Creating an Accelerated Pathways Program for Adult Learning that Works

South Seattle College

Multi-Occupation in Engineering & Technology (MOET)

Associates of Applied Science – Transfer Degree Program

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SOUTH SEATTLE COLLEGE | GEORGETOWN

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EXECUTIVE SUMMARY

Seattle Colleges created a unique degree to accelerate adult learners to fill in-demand family-wage jobs. The creation of this degree was based upon experience in educating a workforce at the intersection of technology, the built environment, and social equity.

Industry's need for workers is ever growing, specifically for employees with experience, training, and education. Science- and engineering-related jobs are growing faster than other employment sectors. Recent labor trends, including record resignations, mean competition for skilled talent is at an all-time high; simultaneously, employees seek careers with meaning and connection to social and environmental improvement. Providing accelerated pathways for adult workers to earn applied bachelor's degrees is one of the most effective strategies to bridge the workforce gap in Washington State and beyond.

There are two significant problems that industry/workforce face. First is the lack of educated and skilled applicants to fill current and future positions, and second is a lack of diversity in all aspects of the workforce. These two problems cannot be solved within one group or institution and must be worked on and committed to broadly.

The United State Census reported in 2010 that of the 200 million people 25 years or older, 26 million of them had not completed high school and only 36 percent of them completed at least a 2-year degree, and another 17 percent started college but never completed. These percentages increased from the 2000 census by around 4 percent, and in 2020 stayed about the same, with fewer than 4 in 10 of the United States population having some postsecondary education 17 percent not completing high school, that leaves around 43 percent of 200 million working adults having some college experience with no degree. (Census Data, 2020)

The challenge of obtaining an educational degree can be broken down further by race and ethnic groups. In 2020, of the approximately 210 million adults 25 or older, 52 percent who self-identified as Asian had bachelor's degrees, non-Hispanic whites were at 33 percent, Black people were at 20 percent, Hispanics 14 percent, and Native American and other groups less than 8 percent. These numbers present a current problem that needs a future solution. By understanding the data on educational achievement and racial disparity, we can begin to create solutions that improve the educational aspects of these 210 million as well as create an inclusive and equitable option for students no matter their race or ethnic background.

Washington "is working to increase education attainment so that 70 percent of adults ages 25 to 40 have a postsecondary credential." (Kwakye, I. et al, p.1). Washington Data & Research reports that 37 percent of adults over 25 have a bachelor's degree or higher while 91.7 percent have a high school degree or equivalent (Washington Data & Research, 2019). This is higher than the national average, but still is cause for review. The Washington Equity Report Snapshot states that "lower educational attainment tend to have higher rates of unemployment and lower incomes" (p.1) making post-secondary education degrees critical in contributing to the economic success and wellbeing of individuals and the state.

From the employee/student view the aspect most relevant to attaining a bachelor's degree is the ability to obtain a higher paying job and thus have economic security. "Higher education is correlated with higher income – those with higher educational attainment are more likely to be employed in high-paying jobs." (Kwakye, I. rt al, p.5) Adults understand that higher education leads to higher paying positions, but sometime the cost of education puts education out of reach.

The cost of education leads to a disparity of educational access and completion. Because of the costs associated with higher education, family commitments, living expenses, and other life events, many adults cannot complete a full 2- or 4-year college degree program. Often, adults will join the workforce and grow their skills on the job. Many get certifications and training through their employer; others join the military and gain skills there, and still others take continuing education or other educational non-credit courses to advance their skills.

Once they have these skills and begin to advance in their careers, adults may conclude a college degree can provide them more skills, a better position, and a higher salary. The question many then ask is, "How do I get credit for what I already know: My certifications, trainings, experience, military service, and more?" If higher education organizations do not offer a Credit for Prior Learning (CPL) program, the answer is that they don't. But these adults can, and should, if CPL programs are developed and designed with adult learning in mind.

In 2020 the Council for Adult and Experiential Learning (CAEL) and the Western Interstate Commission for Higher Education (WICHE) completed a study called Equity Paradoxes in the PLA [prior learning assessment] Boost—CAEL and WICHE Research (2021). The equity paradox stated, "Black and lower-income adult students receive strong boosts to credential completion for PLA/CPL credit—but they were the least likely to receive such credits." This paradox was the basis for the research project.

The report's findings show that Hispanic, Asian, Black, and white adult students had higher overall credential completion (degree or advanced learning) if they participated and received credit through a CPL program. The difference was not just a percentage point or two but 20 (Black), 30 (white and low income), and 50 (Hispanic) percentage points better than non-participating students of the same categories. In short, PLA/CPL programs increased students' ability to succeed.

We have never been more ready for a change in educational delivery that transforms the way we approach education for the millions of adults who want to work towards a degree but face a host of barriers. Institutions need to market their programs in a way that helps adult students understand they have a deep reservoir of experience to apply to new learning that will be invaluable as they move forward to gain the degree they want and need. They need improved policies and access for adult students' recruitment, retention, and degree completion and to recognize the importance of a skills-driven approach to degree completion for adult learners. Making a degree more affordable, more meaningful, and more impactful is now the direction many institutions are beginning to understand.

South Seattle College is a leader in this vision and has created a sustainable and extendable program. The South Seattle College Multi-Occupation in Engineering & Technology (MOET) Accelerated Pathway program provides an opportunity for students to enter technological STEM programs with existing skills and education but no degree. The MOET program allows students to earn an AAS-T degree in as little as six months by eliminating institutional barriers to the awarding of academic credit for prior learning for military and workplace experiences and training, providing high-touch student support, and centering equity in the program with a focus on recruiting and retaining historically underrepresented populations in STEM fields. The MOET program is a personalized, accelerated program that fills a demonstrated need for a seamless and accessible pathway for adult students and employers' need for a skilled workforce in STEM fields.

