senior retail bank roles. Therefore, many tellers leave the industry due to the perceived lack of promotion opportunities" (Ciaran, n.d.). For these reasons, it is imperative for banks to invest in their entry-level employees from their very first engagement because these employees represent a wealth of talent if they continue their education and stay with the company.

Beyond the general population, millennials represent a distinct subset of adult employees and adult learners at community colleges that poses specific challenges. Often, both employers and community colleges make the mistake of thinking of millennials as individuals fresh out of high school who are 18 to 22 years old; but the reality is that, by some estimates, millennials now stretch into their mid-thirties and comprise a significant portion of both the workforce and community college student population. Two recent Gallup reports shed light on millennial turnover and explore what may be affecting the retail banking sector.

The data tells us that the perception of millennial mobility is real; millennials are more likely to move

jobs and are more open to moving jobs than other generations. Consider the following findings about millennials in the workplace from Gallup's reports:

- One in five millennials changed jobs within the last year.
- 60% of working millennials report being open to new job opportunities.
- Only half of working millennials report that they "strongly believe" they will be with their current employer within a year.

Over one-third of working millennials report that they will be looking for a different job within one year (Adkins, 2016).

All of these factors add up for employers. Based on this data, Gallup further estimates that millennial turnover alone costs the U.S. economy in excess of $30 million annually (Adkins, 2016). Costs come in the form of lower productivity during vacancies, overworked remaining staff driving turnover further, lost knowledge that cannot be quickly replaced, training costs to prepare new employees to work, interviewing costs and time away from work for current employees to conduct interviews, and the continuing costs of engaging the services of recruiting agencies. Indeed, a recent report produced by the Lumina Foundation found that found that Discover Financial Services' tuition reimbursement program produced a return on investment of 144% (Lumina, 2016).

The data tell us that millennials are highly mobile, and change jobs more frequently than generations past. What data does not explain is why millennial turnover is so high. There are numerous studies on millennial turnover, but a consistent theme among them is lack of engagement. Namely, millennials feel unconnected behaviorally, emotionally, and socially to their jobs. Employers often use traditional methods of advancement, engagement, and recruitment and fail to connect the following items to entering millennials:

- The importance of development.
- The relationship between development and promotion.
- Promotion capability.
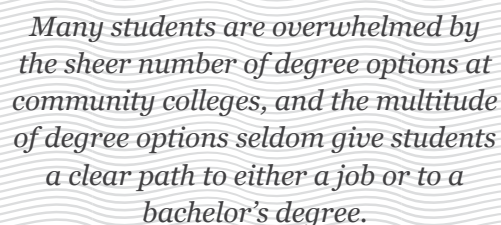- The path from entry-level to higher-level positions.

- The relationship between education and higher-level positions.

While this evidence is compelling, it cannot be assumed that other generations are more loyal than millennials. Indeed, turnover affects the retail and banking sectors across generations.

So, the data tell a similar story for both the retail sector and community colleges; both face issues related to retention and engagement of their respective constituencies. Tulsa Community College and Arvest are working to solve that problem together through a deep and meaningful partnership utilizing some of the pillars of the guided pathways model to retain both students and new employees.

What Is Guided Pathways?

Guided pathways seeks to solve the very problems experienced at community colleges and within the retail banking sector. Community colleges have traditionally focused almost exclusively on access. Retail banking has focused on the hiring process as well as on bringing in more and more people to fight against turnover and fill staffing gaps. Guided pathways seeks to shift community college culture from simply "access" to "access and success." As the American Association of Community Colleges notes, the beginnings of this model originated in the original partnership that created Achieving the Dream and is really a culmination of evidence-based practices to increase student success.

Many students are overwhelmed by the sheer number of degree options at community colleges, and the multitude of degree options seldom give students a clear path to either a job or to a bachelor's degree.

