RECOGNITION OF PRIOR LEARNING IN THE 21ST CENTURY

Credit by Examination: Recognizing Learning and Supporting Adult Learners

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This brief is part of a broad landscape analysis focused on policy and practice issues related to the recognition of prior learning and is published by the Western Interstate Commission for Higher Education, with funding from Lumina Foundation and Strada Education Network. The landscape analysis focuses on issues arising in the practice of the recognition of prior learning, policies that encourage or limit its adoption, and key research needs and future directions for the field. To see the full series of briefs, as well as original research completed by the Council for Adult and Experiential Learning on the outcomes of PLA recipients, please visit wiche.edu/recognition-of-learning/.

Introduction

Credit by examination is a foundational practice of Prior Learning Assessment (PLA) that serves as a widely used and accessible form of awarding postsecondary credits for prior learning acquired both in and out of the classroom setting. These assessments have historically assessed students' knowledge of college-level subjects obtained prior to entering or re-entering postsecondary education. New research from the Council for Adult and Experiential Learning (CAEL) and the Western Interstate Commission for Higher Education (WICHE) found that more than 20 percent of students age 25 and older who received credit for prior learning did so through credit by examination.[1] This study also looked at the PLA usage and completion rates by individual PLA method. Students earned on average 16 credits from credit by examination.

Key Highlights of this Brief

- Credit by Examination is a foundational practice of prior learning assessment that is widely accessible and has the potential to be a powerful tool to supporting adult learners entering and re-entering postsecondary education
- College Board's CLEP exams and ACT's WorkKeys are two examples of exams providing college credit based on exam scores. And while there are significant differences between the exams, both have yielded positive outcomes for test takers.
- A robust evaluation of the CLEP program found those scoring above a 50 to have shorter time to degrees and higher post-credential earnings.
- Predominately used in the workforce setting, those completing WorkKeys and obtaining a National Career Readiness Certificate have seen positive workforce outcomes, such as higher earnings and higher rates of employment.
- More research is needed on both CLEP and WorkKeys usage to better inform PLA policies, particularly in how credit by examination can be used to better support adult learners.

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These students also graduated at higher rates than peers who did not earn PLA credits (71 percent vs. 18 percent completed at two-year public institutions and 55 percent vs. 31 percent completed at four-year public institutions).[2]

This brief summarizes the existing research on two distinct set of exams, College Board's College Level Examination Program (CLEP) and ACT's WorkKeys assessment. While these assessments, CLEP and WorkKeys, measure different skill sets – CLEP is a subject-specific exam of college-level material and WorkKeys is an assessment of foundational work-readiness skills – they both are used in assessing an individual's knowledge and skills and allow the test taker to document the skills and knowledge acquired, which are key components of recognizing learning that may take place outside of the formal classroom setting. In addition to reviewing the existing research on these exams and outcomes of students who participate in credit by examination, this brief offers considerations for future research to better understand the role of credit by examination in supporting student success and ways to promote data-informed decision-making that will better position credit by examination opportunities for students.[3]

The economic effects resulting from the COVID-19 pandemic led to skyrocketing unemployment claims in the spring of 2020, which has implications for both higher education and the workforce. In past recessions higher unemployment resulted in increased postsecondary enrollments, particularly at two-year institutions. And while the long-term implications of this economic crisis are yet to be determined, initial data suggests that undergraduate enrollment decreased in fall 2020, with the more substantial decreases occurring at public two-year institutions compared four-year institutions.[4] With that said, it remains apparent that there is a high number of displaced workers who may be looking to enter or re-enter higher education;[5] PLA can be a useful tool for supporting these students. As a fairly inexpensive and accessible way to obtain postsecondary credits, credit by examinations are situated as an opportunity to serve those displaced workers who have acquired workplace skills and experiences but are now looking to higher education as an opportunity to advance their education and/or obtain a credential. Additionally, credit by examination is a relatively quick way to obtain college credit, which could be an important

Types of Prior Learning Assessment

Many students – as well as potential students – have acquired a great deal of college-level knowledge and skills through their day-to-day lives outside of academia: from work experience, on-the-job training, formal corporate training, military training, volunteer work, self-study, and myriad other extra-institutional learning opportunities available through low-cost or no-cost online sources.