INTRODUCTION

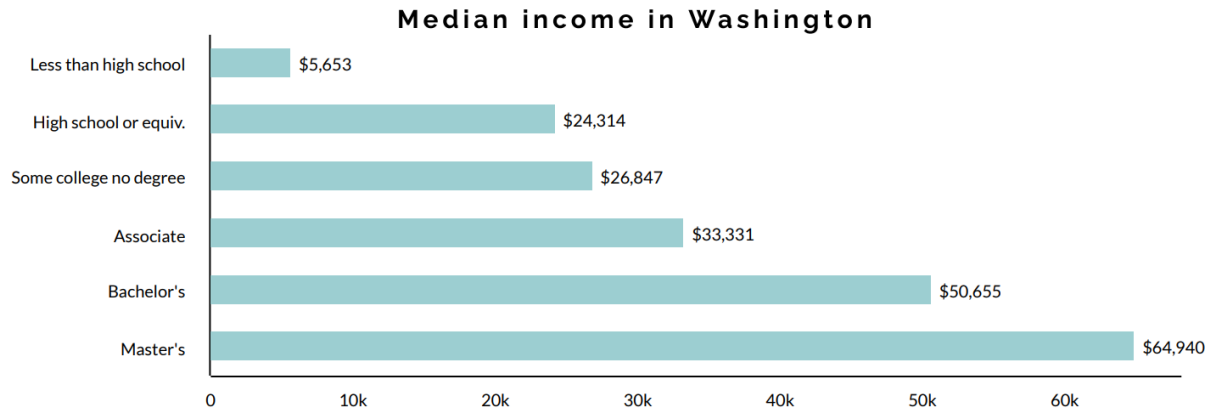
Need for Program

Students, especially working adults, bring high-end skills and abilities often overlooked within the academic world. These high-end skills and abilities relate to academic credit offerings, but many colleges do not grant students credit for what they already know, especially for specialization and/or program-level courses. Many colleges have developed some CPL options using national exams or course test-out exams, but few go to the depth that gives students full credit for their experience and provides pathways for adults to grow from worker to student in a standardized method. The South Seattle College MOET Accelerated Pathway program does just that.

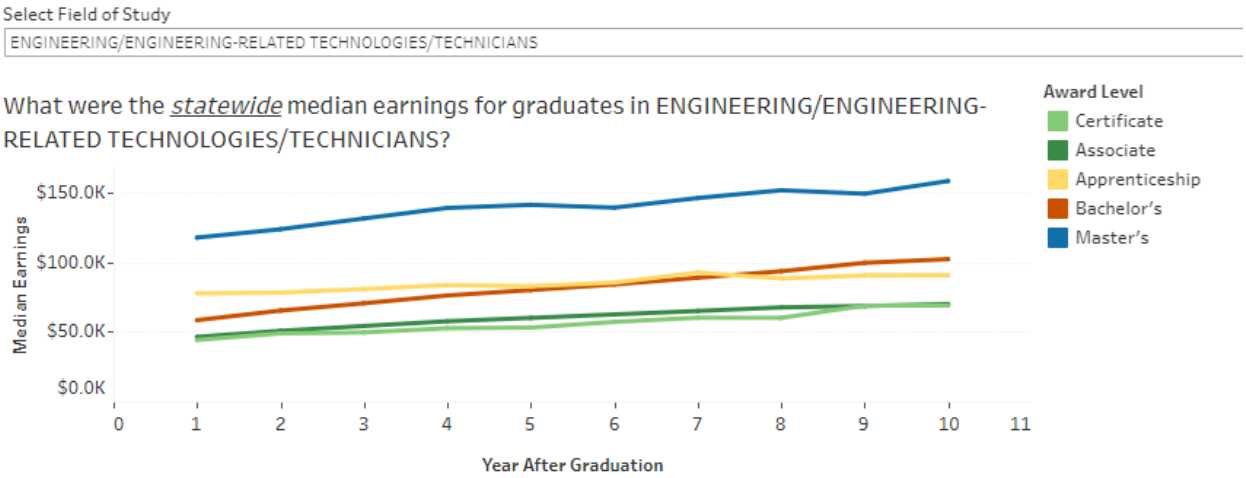
In 2012, the Study of the American Public's Opinion on Higher Education was completed to gauge the importance of postsecondary education. The survey asked 1,009 adults 18 or older about their feelings on higher education. Nearly all participants, 97 percent, said that having a degree or certificate beyond high school was at least important to a person's financial security. Two-thirds responded that getting a decent job was an important reason for getting an education beyond high school. For those that did not have a postsecondary degree or certificate, the majority agree or strongly agree that they would feel more secure if they had one, and of non-postsecondary adults, 41 percent of them said they thought about returning to school to earn a degree or certificate (Lumina Foundation, 2013).

The salaries of those that complete a post-secondary program, especially in a STEM (Science, Technology, Engineering, and Math) earn $5,000 (women) or $18,300 (men) eight years after graduation. (ERDC,

2021). Overall, the average increase is $13,000 over an eight-year period but starting salaries are $10,000 to $25,000 more than having just a high school degree with certifications.



From: Washington Equity Report Snapshot, 2020



From: Educational Research Data Center, WA 2021

Because of the salary gains with education attainment, many adults are looking to complete a college degree program so they can benefit from the increased earning of the degree. Degrees take time and funding and with many adults having previous qualifications, programs need to be developed that help adults with experience move forward faster and into higher level positions by allowing for credit for prior learning.

Students, especially working adults and military personnel and veterans, bring skills and abilities to an educational program that are often overlooked. South Seattle College has created a program that allows for knowledge, skills, abilities, and experiences to be combined with quality academic programming enabling students to move through their educational degree in a cost-effective and timely manner. This program leads to higher student satisfaction, increased student confidence, and higher retention and graduation rates.

Alison Pugh, Dean of the Math, Science, and Business at South Seattle College stated that one of the key problems that the MOET AAS-T program was asked to address was the inequity for Military credits and other on the job training that was previously never considered or not considered as much as it should be. "Students could maybe get 5 credits for 5 years of experience and their KSA's were never really reviewed. This is just not enough". This is a problem that many adults face with experience, certifications, and trainings they have completed but never were able to receive credit for that work. Receiving credit for prior learning (CPL) is critical in the MOET AAS-T degree program.