Guided pathways is itself built upon the premise that students desire not only to enter college but to complete. Further, the guided pathways model has been developed in response to peer reviewed research demonstrating that community colleges' lack of coherent degree plans and multitude of

offerings have actually created an impediment to success. Many students are overwhelmed by the sheer number of degree options at community colleges, and the multitude of degree options seldom give students a clear path to either a job or to a bachelor's degree. In essence, students often do not enter a path, do not feel engaged, are overwhelmed by the sheer number of programs available, and do not begin their college experience with the end in mind.

There are four essential practices associated with the pathways model. To fully implement pathways, a college must:

- Clarify paths to student end goals.
- Help students choose and enter a pathway.
- Help students stay on path.
- Ensure students are learning.

In 2015, TCC, along with 29 other community colleges from across the country, became part of the Pathways Project. This project, funded by the Bill and Melinda Gates Foundation, seeks to transport the model across the country. The ultimate goal is to make community colleges experts at "scaling up" practices essential to the four pillars of pathways to effect system wide change for the benefit of students.

To date, TCC has undertaken changes that are both broad and deep to embrace the model. The College has reorganized itself completely, in both student and academic affairs, around seven schools representing the seven "meta majors" available at TCC: Science and Math, Liberal Arts and Communications, Visual and Performing Arts, Business and Information Technology, Health Sciences, and Engineering and Applied Technologies. TCC has instituted and scaled up other promising practices across the College, including mandatory new student orientation; mandatory advisement under a new "case management" model; requisite on-time enrollment; and alignment of institutional, program, and course learning outcomes. All of the changes are evidence based and designed to help students meet their ultimate goals for completion.

Among all of the changes implemented at TCC, the change most central to this partnership has been the creation of degree plans for every major at the College. The plans are called My Academic Plans or MAPs. Bailey, Jaggars, and Jenkins, quoting Cass Sunstein of Harvard Law School, note: "In many domains, the identification of a specific, clear, unambiguous path or plan has an important effect on our decisions."

Indeed, the purpose of a MAP is to fight inaction and disengagement by providing a student with a clear picture of their path to completion. From the moment a student comes into contact with TCC, they are now part of a program, and they can begin their academic journey with an end in mind. The MAP includes not only course sequencing but also milestones related to career exploration, internships, transfer check-ins, and degree completion.

> *It is important for employers and colleges to come together in deep and meaningful ways to address systemic problems and to look at these problems in new ways.*

What Pathways Essential Practices Can Be Implemented with Employers?

Given what we know about the shared problem companies and community colleges face, it's important to examine what best practices might be effective across the spectrum with regard to recruitment and retention of both employees and students. Community colleges and employers often focus their relationships on the college's ability to prepare and supply graduates and the employers' ability to give advice on relevant skills. It is important for employers and colleges to come together in deep and meaningful ways to address systemic problems and to look at these problems in new ways.

Maybe a college's solution to high turnover is not just trying to increase the number of graduates but for the college to work with an employer on a retention strategy so that the graduates stay with that employer longer. This solution can have greater effect on the employer's bottom line and reduces the number of graduates the college produces who leave their jobs and drift through the workforce. Indeed, you can simply replace the

word "student" with the word "employee" into the four essential practices of pathways and see that it sets a framework for engagement and, hopefully, retention and professional growth.

- Clarify paths to employee end goals.
- Help employees enter a pathway.
- Help employees stay on Path.
- Ensure employees are learning.

Because the four pathways essential practices are conveyable to both education and business, they form the backbone of the TCC/Arvest partnership. While Arvest is already invested in employee growth and retention, the 20/20 program is new. The 20/20 program presents, side-by-side, a clear path from entry level employee to higher level positions and a clear path to a business degree from TCC, this visual representation of each employee's future represents a roadmap to academic and career success. Arvest President and CEO Kirk Hays agrees that the potential of the 20/20 program is large for their organization. Kirk says that the current utilization rate for the tuition reimbursement benefit is low but that the 20/20 program will give new employees a better understanding of how the tuition reimbursement can be used, how far it will get them in school, and how they can leverage it for growth within the company.