The process for recognizing and awarding credit for college-level learning acquired outside of the classroom is often referred to as Prior Learning Assessment (PLA). There are several ways students can demonstrate this learning and earn credit for it in college. The various partners involved in creating this series of briefs are examining different types of PLA and using the following general descriptions of the different methods.

- **Standardized examination:** Students can earn credit by successfully completing exams such as Advanced Placement (AP), College-Level Examination Program (CLEP), International Baccalaureate (IB), Excelsior exams (UExcel), DANTES Subject Standardized Tests (DSST), and others.
- **Faculty-developed challenge exam:** Students can earn credit for a specific course by taking a comprehensive examination developed by campus faculty.
- **Portfolio-based and other individualized assessment:** Students can earn credit by preparing a portfolio and/or demonstration of their learning from a variety of experiences and non-credit activities. Faculty then evaluate the student's portfolio and award credit as appropriate.
- **Evaluation of non-college programs:** Students can earn credit based on recommendations provided by the National College Credit Recommendation Service (NCCRS) and the American Council on Education (ACE) that conduct evaluations of training offered by employers or the military. Institutions also conduct their own review of programs, including coordinating with workforce development agencies and other training providers to develop crosswalks that map between external training/credentials and existing degree programs.

factor for adult learners who are looking to obtain a credential in a shortened period of time in order to re-enter the workforce. A better understanding of these exams and how they are utilized to advance student success can serve as a foundation for better implementation of credit by examination in order to meet the needs of students in the wake of the COVID-19 crisis.

CLEP Student Outcomes

College Board's CLEP exam has been used by students for 50 years and viewed as a foundational credit by examination and PLA practice. Research has found that CLEP is associated with positive student outcomes, with most of the research focusing on academic outcomes, such as degree or credential achievement. And while the existing research suggests that obtaining credit through CLEP exams is associated with positive student outcomes, there continue to be gaps in the research that would better support scaled-up credit by examination opportunities that yield positive outcomes across various student populations.

About CLEP

College Board's College Level-Examination Program (CLEP) was created over 50 years ago as a way to support students' ability to earn degrees efficiently and effectively by assessing prior knowledge of intro-level college course subjects acquired both in and out of a traditional classroom setting. Additionally, as a relatively low-cost option of obtaining college credit (each exam costs $89), CLEP is seen as an opportunity for students to save money and time while earning credits toward a degree or credential.[6] CLEP currently encompasses 34 exams across five subject areas (composition and literature, world languages, history and social sciences, science and mathematics, and business), and is accepted by 2,900 colleges and universities and administered at over 2,000 test centers.[7] Passing scores on CLEP exams typically translate to three or more credits earned by the student, with variation across institutions. Institutions determine their own CLEP policies allowing them to restrict credits earned from CLEP, limit the credits earned to specific courses in the curriculum, or accept a limited number of CLEP exams. Between 2008 and 2015 the most popular CLEP exam was the Spanish Language Exam followed by Analyzing and Interpreting Literature and College Algebra.[8]

Academic Outcomes

As previously stated, the purpose of CLEP exams is to support students in degree attainment and as such it can be expected that most of the research on CLEP is focused on the academic outcomes of those who obtain credit through CLEP exams. For example, a past study found that students who took CLEP exams had higher GPAs when compared to similar students who earned credit through an introductory course.[9] In a more recent comparison of outcomes between CLEP and non-CLEP students, it was found that CLEP students graduated earlier, enrolled in fewer semesters with fewer credits, and had higher GPAs, with more pronounced differences between CLEP and non-CLEP students found among those receiving associate degrees.[10]

Additionally, a robust evaluation of CLEP used a regression discontinuity design to evaluate CLEP impacts on student academic and financial outcomes.[11] This evaluation included all CLEP test-takers between 2008 and 2015 and the results were favorable for students who attained a CLEP score of 50 or higher. Similar to other research, the study found that CLEP was associated with positive academic outcomes, as CLEP students were more likely to graduate within 150 percent of time and had an increased probability of having a shorter time to degree. The results from the study also found that CLEP had an increased impact on degree completion among those students who obtained an associate's degree compared to bachelor's degrees, which was a similar finding to a previous study on the CLEP program.[12] The increased impact among associate degree holders is hypothesized to be due to the overall lower number of credits needed to complete this degree compared to bachelor's degrees.[13]