Similar to Dean Pugh, Maureen Shadair, MA - Executive Dean of South Seattle College, Georgetown Campus gave support to this project because of the holistic approach to adult students. Dean Shadair stated that "South Seattle College is big into apprenticeships, workforce development and military needs and the MOET program is a perfect solution to get these adult students into a AAS-T program." The MOET AAS-T degree is part of the 2 + 2 program, in which students complete an AAS-T degree and move into the Bachelor of Applied Sciences (BAS) Sustainable Building Science Technology (SBST) or other BAS degree. This allows students to complete a BAS degree while working full time using CPL, hands-on experience, and academic coursework.

Overview of MOET Accelerated Pathway Program

The Accelerated Pathways Program combines technical skills obtained through employment and training in an engineering/technology-related field and academic coursework. At the start of the MOET Accelerated Pathway Program, all students are enrolled in a 10-week professional portfolio development course used to document, verify, and validate experiences, knowledge, and skills. A trained instructor leads this course. The professional portfolio organizes work experience from an engineering/technology field into a document that includes a personal narrative, educational and career goals, resume, transcripts, learning narrative and documentation of accomplishments, performance evaluations, work samples, certifications, and more. The experience of developing the portfolio instills the students with the confidence that they can advance far beyond their original expectations and provides a tool to validate their experience and training.

Students must have at least 6,000 clock hours (three years of full-time work experience), which translates into 20 college credits awarded through portfolio assessment.

MOET AAS-T Program Area	Credit (90)
6,000 hours of certified on the job work experience—CPL Portfolio Credits	20 college credits
360 hours of certified related training in occupational safety & health, engineering & technology, operations & management, Military, and Industry—CPL Crosswalks	36 college credits
MOET Orientation Introduction: five modules, including Digital Literacy, Resources for the Classroom, Career Pathways and Development, Guide to Success at Seattle Colleges and Portfolio Development	5 credits

MOET Capstone in Engineering & Technology	4 credits
General Education	25 credits

There is also a minimum of 360 hours of technical training certified by an employer, recognized corporate education provider (e.g., NIMS), industry certifications, technical college courses, or the military, which translates into 36 college credits awarded through extra-institutional learning. A total of 56 college credits can be earned through CPL.

The completion of 25 credit hours of general education is also required. The general education courses for the AAS-T are ENGL101, CMST220, MATH107, PSYC100, or SOC101, and completion of at least one college-level Natural World course. Students must complete 90 credits of instruction to receive the AAS-T degree.

BACKGROUND

Previous Grant Findings

The MOET AAS-T program was developed in response to summary findings from a previous NSF Expanding Lifelong STEM Career Pathways in Sustainable Building Science Technology grant. This grant developed a first-of-its-kind curriculum that incorporates emerging scientific, policy, technical, and managerial skills required of operators and managers of sustainable buildings. With the help of industry and Washington State University, the College created a 17-course BAS degree in SBST.

The grant partners employed a carefully crafted series of andragogical (adult learner theory) and student services techniques and strategies proven to ensure student success. These include a formal system for assessing and awarding CPL; developing 15 different articulation agreements with partner schools to ease career pathways, including supporting students from as far away as Bellingham, WA, to Eugene, OR; a cohort delivery model designed to ensure student persistence; and hybrid delivery mode that combines online and weekend classes to accommodate the high number of underrepresented and non-traditional students. These efforts have contributed to an 81 percent persistence rate, compared to South Seattle College's average persistence rate of 76 percent.

The SBST program won the 2017 Energy/Facilities Innovation Award presented by the Northwest Energy Efficiency Council and Washington State University's Energy Program and recognizes South Seattle College's innovative approach to training facility managers who specialize in running "smart," energy-efficient buildings.

Lessons Learned and Opportunities for Further Development

In working with the variety of stakeholders necessary to develop the BAS degree in SBST, the partners identified three key lessons. First, employers have impressed upon their partners that the industry remains dynamic and rapidly evolving. Such rapid changes underline the benefits of integrating authentic field experience in the curriculum to expose students to realistic and up-to-date problems and practices.

Second, the partners have been impressed with the diversity of students interested in pursuing this STEM field and note that such a breadth of student population contributes to economic and societal goals to employ populations reflective of the broader community. The college should continue to expand non-traditional offerings to recruit and retain populations historically underrepresented in STEM fields.

Third, incumbent workers seeking professional advancement make up most students in the BAS program. There is a need to further develop the system of assessing and awarding CPL for those without associate degrees and to build such recognition into regular practice by faculty. This finding was the basis for the MOET AAS-T Accelerated Pathways Program.

Additional Support—Workforce Trends

U.S. Bureau of Labor Statistics

According to the U.S. Bureau of Labor Statistics (2022), STEM employment nationally is projected to grow at a 13 percent rate year over year with over 200,000 job openings from 2012 to 2022 already (p. 6). The types of STEM positions making up the increase are software engineers, building technology, construction services, utilities, and renewal energy. Wind turbine service technicians are projected to see a 68.2 percent increase from 2020 to 2030.

In May 2021, the Seattle's Energy Efficient Building Operations and Construction Industries Workforce Report was released. Emerald Cities and Seattle City Light commissioned this initial report to assess the state of the construction and building operations workforce.

The report found the following:

1. There is a lack of diversity in the workforce, with most workers being white and male. Training programs are overwhelmed by the number of students from the target populations and need help serving their educational and training needs.
2. Apprenticeship programs are extremely valuable and need to be expanded.
3. Construction and building operations sectors continue to grow and account for over 22 percent of the overall trade sector jobs.