This is about investing in our people. The return and retention will come from that.

Kirk Hays
Arvest President and CEO

"It will, for the first time, give our new employees a view of their future and a view of how far their tuition benefit can stretch." He further added that, "Arvest is committed to employee growth and development and higher education." Kirk knows that employees who utilize tuition benefits are more likely to stay and exhibit loyalty to the company and more likely to help the company grow. "This really is one of those things that not only will help with retention but will help our growth. Most importantly, this is about investing in our people.

The return and retention will come from that."

Kirk has had a long career in banking, but this is the first time he has been in a position to create a partnership that puts higher education front and center in employee orientation and gives them such a clear view of their educational and career opportunities from the moment they enter employment. The program is, admittedly, in its infancy, but he hopes that it will improve loyalty, decrease turnover, and most importantly, help employees grow to their maximum potential. He explains, "Honestly, the idea for this came from sitting around the table with new employees coming into the company and seeing that many of them didn't have a plan for growth with the company or personally, and the first thing I thought was that these employees need to go to college." Kirk hopes that the people-centered approach will pay dividends for Arvest in the long-term and that, by focusing on people, investing in them, and providing them a path for success, the bottom line related to retention will take care of itself.

It is important to engage a broad group of people from affected areas of both organizations initially to get potential road blocks out of the way early.

Partnership Nuts and Bolts

The impetus behind this partnership is clear, but what does the partnership look like? In initial meetings, the team consisted of the Arvest President and CEO and Human Resources and Recruiting staff along with the TCC Dean of Business and Information Technology and Interim Vice President for Workforce Development. It is important to engage a broad group of people from affected areas of both organizations initially to get potential road blocks out of the way early. That team set a vision for desired goals and focused its discussions on student success, employee retention, and employee growth.

After initial meetings, the finer points of the plan were put together by a team from TCC including TCC's Dean of Business and Information Technology,

Business Department Chair and Arvest staff. TCC needed to understand how Arvest's tuition reimbursement system worked and needed to know where locations were across the city to ensure that employees had easy access to campus and staff. Arvest needed to understand some of the limitations placed on the College and students by financial aid, age, and other local incentive programs.

In its current incarnation, the 20/20 program encourages new employees to take at least 20 credit hours with TCC each year, utilizing a combination of their tuition benefits and financial aid. In addition, Arvest employees must work at least 20 hours per week to be eligible for tuition benefits. The program focuses on both existing employees and new hires. All new hires at Arvest are encouraged, through their formal Arvest orientation, to become part of the 20/20 program. The goal is to give new employees the ability to see their career progression side-by-side a degree MAP so they have a clear picture of a future that is attainable and near at hand.

> *Most challenges that arise in community college and employer partnerships occur when the partners do not take the time to understand each other's systems.*

During the orientation sessions, employees are presented with a detailed MAP showing not only their three-year progression through a degree but also the stackable certificates they will earn along the way. The MAP further shows what expected tuition and benefits will be and how far employees will be able to stretch their tuition reimbursement benefit. In this way, employees have all of the information they need to utilize their benefit to the fullest and budget for any out of pocket expenses. Within the same packet, there is information on career pathways within Arvest, demonstrating the pathways available to new employees should they stay in school and stay with Arvest for three years. Finally, the packet gives contact information for the TCC recruiting and career services office to offer new employees a clear entry point for their contact with the College.

> *Community colleges are particularly well positioned to partner with employers in industries requiring low levels of education to enter the field but increasingly higher levels of education to promote through the field.*

Challenges

Most challenges that arise in community college and employer partnerships occur when the partners do not take the time to understand each other's systems. It is imperative, from the outset, that colleges and employers take the time necessary to learn each other's processes. Community colleges must delve extensively with their employer partners to understand why tuition reimbursement programs sometimes get utilized and sometimes do not. Those benefits are designed to grow and retain employees, but they can only be used at a college. To ensure use, effectiveness, and that the benefits actually serve their purpose, employers and colleges must get to know each other well so they can avoid setting up systems that actually serve as roadblocks for employees and students. Likewise, it is important for employers to understand the Community College system in which they reside. It is further important that employers design their tuition reimbursement program in a way that works within the confines of the Community College's enrollment, eligibility, and academic systems.