A more rigorous research method: regression discontinuity

Regression discontinuity design (RDD) is a quasi-experimental approach to estimating the impact of social programs. In practice a regression discontinuity design study, "applies to situations which candidates are selected for treatment based on whether their numeric rating or value falls above or below a determined threshold or cut-point."[14] This unique method of assignment is an advantage to the RDD by allowing for a more isolated view on the impacts of a specific program by limiting selection bias and limits the need assign individuals to a no-program comparison group like randomized experiments. In practice, the evaluation of CLEP discussed in this brief used a score of 50 as cut-off point to evaluate impacts among CLEP test takers as 50 is the common score associated with college credit eligibility.

Lastly, a recent study between CLEP test takers and dual credit students found positive associations between CLEP and postsecondary outcomes. For example, CLEP test takers who scored a 50 or above, which is the common score associated with college credit eligibility, had higher retention and graduation rates at four-year institutions compared to dual enrollment students and CLEP students at two-year institutions had higher transfer rates than dual enrollment students. These outcomes were also found to be true among first-generation and underrepresented minority students.[15]

Financial Outcomes

In addition to academic outcomes, the CLEP evaluation observed the impacts of CLEP across a series of financial measures, including estimated earnings, homeownership, total debt owed and debt delinquency, and student loans. The study found that those who attained a CLEP score of 50 earn, on average, about $1,200 more per year compared to those who did not attain a score of 50. Among other financial outcomes, there was no impact on the probability of being delinquent on any debt owed in the past year or on the size and delinquency of student loans; however, a small amount of reduction in debt owed was found among those who passed a CLEP exam ($47). Lastly, those who passed a CLEP exam with a score of 50 were one percentage point more likely to have a mortgage, the study's proxy for homeownership.[16]

Impacts of CLEP Across Subpopulations

There is little research on the accessibility of CLEP or difference in CLEP engagement across subpopulations as the CLEP evaluation study being the only one that explored differences in impact across student populations. The population who appeared to have the most positive increases in probability in degree completion were among military students.[17] Specifically, students with military affiliation had a 1.4 percentage point increase in likelihood of bachelor's degree completion and 4.4 percentage point increase in likelihood of associate degree completion, both higher than the probability of total students. It was also observed that military students had an increase in estimated income of $1,700, which also is above the observed increase for all students. Military students represent a unique population of students, as CLEP exam fees are waived for military students, and this study may suggest that subsidizing CLEP exams supports military students in obtaining degrees.[18]

Additionally, the CLEP evaluation observed the impact across racial and ethnic groups. Overall the results suggest that the impact on college completion among Hispanic and Black students attaining a CLEP score of 50 or higher was more pronounced than White and Asian students.[19] For example, the impact of scoring a 50 on a CLEP exam on degree completion was twice as large for Hispanic and Black students as for White and Asian students.[20]

Lastly, the evaluation identified impact on student outcomes for home-schooled students, which represents a group of students who are not often included in research studies. While this population is relatively small compared to the general population, recent changes in instructional models as a result of COVID could mean that the number of home-schooled students increases in the coming years. While there were no observed impacts among the financial measures, home-schooled students who attained a CLEP score of 50 had an increased probability of 2.3 percentage points in completing an associate degree.[21]

Future Research Considerations

The existing research on CLEP suggests that attaining a passing CLEP score has a positive impact on student academic outcomes, like GPA, time to degree, and degree completion, as well as financial outcomes such as post-degree earnings. Additionally, as found in the evaluative research, these impacts are more pronounced for underrepresented minorities and military students. These results support the notion that CLEP can help students access and complete postsecondary degrees. However, there remain gaps in the literature on CLEP that could be further explored through additional research and evaluation.