Washington State Department of Commerce

The Washington State Department of Commerce created the 2021 State Energy Strategy offering a blueprint of how the State can "nearly eliminate the use of climate-threatening fossil fuels while continuing to maintain and grow a prosperous economy" (Brown, 2021). This report discusses and outlines a framework for creating a sustainable clean energy economy. Key actions are also outlined in areas of communities, transportation, buildings, industry, and electricity, as each plays a role in the goals of the State Energy Strategy.

The key points related to the need for Accelerated Pathway Programs are:

1. There are 11 times more clean energy jobs in Washington State than fossil fuel jobs and that will only increase over time (p. 106).
2. Clean energy jobs tend to have a higher, more equitable wage so workforce development must be a priority (p. 106).
3. The transition to clean energy will accelerate the need for a greater workforce outside of the current areas and across the State. Training and education programs must provide flexibility and innovative solutions to reach rural Washington workers (p. 111).

Reviewing the outcomes from the Career Pathways Grant, the needs identified by the U.S. Bureau of Labor Statistics, the focus of the State of Washington's Energy Strategy, and other industry and academic support, it was determined that an associate-level accelerated program was needed.

SOLUTION: ACCELERATED PATHWAY PROGRAM

Overview

Using information from the previous grant and insights from data reports and industry leaders, South Seattle College created the MOET AAS-T, Accelerated Pathways Program. This program prepares students both for employment and promotion in STEM fields as well as for entry into applied baccalaureate degree programs.

Industry analysis demonstrates continued high demand in the Seattle metro area for STEM professionals with work and educational experience. The MOET Accelerated Pathway program provides students with an individual review of experiences, trainings, knowledge, and skills through an intensive portfolio review and extra-institutional learning as part of their CPL program.

MOET Accelerated Pathway Program

The MOET AAS-T degree was designed to fit active U.S. military service members, veterans, as well as working adults without a degree. The recognition of the formal training and/or certifications makes this program flexible for the individual student. The goal remains allowing students to earn a degree in as little as six months while maintaining the rigor and quality of the program.

There are three phases to the MOET Accelerated Pathway Program. First, South Seattle College reviews and validates incoming students' work experience. Students with a minimum of 6,000 validated work hours in an engineering/technology-related field are eligible for the degree. Each student completes a CPL occupational portfolio that records all previous or current training, education, experiences, and skills. This portfolio is reviewed and validated by faculty members and students are awarded 20 on-the-job training (OJT) credits. American Council on Education (ACE) credits earned through military experience can also be awarded for these 20 OJT credits.

Second, South Seattle college reviews and validates incoming students training documentation, including industry certifications, technical college courses, joint services transcripts, industry/corporate education, continuing education, and apprenticeship courses outside of Washington state. The training content and outcomes are crosswalked into three courses: MOET 201 Occupational Safety & Health, MOET 202 Engineering & Technology, and MOET 203 Operations & Management. Students can earn 36 occupational training credits from these CPL crosswalks.

Finally, students complete five general studies courses, an orientation course with five modules, and a hands-on capstone to complete the program. Throughout the program, students can demonstrate both applied and theoretical knowledge related to engineering and technology, and the value of teamwork and diversity.

MOET AAS-T Course Descriptions

MOET 101: Orientation: In this five-module course, students orient themselves to the program and college. Modules include Digital Literacy, Resources for the Classroom, Career Pathways and Development, Guide to Success at Seattle Colleges, and Portfolio Development. This course helps set the student up for continued success throughout the program. Portfolio development is a critical component of the orientation course.

General Education: Students in the program are required to meet the general education requirements of the degree. This includes composition, math and society, oral communications, psychology/sociology, and natural world science.

MOET 100 On-the-Job Training: This course recognizes the OJT portion of the MOET degree. Credit is evaluated based on a portfolio developed documenting 6,000 hours (three years) of related industry OJT. This course is also used to assess students' competencies in communications, human relations, critical thinking, personal responsibility, information literacy, and technology.

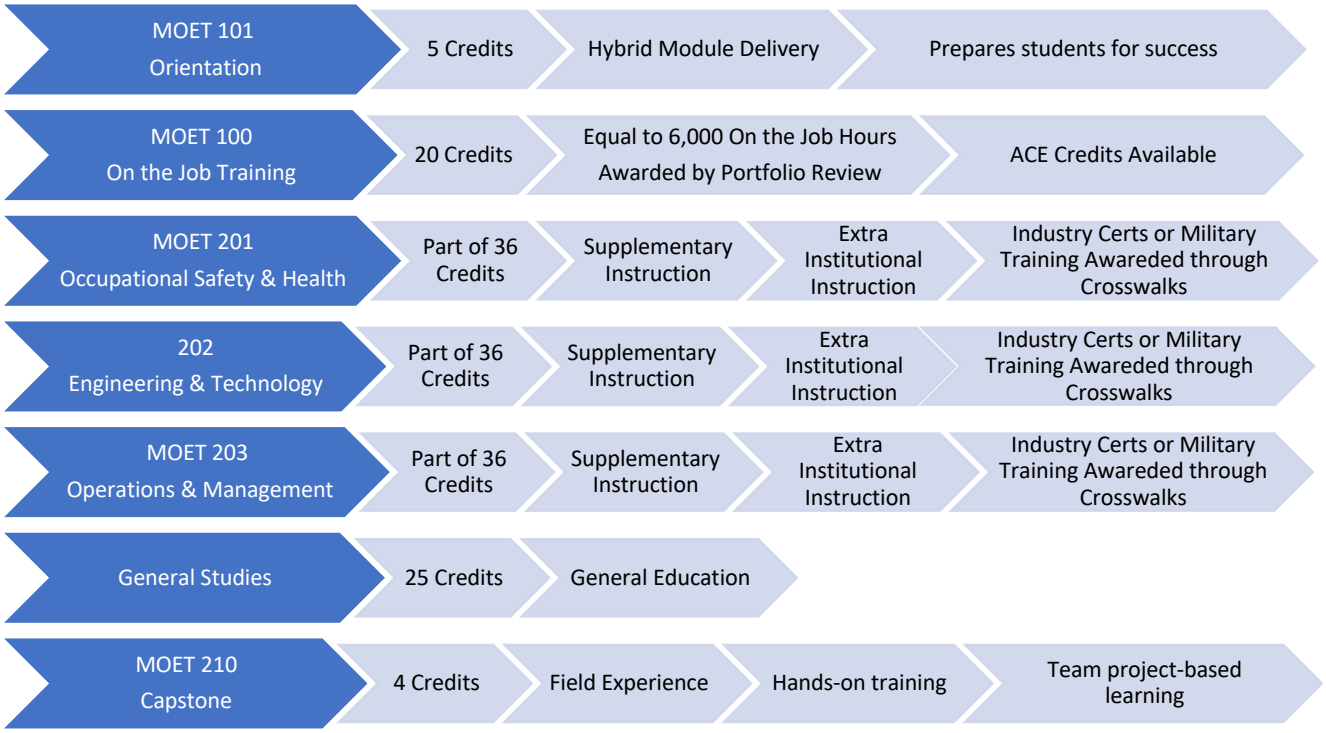
MOET 201 Occupational Safety & Environmental Health: This course documents the related supplemental instruction portion for skills learned in protecting human health and environmental systems through procedures relating to job safety and material management.