To date, the only significant challenge for the 20/20 program has been related to branding and corporate compliance, but even that has not been insurmountable. The original idea would have had Arvest and TCC co-branding on all materials. While that was well received here in Tulsa, it presented a challenge to Arvest's national marketing team who works diligently to cultivate a clear national brand. Kirk and his team in the Tulsa region have worked hard with TCC on a solution and have arrived on a workable solution for the program that is localized and speaks more directly to new employees about career pathways locally and TCC programs specifically.

Conclusion

Community colleges exist to help meet the economic and workforce needs of their particular service area, which means there will be an increasing need for these schools to create partnerships with regional employers that are more than advisory in nature. Community colleges are particularly well positioned to partner with employers in industries requiring low levels of education to enter the field but increasingly higher levels of education to promote through the field. Community colleges offer lower tuition, scheduling that is friendly and accessible to working adults, workforce development focused degrees, and a myriad of other benefits to adult students that are hard to find elsewhere. The pillars of guided pathways are not complicated ideas. They are, in fact, the most sensible approaches to retaining and engaging students, enabling them to meet their goals of completion. As higher education professionals, we should be open to, and be on the lookout for, any synergies we might have opportunities to build between our work and the work of our employer partners.

REFERENCES

Adkins, A. "Millennials: The Job-Hopping Generation." (2016, May 12). *Gallup News*, Retrieved from *www.gallup.com/ businessjournal/191459/millennials-job-hopping-generation. aspx*

Bailey, T. R., et al. *Redesigning Americas community colleges: a clearer path to student success*. (20150) Cambridge, MA: Harvard Univ. Press.

Ciaran, J. (n.d.) "What causes a high turnover in retail banks?" *Chron.com*. Retrieved from *smallbusiness.chron. com/causes-high-turnover-retail-banks-65024.html*

Juszkiewicz, J.. (2016, Mar.) *Trends in community college enrollment and completion data*. Retrieved from *www.aacc. nche.edu/Publications/Reports/Documents/Trends_CC_ Enrollment_Final2016.pdf*

Lumina Foundation. (2016, November 30). *Talent investments pay off : Discover Financial Services realizes returns for investments in tuition reimbursement*. Retrieved November 21, 2017, from *https://www.luminafoundation.org/resources/ talent-investments-pay-off-discover-financial-services*

INDUSTRY ADVISORY COUNCILS, INSTITUTIONAL PARTNERSHIPS AND CORPORATION-TO-UNIVERSITY AGREEMENTS: CAPTURING EMERGENT TRENDS FOR OUR STUDENTS AND FOSTERING RELATIONSHIPS ACROSS INDUSTRY

By Eve Krahe, Ph.D., Dean of Graduate Programs, School of Health Services Administration, College of Health Professions, University of Phoenix; Teresa Hutchinson, MBA, Ed.D., Program Dean, School of Business, University of Phoenix; Lisa Radesi, DNP, CNS-NE, RN, Academic Dean, School of Nursing, College of Health Professions, University of Phoenix; Devin Andrews, MAED, Vice President, Office of Admissions and Evaluation, University of Phoenix; Christina Neider, Ed.D., Dean of Undergraduate Programs, School of Health Services Administration, College of Health Professions, University of Phoenix; Marguerite Callaway, MS, MBA, Dean of Specialized Programs, Employer Partnership Group, University of Phoenix; and Dodie Serafini, MSN, RN, CNE, Program Dean, School of Nursing, College of Health Professions, University of Phoenix

The changing dynamics of the U.S. labor market are widely reported, detailing both growth and skills gaps across sectors. According to Lumina Foundation (2017), two-thirds of available employment opportunities across sectors will require a post-secondary degree by 2020, To prepare students for success in this complex job market, academic programs must be agile and responsive in curriculum design and dissemination, focused on employer needs and emergent industry trends while retaining academic rigor. Positive student outcomes, retention, graduation, and job success depend upon a program's ability to meet these requirements with efficacy.