- **Further exploration of CLEP access and success across populations.** More recent research included impacts of CLEP across student populations, but there remain questions about how students are made aware of CLEP and how CLEP is accessed and utilized across subpopulations that could support ways in which CLEP is both designed and used by institutions in supporting success in postsecondary programs. For example, there is a gap in research on how CLEP participation differs across age groupings and if there are different impacts of CLEP across student age. There also only remains one research study that evaluated the impacts of CLEP across populations; potentially, a more focused evaluation could identify gaps in CLEP participation and success across student subpopulations.
- **Further exploration of CLEP usage.** There is currently a gap in the research on CLEP as it relates to how CLEP is used, both in terms of the point in time that students take a CLEP exam (i.e. prior to enrolling in a postsecondary institution or during postsecondary enrollment) and how CLEP credits are used by students. For example, there is no literature that differentiates between CLEP credits that are used toward general education requirements compared to those that are used toward major requirements. Further research on the usage of CLEP can help inform better ways to situate CLEP offerings to students in a way that promotes student success and credential attainment.
- **Employment Outcomes.** CLEP is used exclusively for providing credit for college-level subject matters and as a result the majority of research focuses on academic outcomes for test takers. However, as there are more aligned priorities related to college and career readiness, there is potential to better understand how CLEP impacts employment outcomes. Additionally, the findings related to CLEP exam takers being more pronounced among associate degrees than bachelor's degree may suggest that there is more opportunity to identify how CLEP could support vocational and trade education that requires lower time to degree or credential completion.

Overall CLEP has been found to have positive impacts for students, but there are still gaps in determining how CLEP supports students across populations, including race and ethnicity, age, and military status. Additionally, as CLEP policies vary across institutions, further analyses on institution type and specific institution policy could better support the development and implementation of CLEP policies that support student success.

WorkKeys

While College Board's CLEP exams represent one of the most widely used credit by examinations in assessing prior knowledge for college credit, ACT's WorkKeys assessments are the most widely used work readiness exams for employers and states.[22] They are a measurement of cognitive and non-cognitive foundational workplace skills that are used for an assortment of purposes in both employment selection and employee development.[23] The WorkKeys assessments are predominately used in the workforce setting and are not traditionally viewed within the postsecondary landscape of PLA. However, the core component of the exam is in assessing an individual's prior knowledge and allowing the test taker to document the skills they have acquired, which aligns with the core tenants of other credit by examination PLA programs as well as the broader push to recognize all types of learning. In addition to the role of WorkKeys within the workforce landscape, WorkKey's work-readiness certificate, National Career Readiness Certificate (NCRC) has been recommended to be used by postsecondary institutions in awarding college credit and the assessments have transitioned into being used by postsecondary stakeholders.

About National Career Readiness Certificate

The National Career Readiness Certificate was developed in 2006 and is considered "*a portable evidence-based credential that certifies achievement of foundational skills essential for workplace success.*"[24] There are currently four levels of the NCRC — Bronze, Silver, Gold, and Platinum — which are awarded based on the test takers' achievement of three WorkKeys assessments that are aligned with success in most jobs – Applied Mathematics, Locating Information, and Reading for Information.[25] The four levels of the NCRC as follows:

- Bronze: Signifies the individual scored at least a 3 on each of the three assessments.
- Silver: Signifies the individual scored at least a 4 on each of the three assessments.
- Gold: Signifies the individual scored at least a 5 on each of the three assessments.
- Platinum: Signifies the individual scored at least a 6 on each of the three assessments.

There are three main areas in which NCRC is used by employers, regional and state workforce boards, and schools:

- Hiring Process: Employers can use the ACT NCRC as a screening tool for prospective applicants in the hiring process by requesting NCRC along with traditional application materials so that employers can generate a qualified applicant pool for a job that has no NCRC threshold requirements.
- Employment Requirements: Employers can use the NCRC to make employment decisions by requiring a specific level of NCRC be obtained for a specific job.
- Document Work Readiness: States, workforce agencies, schools, and agencies can encourage test takers in using the ACT NCRC as a way to document their work readiness skills for potential career opportunities.[26]

All of these uses demonstrate the ways in which the NCRC, as an evidence-based credential, represents an individual's proficiency in foundational work-readiness skills and how employers and education stakeholders can use the NCRC as an assessment tool for workforce development and to address skills gaps in building a workforce that meets labor needs.