MOET 202 Engineering and Technology: This course documents the related supplemental instruction for skills learned in applied disciplines including electronics, mechanical, facilities, and computer software and hardware.

MOET 203 Operations & Management: This course documents the related supplemental instruction for skills related to accounting, human relations, administration, and management. Students also need to demonstrate their understanding of fundamental operations and management concepts and explain the role of ethics in business, management and/or leadership.

MOET 210 Capstone in Engineering & Technology: Using project-based learning, students work in teams to solve contemporary problems at the intersection of engineering, technology, and sustainability. For each course, faculty present students with a specific project where they organize as a team to define outcomes and roles and work collaboratively to provide a set of tangible deliverables. Students build skills in team communication, project management, and sustainability reporting while working hands-on to build on their existing skills and provide an example of their ability to connect practice and measurable sustainability outcomes.

MOET ACCELERATED PATHWAY PROGRAM COURSE SEQUENCE



If we look at this program from the student's perspective, their experiences and training fit into the Accelerated Pathway.

Student Example 1—Military Veteran, Kyle

Kyle is a student as well as a Navy veteran with four years of service. During his time in the Navy, he completed military training courses in electronics and was a Seaman SN and Electronics Technician (Surface) ET3.

South reviewed Kyle's Joint Services Transcripts (JST) and crosswalked his ACE-recommended credits for the military courses he took, including Electronics Technician Apprenticeship training, Electronics Technician A School, and Microminiature Electronics Repair to MOET 201, 202, and 203 courses. He earned 36 academic credits through these crosswalked courses.

Kyle's OJT occurred in his work as Seaman and Electronics Technician (Surface) ET3 in the Navy. A faculty review of his OJT verified by ACE was crosswalked to the learning outcomes of MOET 100 for 20 credits.

Kyle completed the five MOET 101 orientation modules and his five general education requirements online and completed the MOET 210 Capstone course last summer. Kyle also co-enrolled in the SBST BAS program while completing the MOET degree. Attending part time with 12 credit hours per quarter, Kyle received his MOET AAS-T in one year and will complete his SBST BAS this year as well. According to Kyle, "Without the credits for prior learning, my education path could have taken much longer to the point where my GI Bill may not have covered the full cost of my education. With ACPL [academic credit for prior learning] applied and my degree fast-tracked, I was able to finish both degrees with GI Bill funds left over for future education opportunities."

Student Example 2—Operations and Management, Rebecca

Rebecca had all the OJT hours required when she joined the program but did not have all the industry training hours required. Her previous work was evaluated, and an individualized plan was created to meet the industry training requirements of the degree.

Rebecca's training plan was developed to advance her career in operations and management in manufacturing environments. She recently worked for several manufacturing companies and received training in Root Cause Analysis, Scrap Parts in RMS, General Ledger Dimensions, Customer Relation Management, forklift safety, and over 170 additional training hours. These trainings were documented, assessed, and crosswalked into MOET 201, 202, and 203. Rebecca also took a few college courses in engineering and business to round out her training credits.

Her industry training related to occupational safety and health, and engineering and technology, as well as her college courses related to operations and management translated into the 36 training credits required for the MOET program. Rebecca was working full-time while she completed the MOET. She did not desire to go into the BAS program but concentrated her efforts on Operations and Management, using the MOET AAS-T degree as a building block for her future.

Student Example 3—High-Level Welder, Steven

Steven came to the program with a history of difficulty in his previous attempts at college. His support from the Accessibility office has been crucial to his ability to complete the SBST and the MOET programs. Steven entered the MOET program with a high-level welding certification that was crosswalked to South Seattle College's welding courses. From 2018 to 2020, Steve passed every aspect of the AWS—Inspection Specialist program. Steven also brought in training hours from the University of Washington's training system for employees working in facilities. Between the training hours crosswalked into MOET 201, 202, and 203, and his welding course hours, he met the 360-hour training requirement.

Steven's work experience at the University of Washington in the facilities department provided a broad range of skill development and success that helped him complete his portfolio and gain the deserved credit.

Steven co-enrolled in the SBST BAS and the MOET AAS-T programs. He completed the MOET in a year while working full time and taking both SBST and MOET degree requirements. He is graduating from the SBST program this year as well! The ability to earn academic credit for his work experience and training was critical to his completing both degrees.

Program Success and Results

The MOET Accelerated Pathways Program is successful because of the student focus given throughout all stages of development and delivery. Understanding that a student's past and present experiences and skills play a vital role in their education continues to be at the heart of the program and why it is successful.