This manuscript details three components identified by University of Phoenix as necessary to develop and deliver responsive academic programs. Three exemplars of operationalization will be presented: the industry advisory council at the School of Health Services Administration, academic partnerships that support the Registered Nurse to Bachelor of Science in Nursing (RN/BSN) continuing education program in the School of Nursing, and an alternative credit solution designed by the School of Business.

- **Industry Advisory Council:** The University's School of Health Services Administration has implemented an interprofessional health sector advisory council, translating industry trends to academic learning and preparing students to navigate the largest and fastest-growing employment market. From C-suite leaders to sustainability experts and healthcare designers, the council is foundational in informing curricula and the School's collaborative process of designing "work-product" assignments that are specific to the sector in preparing students for on-the-job requirements.

- **Academic Partnerships:** The School of Nursing has responded to the Institute of Medicine (IOM) regarding requisite baccalaureate preparation for 80% of the nursing workforce by the year 2020. This initiative is supported through the University's concurrent enrollment program (CEP) designed to integrate with associate-degree-level nursing (ADN) programs. The CEP partnership permits the ADN graduate to concurrently complete a Bachelor of Science in Nursing (BSN), which answers the IOM requirement and accelerates students' entry into practice.

- **Alternative Credit Solution:** The School of Business has partnered with a large organization to apply learning from a Lean Leadership Development Program (LLDP) toward credits within the Master of Business Administration

(MBA) degree. This approach helps bridge the business acumen gap, while providing employees with specialized knowledge to meet organizational demands. This type of implementation of a corporation-to-university agreement is helping to translate organizations' corporate training to academic credit for students at the University.

> *The academic programs in health administration education—programs that train these future leaders—must respond to emerging industry trends and needs with agility and rigor.*

This article provides an in-depth look at each of these approaches, which have allowed for greater responsiveness to the needs of their respective industries.

School of Health Services Administration: Industry Advisory Boards

The Bureau of Labor Statistics (2015) reports that between 2014 and 2024 the healthcare sector will add more jobs over the next decade than any other industry group. Sector growth is projected at 19%, adding 2.3 million jobs to the market. A portion of this growth is due to the increasing need for clinicians—those who provide direct patient care. However, a substantial and growing part of the sector is primarily non-clinical. This population comprises individuals who are leading and supporting administrative, strategic, technological, financial, architectural, supply chain, and patient experience verticals across the sector. A "vertical" within an organization is a specific disciplinary or focused area that runs up ("vertically") through an organization all the way from front line staff to executive leadership. Hospitals, stand-alone clinics, retail healthcare, analytics, healthcare design, insurance, privacy and compliance, sustainability, small business and process re-engineering, are all elements of an exponentially broadening and diversifying industry (Magestro, 2016). The academic programs in health administration education—programs that train

these future leaders—must respond to emerging industry trends and needs with agility and rigor.

The paper, "Creating a university-industry advisory board for a joint engineering school," (Bremner, Meehan, Liu, & Liu, 2016; Meeder & Pawlowski, 2012; Dorazio, 1996) demonstrates that industry advisory councils are an effective way to accomplish the requisite alignment between industry and academic preparation. For the School of Health Services Administration (SHSA), the inception, cultivation and continued involvement of the advisory council has proved an effective means of translating industry trends to academic learning, preparing students to help navigate the largest and fastest-growing job market.