Awarding College Credit

Until recently WorkKeys and the NCRC were used exclusively in the workforce landscape as a way to support employees and employers in hiring and management decision-making. In 2012 the American Council on Education (ACE) made a recommendation that institutions award undergraduate credits in critical thinking for those who earn a Gold or Platinum level on the NCRC WorkKeys exam. In an evaluation of the NCRC in 2017, ACE put forth new recommendations that expanded the scope of receiving college credit for NCRC test takers.[27] These recommendations included:

- Vocational students who achieve a Silver NCRC receive one semester credit hour in quantitative analysis or introduction to organizational communication.
- Vocational students who achieve a Gold or Platinum NCRC receive two semester hours in applied mathematics.
- Undergraduate students attending two- or four-year institutions achieving a Gold or Platinum NCRC receive two semester hours in quantitative analysis or introduction to organizational communication.

The recommendations demonstrate the alignment between WorkKeys assessment of work readiness skills to academic disciplines found in postsecondary education. For example, WorkKeys assessments include skills such as basic skills, foundation skills, communication, adaptability, and group effectiveness, which have been found to be necessary for 21st century workplace success. The recommendations also align with the assessment in the areas of quantitative reasoning and analysis, which can be found across academic disciplines.

Outcomes of NCRC

The research landscape of NCRC is primarily focused on outcomes of NCRC recipients in relation to employment and job performance, and there is currently a gap in the literature as it relates to the postsecondary outcomes of students who obtain college credit through the NCRC. However, the breadth of research related to employee outcomes suggests that NCRC is a tool that is associated with positive outcomes for test takers and could yield successful outcomes for postsecondary students.

Wages and Income

In an analysis comparing populations with the same level of education, those with higher NCRC levels were found to have higher average incomes.[28] These results also found that higher NCRC levels correlated with higher earnings. For example, among those with some postsecondary education, Silver NCRC recipients earned, on average, $8,000 more than those who obtained Bronze level and those with a Gold or Platinum levels earned, on average, $5,500 more than those with a silver level. Additionally, a monograph of workers in Southwest Missouri found similar results, as annual earnings increased with each NCRC level achieved across all educational levels.[29]

NCRC and Credentials

Several recent studies have begun to identify ways in which WorkKeys assessments and the NCRC align with industry specific credentials. A recent study examined the role of the NCRC as a predictor of success on the Manufacturing Skill Standards Council's Certified Production Technician (CPT) program in Ohio found positive associations between WorkKeys scores and CPT scores.[30] These results are similar to a larger study that was previously conducted in Ohio that found higher pass rates on the CPT exam associated with higher WorkKeys scores.[31] The study in Ohio also found that individuals who held both a NCRC and CPT certificate had higher employment rates compared to those who did not earn both certificates.[32]

Future Considerations of WorkKeys

The breadth of research on WorkKeys and NCRC demonstrates that WorkKeys is a useful tool used by workforce and education stakeholders for assessing work-readiness skills; however, there are opportunities for future research that would focus on evaluating the impacts of obtaining an NCRC, WorkKeys role in supporting adults with no postsecondary credentials, and evaluating the outcomes of emerging role of NCRC in providing college credit.

- Evaluation of Impacts on NCRC. A current gap in the research of WorkKeys and the NCRC is the evaluation of the assessments as it pertains to the impacts of obtaining an NCRC on individual outcomes, both in postsecondary education and the workforce. For example, almost all the research compares across NCRC and WorkKeys scores, which do not take into account selection bias of those accessing the exam and does not isolate the impacts of the obtaining an NCRC on an individual's academic and employment outcomes. A similar evaluation of the WorkKeys assessments as the evaluative study conducted of CLEP test takers could identify target populations that would be best served by WorkKeys and NCRC and support education and workforce stakeholders in using WorkKeys as a tool that advances individual outcomes and addresses skills gaps.
- Role of WorkKeys in Supporting Adults with No Degree. The limited study of how NCRC supported displaced workers in Ohio's manufacturing industry suggests that NCRC could be a useful tool in supporting adults with no postsecondary degree or credential. This could be a valuable tool to boost recovery from the economic damage associated with COVID-19. Using ACT's data in partnership with a specific state's data system could identify how adults with no degree or credential have used WorkKeys to advance in employment, obtain a postsecondary credential, or enroll in a postsecondary program. Through the partnership with a state's workforce and /or education agency, ACT would be able to evaluate the role of NCRC in supporting the population of adults with no college degree both in employment and education.
- Outcomes of those who obtain credit. As a relatively new practice, there remains little to no research or literature on the outcomes of those who obtain college credit based on their NCRC achievement. Future research could explore both the academic outcomes for this population of students, but as WorkKeys more specifically aligns with career readiness, future research should seek to understand the employment, economic, and workforce outcomes of these students.