This program helps students understand how their experience ties to academic credit and provides them with a facilitated and standardized method to tell their individual story (MOET 101 Orientation with Portfolio Development). Having at least three years of work or military experience and 360 hours of training in the three critical areas of safety and health, engineering and technology, and operations and management (MOET 201, 202, 203) helps students move quickly through the program but helps them understand the importance of the work they have already done. Finally, students gain additional skills and

knowledge by completing the general studies and Capstone Project to successfully complete the AAS-T and transfer into a BAS degree.

Data collected from students throughout their program show the success of knowledge building, confidence in their ability to succeed, and the importance of credit for prior learning as a tool within the MOET program.

Institutional Change

The development of the MOET AAS-T degree required close collaboration between the credential evaluation team and academic deans to ensure the methods for awarding CPL were robust, would meet accreditation standards, and reduce barriers to degree completion for students with military and industry work experience and training.

The MOET program took close to two years to develop and implement at the college. The program team worked with the credential evaluation office, registration, advising, and deans for over a year to develop a process for evaluating and conferring the MOET degree.

Through this work, processes were developed to clarify the intent of the degree for advisors, screen potential students to determine whether they should be referred to the MOET degree path, and create a standardized method for recording OJT and RSI/training credits on a student's transcript.

The use of portfolio to award CPL for work experience was well developed at the college, with an established process for documenting and awarding credit. The awarding of CPL for industry training and certifications and other non-traditional learning (RSI) through extra-institutional instruction crosswalk was not well developed.

To meet this challenge, three courses were developed to crosswalk the non-traditional learning from industry and military training for skills in Occupational Safety and Health (MOET 201), Engineering and Technology (MOET 201), and Operations and Management (MOET 203). A process was created to validate this learning through ACE work experience and training credits for military students with JSTs, and through industry training providers and industry certifications for incumbent workers. These work and training credits are then crosswalked into the appropriate MOET course.

The MOET program team developed an application to submit to the credentials office that includes the type of training documentation and the credits awarded in each course area, with at least six quarter credits in each course area. All backup documentation is kept in the student's program file. Credits earned in MOET 201, 202, and 203 appear on the student's transcript under Academic Credit for Prior Learning.

The team also created degree pathways for students previously enrolled in non-regionally accredited institutions like ITT, Art Institute, and DeVry, breaking through what had been a barrier to completion. The process developed for evaluating technical training credits was applied to technical courses taken at these institutions using official transcripts, course descriptions, and learning outcomes crosswalked to MOET 201, 202, and 203.

Through both the MOT and MOET associate degrees, South Seattle College has removed barriers and provided a more equitable pathway for students with apprenticeship, military or industry experience, and training by recognizing their work experience and formal training or certifications into academic credit.

Accepting CPL as a valid and robust learning assessment gives students a stepping stone towards several BAS degrees and career advancement.

Template for Statewide change

The MOET program has raised the question of how we can best serve adult learners at our institution. Typically, the focus of outreach and recruitment has been on high school students when the data shows that the average age of students at the institution is 31. Additionally, according to the Washington Student Achievement Council report in 2015, over one-fifth of those aged 17–54 have some college but no degree and are not currently enrolled. Despite this data and these findings, there is little focus on outreach and recruitment to this population.

The MOET degree was developed specifically for an adult population looking to come back to college to advance their career with experience in engineering and technology-related fields. The one-fifth of adults with some college but no degree often has many years of work experience and have participated in non-traditional training related to their work. The MOET program provides an equity-based blueprint for validating work experience and training to either earn an associate degree or advance to a BAS degree to unlock career potential for adult learners. The opportunity for extending this type of degree in additional occupational areas will provide a flexible, equitable, accelerated degree pathway that can serve the needs of working adults.

To broaden the impact of the MOET program and advance accelerated STEM degree programs, the team has engaged with statewide stakeholders, including the BAS Leadership Council (BLC), Washington Council on Engineering & Technical Education (WCERTE), and the Washington Student Achievement Council's (WSAC) CPL Workgroup.

At a summer workshop with participants from BLC and WCERTE, the following findings were identified:

- The value proposition for accelerated degrees, both in terms of prior learning assessment and developing specific degrees in BAS feeders, is not yet fully developed.
- Improving awareness of the opportunity provided by CPL is needed at the student and institutional level. This is one element that can improve student equity.
- CPL standards are currently at the program or department level. Better guidance with support from stakeholders statewide would improve consistency.

After the workshop, the team met with additional stakeholders to share key findings and investigate the most tangible next steps. These meetings, as well as information gleaned from the workshops, led us to propose these follow-ups to advance CPL across the state:

- Propose CPL development is advanced via Communities of Practice within BLC, focusing on Cybersecurity and Administrative Management BAS programs offered at multiple colleges across the state. Working in a Community of Practice, an accelerated degree pathway could be developed for students with work experience and training related to those degrees.
- Support creating a workgroup within WCERTE to forward CPL, particularly focusing on the statewide BAS program.
- Support WSAC's CPL workgroup through a contract with CAEL to develop a CPL toolkit to serve as a knowledge repository and best practice guide across the state that is user friendly and practical, based on current policy, with templates and examples that build on resources in an existing

handbook, provides a framework or action flowchart for faculty, and a framework for institutions to advance CPL campus-wide by stressing the value of CPL to multiple audiences.

Another component of the effort to expand the use of CPL as a tool to accelerate degree pathways statewide and is a part of the work with CAEL and WSAC's CPL Workgroup is to develop a Logic Model. This guiding document will connect strategy and the toolkit and serves as a repository for ideas that require change outside of existing policy and next steps for advancing equitable degree acceleration in Washington State through legislative support to improve equity for adult learners.

Literature Connection

CAEL's 10 Principles for Effectively Serving Adults

The development of the MOET AAS-T program is grounded in the principles of serving adult learners. CAEL has a list of 10 principles that serve as a guide to effectively serving adults.

The first principle is Adaptivity. Institutions need to adapt to the changing expectations and needs of external and internal stakeholders, students, and employers. The MOET program adapted the program to include advancing access to underserved populations and adults with some experience or training and just needed a way to expand that experience and training into a degree.