Advisory boards are well-documented in disciplines, such as general business, executive education, engineering, and even in library science. However, the literature asserting the importance of health administration advisory councils is not as widespread. Because the health sector's organizational structures are akin to those of general business but unique in requisite healthcare context, the SHSA advisory council used insights from general business on a foundation of healthcare sector understanding. Learnings from advisory councils in executive education were also used, as the SHSA student population is statistically older, more experienced professionally, currently employed and desirous of coursework that directly ties to current or future job issues and trends.

In addition, the body of scholarship asserting the centrality of interprofessional teamwork in healthcare informed the design of the council and served as an evidence-based foundation. All constituents throughout the sector are welcome, and the council meets together as an interdisciplinary body. The council also includes academic members, such as deans, faculty and instructional design teams.

The School of Health Services Administration has created a highly responsive curriculum design model by actively involving advisory council members in this design, in collaboration with instructional designers. The work occurs inside of several feedback loops, encouraging continuous quality improvement.

Current faculty act as mentors to council members, socializing them to the effective dissemination of industry knowledge in an academic setting. Designers act as mentors to both parties, translating knowledge into course material grounded in best practices in andragogy. The feedback loop continues, with council members mentoring designers as regards the sector's unique "work products"—sustainability audits, retail health work flows, board of directors presentations, extemporaneous speeches—the mastery of which is required for learners to be successful in their jobs.

Each year, in addition to the year-round collaborative contributions expected of members, the SHSA leadership team holds a spring summit with the council and academic team. Current and emerging trends in the healthcare industry are discussed and active curriculum is reviewed for currency. The event also serves to create community and networking opportunities between members, resulting in many new projects within SHSA and elsewhere.

Assessment of student learning follows a continuous quality improvement model, with phases that include planning, data collection, data analysis, improvements and evaluation. Programmatic student learning outcomes, including integrated benchmarking assignments with standardized analytic rubrics supplying data for analysis, are the purview of the assessment function of the School.

Also used within the School is the academic program review (APR), conducted every three to five years as a comprehensive examination of all aspects of the student learning experience. Advisory council members are required to participate as external reviewers. The APR provides the school with actionable items to make program improvements grounded in academic rigor, industry expertise, and student experience.

Exemplar: Undergraduate Program in Retail Health

An innovative exemplar of close collaboration between the council and the academic teams is the recently launched SHSA undergraduate program in retail health management. The council identified this area two years ago as a gap in training within the industry, which no other higher education institution was moving to fill.

The resulting program bridges the gap between the clinical and business side of retail health clinics, increasing efficiency and driving better patient outcomes. Two advisory council members, leaders in the retail health sector, served as subject matter experts who assisted in program and course design and then joined the faculty to teach the courses.

The program's mission statement, student learning outcomes and benchmarking assignments meet industry standards and the expectations of graduates entering the retail health space. The result is a robust and responsive curriculum, preparing graduates for this emerging area of the sector built via close collaboration between industry and academic experts.
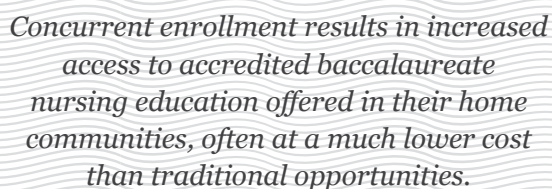
School of Nursing: Institutional Partnerships for BSN Preparation

There are currently more than three million registered nurses in the U.S., comprising the largest population of healthcare workers. According to the National Council of State Boards of Nursing (2016), 50% of the nursing workforce has a BSN. This count is 30% short of the requisite 80% benchmark set by the IOM (2010), which is to be achieved by the year 2020. To raise the number of BSNs, the IOM has called for increased support of academic pathways toward baccalaureate degrees in nursing, urging nurses to secure education and training at more advanced levels. Unfortunately, due to constraints, such as flexibility, cost, and some employers not requiring nurses to have a BSN, many nurses continue to enter practice with associate degree preparation (National Council of State Boards of Nursing, 2017).