Considerations for Credit by Examination

The recent study conducted by CAEL and WICHE on prior learning accessibility and outcomes provides some context on students who have accessed standardized exams for credit within the PLA landscape. The results from the study provide a baseline for which students have utilized

standardized credit exams. For example, Hispanic students are more likely to utilize standardized exams and earn more credits through this method than other racial/ethnic groups.[33] Future analysis of credit by examination programs might help identify if there are specific exam subjects that are accessed differently by subpopulations of students and how credits accumulated through credit by examination differ across populations.

Credit by examination is viewed as an accessible form of PLA, which lends itself to be a useful PLA tool for adult students. Either of the two assessments discussed in this brief, CLEP or WorkKeys, as well as other forms of credit by examination such as DANTES, could be used to measure prior learning from adults who are entering or re-entering postsecondary education. For example, an adult who has been in the workplace for several years has probably acquired a subset of work-readiness skills that could result in the achievement of an NCRC and be awarded college credit. On the other hand, an adult who is re-entering postsecondary education could use CLEP exams to document specific subject matter knowledge that was acquired previously. The results from the CAEL-WICHE PLA study suggests that although standardized exams are one of the more popular forms of PLA accessed by students over 25 years old, the data do not suggest that adults students utilized standardized exams at rates higher than the overall population. Along with the future research identified in this brief, further analyses on use of standardized exams by adult learners could be used to support scaled up efforts of PLA and, specifically, credit by examination programs.

The current economic condition as a result of the COVID-19 crisis suggests that there will be more opportunities to engage displaced workers in postsecondary education. The limited research conducted on the role of NCRC supporting displaced workers suggests that credit by examination could be a useful PLA tool for displaced workers and adult learners who are looking to enter or re-enter postsecondary education in the current economic conditions. And while there is a high amount of uncertainty on what future postsecondary enrollment looks like, particularly for adult learners, it remains clear that supporting these students through accessible and efficient PLA opportunities is essential for their ability to obtain college credit for the knowledge and skills obtained outside of the classroom setting and make progress on achieving their postsecondary credential.

Conclusion

The existing research on credit by examination highlights the positive results among students who engage in this form of PLA; however, there remains an opportunity to expand the research on credit by examination in order to better identify the impact on student outcomes. More extensive research, focused on better understanding how different populations are served and how these exams impact outcomes, can help education and workforce stakeholders better use these programs to serve diverse populations and meet education and workforce goals. In addition to future research considerations, there is further opportunity to support adult learners through credit by examination and use these programs to support their ability to efficiently progress through postsecondary education.

Endnotes

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[3] It is important to note that the analysis of this brief does not extend to all credit by examination programs. For example, the DANTES Subject Standardized Tests and Excelsior College UExcel exams are two other popular forms for credit by examination and one area of future research could be to review existing literature across a more comprehensive portfolio of credit by examination.

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[11] A regression discontinuity design is a quasi-experimental study that studies effects of interventions by assigning a cutoff threshold and comparing those just above and below the cutoff score. In the Boatman et al. study, a cutoff score of 50 was used as the threshold to compare those who obtained college credit (a score of 50 or above) and those who did not obtain credit from CLEP (score below 50).

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About the Author

Colleen Falkenstern serves as a research analyst in WICHE's Policy Analysis and Research unit. In her role, she supports the development of WICHE's annual data resources — Regional Fact Book for Higher Education in the West, Benchmarks (of access and success), and Tuition and Fees in Public Higher Education in the West. She also provides analytical support for WICHE's quadrennial projections of high school graduates, Knocking at the College Door. She received a bachelor's degree in marketing and management from the University of South Carolina and a master's degree in higher education from the University of Denver.

About Lumina Foundation: Lumina Foundation is an independent, private foundation in Indianapolis that is committed to making opportunities for learning beyond high school available to all. Lumina envisions a system that is easy to navigate, delivers fair results, and meets the nation's need for talent through a broad range of credentials. Lumina's goal is to prepare people for informed citizenship and for success in a global economy. Learn more at luminafoundation.org.

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