The second principle is Assessment of Learning Outcomes. Adult students come to the MOET program with over 6,000 hours of work experience and 360 hours of certified training or education. This includes military training, certifications, OJT, and previous coursework. This allows students to see how their life and work experiences tie directly to the program outcomes.

The next set of principles, Financing, Life and Career Planning, and Outreach, are all about removing and overcoming the barriers of time, funding, and events that derail educational success. The MOET AAS-T Program has support systems from entry to graduation to help support students in all aspects of need.

Technology, Student Success Systems, and Teaching-Learning Process are part of the program by providing hands-on and enhanced learning experiences using technology and real-life situations to teach knowledge and apply learning. The Teaching-Learning Process includes experiential and problem-based methods to connect curricular concepts with knowledge and skills needed in the industry.

Finally, the creation of strategic partnerships from industry, communities, military services, and other higher education institutions allows students to gain access to advancements at their current position through the support pathways of the MOET program. Students find ways to transition from educational goals to career goals.

The use of solid principles with innovative ideas and partnerships makes the MOET AAS-T program both unique and powerful in changing how education is viewed for adult learners.

Annual Survey and Program Review

As mentioned earlier, the MOET program is part of an NSF grant, Aligning Students into Accelerated Pathways. The grant requires that an annual evaluation be performed to ensure the goals of the grant are met. The program team meets with the evaluator monthly to review the grant's project management and implementation, to what extent the grant project is meeting its outcomes, and to identify areas for improvement and/or further development. The most recent evaluation report states:

"During year three, the team recruited its first cohort of students; institutionalized processes for intake, assessment, and evaluation; and forged new partnerships to advance the concept of accelerated degrees to create more STEM pathways. This is a major milestone for this grant and marks the movement of PLA from the idea phase (where it resided for many years prior to this grant) to the implementation phase. The successful navigation of the systems and the accreditation and faculty committees at South Seattle College opens the door to others who want to implement this in the Seattle Colleges District and colleges across the state."

An annual student survey is conducted to ensure the program meets students' needs, preparing them for career advancement and/or further education, and to understand the student population better. Of the respondents, 85 percent said the Orientation and Capstone courses are quite or particularly useful for preparing them to be successful at South Seattle, and 100 percent said the availability of CPL from work and training was quite or particularly important to their success. We also learned about improvements we could make. Additional results below.

Student Demographics

The MOET program seeks to serve underserved populations, emphasizing people of color, women, and veterans. The program started in Winter 2021 with seven students. By 2022 enrollment grew to 19, with five graduating in spring 2022. Out of the 19 students, 15 remain, with 6 co-enrolled in SBST. Like all higher education programs, some do not or cannot stick with the program. Of those that have left the program, the reasons include difficulty balancing full-time work, family, and school; a lack of resources; and personal circumstances that got in the way of educational success. More data will be available as the program continues to see solid growth.

A breakdown of the 19 students provides additional information. The program has served 16 men and 3 women. Although most students (12) report as white, seven report as persons of color, including African American/Black, Hispanic, Native American, and Pacific Islander.

The MOET program is also aimed at serving military veterans. Seven of the 19 students, 37 percent, are military veterans. Students with military experience earned full credits in MOET 201, 202, and 203 with over 193 ACE credit training credits.

Students with no military credit but working in the industry gained 288 academic credits for MOET 201, 202, and 203 through verifiable industry training, certifications, and technical college courses previously completed. This industry-specific review allowed students to move forward in their program without having to take classes on topics they already know.

The final data point to discuss is the location of students. Although the program is part of the South Seattle College offerings, five of the 19 students come from out of state or were not local to Seattle. Students come from Seattle (local), Guam, New Orleans, Montana, and the east side of Washington—Spokane and Ellensburg. Having an online program allows students from around the world to participate and gain their degree.

Demographic information is helpful, but it does not always tell the full story. Knowing that students are coming from the University of Washington, ATS Automation, CenturyLink, Boeing, and different construction industries is great, but even that does not tell the full story of success. Student feedback and student comments help complete that story.

Student Survey and Feedback

In a recent pre-post student survey, students were asked to provide insight into how they say their knowledge, skills, ability, and confidence changed while in the program. Across the board, all students reported an increase in knowledge and skills. The most surprising finding was that students' confidence in their ability to advance in their career by being part of this program increased from 53 percent to 78 percent confident. The results also showed a 25 percent increase in students' understanding that they can continue to advance and be successful in education and careers.

Level of Confidence—Student Feedback

MOET AAS-T Level of Confidence		
Description	**Before Program**	**After Program**
Ability to pursue a baccalaureate degree	51%	76%
Confidence in ability to advance my career	53%	78%

Because a program is only as good as the impact on students, it is important to hear directly from students about the impact of the program. The following is based on interviews with students who have completed or are in the final months of completing the program.

We asked students to provide feedback on several aspects of the MOET program that are instrumental in making this a unique and innovative program. Their feedback provides us with the success stories that will continue to make this program successful.

Question area: Impact of recognizing prior learning and work experience

Student 1 said that she felt that the resources and information given was clear and the ability to use her prior job experiences and education helped her fit right in with the curriculum presented. She stated that most colleges look at education like a business, wherein more students mean more revenue, but this program was different. The student stated, "The process [CPL] was not easy, and I had to provide a lot of transcripts and proof," but, "As a working adult in a competitive company, time is very precious. Having a program understands that prior knowledge and experience equal competency is refreshing." She also stated that "recognition of prior learning and work experience is the sole purpose of joining the MOET program" and "without the credit for prior learning option, I would have not enrolled in this program."

Student 2 said that he knew little about CPL prior to coming to South Seattle College, but it "heavily influenced my decision to join the MOET program." His experience in the military and working in building controls services provided him a direct avenue to gain credit through his JST and work experience. He stated, "Before my enrollment, I was vaguely aware of the process of credit for prior learning. This is a major selling point in military recruitment. Without the credits for prior learning, my education path could have taken much longer to the point where my GI Bill may not have covered the full cost of my education. I was able to finish my degree with GI Bill funds left over for future educational opportunities."