The University of Phoenix School of Nursing seeks to be the leader in professional nursing education by providing programs that will fulfill the current and future needs of healthcare. With this call from the IOM, demand for baccalaureate-prepared nurses is both increasing and non-negotiable (IOM, 2010). The School recognizes that flexible and relevant educational programs are not only essential to prepare students for contemporary nursing practice but also to answer national policy imperatives.

At University of Phoenix, this initiative is supported through a concurrent enrollment program (CEP), designed to align directly with associate degree nursing programs. Relationships with associate degree granting institutions extend the opportunity for students to complete select baccalaureate courses while finishing their associate degree program, providing the ADN with a head start on the baccalaureate degree.

At this time, 44% of hospitals nationwide require a BSN and 78% strongly prefer a BSN (AACN, 2017). The CEP partnership permits nurses with an associate degree to share with employers their current academic standing as a BSN student, which can advance student entry into professional practice (Hoffman, 2016). Nursing practice and nursing education must work collaboratively to understand the knowledge, skills, and attitudes necessary for today's practicing nurse. It is through these dialogues that nurses learn to be prepared to deliver safe, quality care. The School of Nursing believes CEP provides a strong foundation for nursing practice and encourages opportunities for advancement into leadership positions while also answering the IOM.

> *Concurrent enrollment results in increased access to accredited baccalaureate nursing education offered in their home communities, often at a much lower cost than traditional opportunities.*

According to the American Organization of Nurse Executives (2016), concurrent enrollment can expand pre-licensure BSN capacity in budget environments that often control the number of student slots available. This expansion is done by community colleges and universities working in cooperation to design a shared curriculum, such as concurrent enrollment, that takes advantage of the strengths of both types of academic environments. The outcome for students is increased access to accredited baccalaureate nursing education offered in their home communities, often at a much lower cost than traditional opportunities. As a result, patients and employers benefit from an increased number of BSN-prepared nurses entering the workforce.

The University RN/BSN curriculum builds upon the skills and knowledge gained in the ADN programs. The registered nurse completing the University's BSN will be prepared to apply current research to practice, serve in a leadership role, understand and develop healthcare policy, address quality and safety and understand nursing informatics. The University's School of Nursing is committed to innovation, quality and partnerships that advance nursing education and align tightly with national policy.

School of Business: Alternative Credit Solutions for Organizational Training

The University of Phoenix School of Business has identified a strategy for bridging the business acumen gap while providing employees with specialized knowledge to meet organizational demands. The implementation of corporation-to-university agreements is helping translate organizations' corporate training toward academic credit for students.

Organizations increased per-employee spending on training to $1,252 in 2015. While only a 1.9% increase over 2014's rate of $1,229, 60% of the increase went to in-house training and development expenses. Specialized organizations like healthcare, technology, and insurance spend a larger proportion per employee to meet regulatory and compliance needs of a fast-paced industry. On average, 2015 training expenditures cost companies 4.3% of total payroll dollars and 8.3% of profit (Association for Talent Development, 2016). Corporations face a dichotomy of meeting industry demands while upskilling employees and controlling budgets.

> *Opportunities to translate corporate training courses into college credit opens a pathway for businesses to sustain a high return on investment and to add value for employees.*

Efficiencies are needed to bridge the gap between corporate training and academic learning and to minimize overhead related to employee development. Growth of internal corporate universities has doubled in the last 10 years to contend with a talent shortage (Net@Work, 2017). Additionally, the work force is aging, and employee turnover continues to grow. Organizations seek to offer the best learning experiences to employees while focusing on the return on investment. Opportunities to translate corporate training courses into college credit opens a pathway for businesses to sustain a high return on investment and to add value for employees.

Employers use organizations like the American Council on Education (ACE) to assist in evaluating in-house training for college credit (ACE, 2017). ACE offers a way for organizations to enhance in-house training and educational benefits through the assessment of corporate learning into college credit recommendations. Many colleges and universities accept ACE recommendations for credit into their programs.

The University of Phoenix School of Business recently collaborated with a large healthcare organization of 90,000 employees to lend added value by way of academic credit to a Lean Leadership Development Program (LLDP). The healthcare organization decided to seek ACE accreditation first to enhance employees' year-long commitment to the LLDP by obtaining college-level credit for program completion. ACE credit recommendations would allow employees to apply the credits for the LLDP training at a school of their choice.

The School of Business reviewed the ACE recommendations and supporting LLDP documentation, including additional practicum hours. The healthcare organization's LLDP cohort participants earned six credits of graduate level coursework toward a Master of Business Administration (MBA) program at University of Phoenix and recognition of the experiential hours. LLDP visibility and significance was heightened throughout the corporation when announcements regarding the partnership and educational potential were publicized. Employees of the healthcare organization could now complete an MBA in one year in conjunction with participation in the LLDP. In this way, the partnership bridges the business acumen gap while providing employees with the specialized lean leadership to help meet organizational demands. The tuition reimbursement savings relative to the MBA credit waivers afforded supplemental benefits to employees and the corporation.

Conclusion

University of Phoenix continues to strive for innovation and positive student outcomes by providing career relevant-higher education for working adult students. The University's mission is being operationalized through three distinct programs that also demonstrate the continued focus on bridging the academic and industry gap. Industry advisory boards, academic partnerships and alternative credit solutions are best practices helping the University ensure that curriculum is responsive to industry needs and that students gain the skills and knowledge necessary for success in today's complex and dynamic employment market.

REFERENCES

American Council on Education (ACE). (2017). The employer's guide to credit. Retrieved from *http://www.acenet.edu/news-room/Pages/Employer-Guide-To-Credit-Main-Landing-Page.aspx*

American Association of Colleges of Nursing. (2017). Leading initiatives: Hallmarks of the professional nursing practice environment. Retrieved from *http://www.aacn.nche.edu/publications/white-papers/hallmarks-practice-environment*

Association for Talent Development. (2016). 2016 State of the industry. Retrieved from www.td.org

Bremner, D., Meehan, K., Lui, Y, & Liu X. (2016, June). Creating a university-industry advisory board for a joint engineering school. Paper presented at 2016 ASEE Annual Conference & Exposition, New Orleans, LA. doi:10.18260/p.26597

Bureau of Labor Statistics. (2015). Occupational outlook handbook. Retrieved from *https://www.bls.gov/ooh/healthcare/home.htm*

Dorazio, P. (1996). Professional advisory boards: Fostering communication and collaboration between academe and industry. *Business Communication Quarterly, 59*(3), 98-104.

Hoffman, B. (2016, January). What's working? Outcomes from new models of academic progression. *Voice of Nursing Leadership*, 16-17. Retrieved from *www.aone.org/docs/apin/apin-voice-january-2016.pdf*

Institute of Medicine of the National Academies. (2011). *The Future of Nursing: Leading change, advancing health.* Retrieved from *www.natinalacademies.org/hmd/Reports/2010/The-Future-of-Nursing-Leading-Change-Advancing-Health.aspx*

Lumina Foundation. (2017). Facts and figures. Retrieved from *http://www.luminafoundation.org/facts-and-figures*

Magestro, D. (2016). *Improving Outcomes with Data: SAS Health Analytics Forum 2016.* (White paper). Retrieved from: *https://www.sas.com/en_us/offers/sem/iia-improving-outcomes-with-data-108362.html*

Meeder, H., & Pawlowski, B. (2012, February). Advisory boards: Gateway to business engagement. *Techniques: Connecting Education and Careers, (87)*2, 28-31.

National Council of State Boards of Nursing. (2016). National nursing workforce survey. Retrieved from *https://www.ncsbn.org/recent-research.htm*

Net@Work. (2016). Recruiting trends and challenges for 2017. Retrieved from *http://www.netatwork.com/recruiting-trends-and-challenges-for-2017/*

University of Phoenix. (2015). Concurrent associate degree-baccalaureate degree nursing program. Retrieved from *www.phoenix.edu*

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