Student 3 stated that credit for training and experience was a big reason to join the MOET program. With the PLA process, he was able to have his eligible training and work experience recognized for equivalent academic credit. He explained, "Most of my credit came from my 6G pipe welding certification, work

safety training, and my licenses and certifications previously earned." These credits aligned to the 36 credits in MOET 201, 202, and 203 areas.

Question area: How important were the staff and interactions with the staff

Student 1 stated that the staff was accessible and approachable even before the start of the program, and that continued throughout the program. Student 2 had similar comments and went on to say that the South Seattle College professor was a mentor before he enrolled, and it was because of the outside encouragement that he became aware of the program. He stated, "Every staff member I have worked with so far, everyone has been incredibly helpful in making this education experience go smoothly." Student 3 added that with the resources, information, and "Steven and Judy to help," success was always within reach.

Question area: How has this program influenced your career or career choices

Student 1 said that her company was incredibly supportive of her enrollment in this program and paid for her textbooks and the cost of the program. She works for a company that encourages continued education and found out about this program through one of the company leaders. She now has a career vision that includes navigating into management at her current company. She feels a connection with them and looks forward to continuing with them. She also stated that she understands the need to learn computer application skills to be successful. She added, "I have shared with many colleagues and friends how wonderful this program is and emphasized that you can earn credit for work experience."

Student 2 stated that he is proud and finds value in his industry of building energy management. He would like to continue to climb the corporate later and implement changes in the workplace that facilitate smart energy management. He stated, "My vision has definitely changed since starting the program. I used to be content with being a technician; now I want to make bigger impacts." When asked if he had discussed the program with others, he stated, "I have actually encouraged multiple students…to explore the MOET program. I encouraged them to join because this program taught me so much more about what I actually do as a building controls technician. I learned not just how to control pieces but also why it is done that way. It opened my perception and gave me a better understanding of my professional environment." He also said that his previous supervisor did not want them to go into the MOET program as once they do, they are frequently promoted or get elevated roles in other companies.

Student 3 said he hopes to earn a bachelor's degree in Sustainable Building Science and continue to the master's program. "This program [MOET AAS-T] makes both of those hopes attainable in a reasonable amount of time." He stated that he was about the only one that knew about the program, even working at a local higher education institution but feels that leadership at his current organization would be and are incredibly supportive of this program as they worked to provide benefits to help cover some of the cost of the program.

Question area: Lessons Learning and Areas of Improvement

The students stated that they learned so much about skills they had no idea they needed. From computer applications and software to project management skills, the MOET program provided them with the knowledge and practice to be competent in all of it. They also both stated how they have a greater understanding of presenting their experiences through the detailed portfolio experience they had and how that experience and credit received was a deciding factor in signing up for this program.

For the areas of improvement, they wanted to see more student participation in assignments, feedback from professors, and an increase of other bachelor's degrees this program could transfer into. An example would be a transfer path from MOET to a bachelor's in business.

Student feedback like this is common in this program, and as the program continues to grow and see the successes additional, stories will be heard as well.

CONCLUSION

The question to answer is, “Why is this important?” As we have seen, and the data continues to highlight, there is a workforce crisis happening. Our traditional methods in higher education do not always provide non-traditional students with a program success structure, and CPL remains minimal and unmeaningful for many schools. Change is needed. Opportunities need to be created. Innovative options that still demand rigor and standards must be developed that meet the changing demands of the workforce.

Tomorrow's Workforce

It is no secret that most industries cannot find enough candidates, let alone the qualified candidates they need to do today’s work and implement tomorrow’s plans. They are challenged with growing and changing business structures and opportunities that were not even a thought 10 years ago. This is true for all industry sectors but even more so in the sustainable building science and technology area. Solar, wind, and waterpower are now a larger part of the conversation. Building materials, ecologic, social wellness, and economics are also part of the plan. All of these and more provide educators with a dilemma. Do we stay the course and do what we have done before, or do we create dynamic and innovative approaches to help solve the next generation of ideas? The answer really is simple—we must change our approach.

Changing higher education’s approach means to think creatively. There will always be a need for students to learn within a classroom structure. But not all students fit within this traditional structure, which is especially true for adult learners. To educate the current and future generations of workers, we must start to understand the value students bring to the educational realm. We must continue to build innovative programs, like the MOET AAS-T that allows students’ previous skills and abilities to count towards their educational coursework.

Innovative programs that create avenues to assess and credit student experiences and abilities are still not enough. Employees with past degrees and experience in a specific area may not have the skills to continue or advance in the new industry areas. This means that education needs to be a more fluid and flexible part of the whole that works alongside Federal, state, and local government; industry sectors; and other higher education institutions to create programs that meet the needs of all. Education must be as innovative as the industries we serve.

Finally, higher education institutions need to collaborate with industry and other higher education institutions to provide a seamless, accelerated pathway that moves students from no degree with work experience to an AAS-T degree with work experience to a BAS degree with career advancements.

Using the CAEL 10 Principles of Serving Adult Learners and following the implementation of those principles used to develop the MOET AAS-T program are ways forward for many institutions looking to help calm the storm.

The MOET AAS-T Accelerated Pathways Program has proven the success higher education can have on tomorrow’s workforce, and South Seattle College welcomes new innovators to join in their efforts. Creating similar programs or articulation agreements that provide students with additional options is always the goal.

Veronica Wade, Executive Dean of Workforce Instruction at South Seattle College discussed how the MOET AAS-T program is recognizing that people come from different backgrounds and can be part of the

program because of the highly individualized assessments and CPL options available. Wade states “When a program can take an individual and through CPL assessments develop a learning plan that incorporates past experiences and learning with future courses and plans, you have created a successful program.”

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