Preface

THE NONTRADITIONAL STUDENT IS THE NORM

About 19.7 million people in the United States are enrolled in credit-bearing and degree-granting postsecondary education programs, with about 16.6 million of them in undergraduate programs and 3.1 million in post-baccalaureate programs (NCES, 2021a). However, only a fraction would be considered "traditional" college students: under 25 years old, enrolled fulltime in residential programs, working less than 10-12 hours per week, and dependent on someone else for their finances. Consider that:

- 60% of the 19.7 million are over the age of 25, working full time, or connected with the military (Soares et al., 2017).
- Less than two-thirds of the 19.7 million are enrolled fulltime (NCES, 2021b).
- And fully 70-80% of these students are active in the workforce—and dependent on that income—while enrolled (Carnevale et al., 2015).

Because "nontraditional" students make up such a large proportion of all postsecondary enrollees, the American Council on Education has advocated to replace "nontraditional" with "post-traditional." It has been decades since traditional students and their enrollment pattern have been the norm for students in postsecondary education in the U.S. (Soares et al., 2017). In fact, Clif Adelman (1999) discovered a pattern that began in the 1970s and 1980s which he called "swirling," in which more than half of all students who obtained their bachelor's degree received credits from more than one institution—a pattern that still persists (Peter et al., 2005).

And "post-traditionals" who "swirl" describes only those who are enrolled in higher education as degree seekers. Now add in all those who seek noncredit forms of training and education. Estimating noncredit enrollments is notoriously difficult, largely due to lack of standard definitions and reporting mechanisms (Erwin, 2019; Sykes et al., 2014). However, just to show one state's context, our own research in the State of Wisconsin estimates that, at any given time, *twice as many* adults ages 25-54 actively seek noncredit professional training as those that seek credit-bearing education (Fowler, 2018).

Taken together, it should surprise no one that the number of people seeking nontraditional forms of postsecondary education and training, who combine formal credit-bearing education and noncredit workforce-related training, far outstrips the number of people we typically think of as college students enrolled in traditional higher education. *The focus of this book is on the types of programs that serve these post-traditional learners.* We posit that adult learners are already mixing and matching different types and modalities of postsecondary learning, both formally and informally, and from traditional and

nontraditional providers of education and training. We propose that our field should embrace this mix-and-match model of lifelong educational engagement to better serve citizens of this country and around the world.

IS IT GOOD THAT PEOPLE ACTIVELY MIX-AND-MATCH HIGHER EDUCATION AND TRAINING?

Mixing-and-matching education and training programs, throughout one's life, we argue, is a smart and efficient response to an ever-changing workforce that requires continual reskilling and upskilling. From both inside and outside higher education, many are writing about the need to support people who continually collect—and bridge between—formal education and workforce training because that is what modern work and life requires (Hetrick et al., 2021). The Society for Human Resource Management (SHRM) finds that the challenge for businesses is often not innovation shortages, or even overall labor shortages, it is finding the right people to fill new and specific positions (Maurer, 2021). Lifelong mixing-and-matching of education and training is a reasonable and advantageous approach to reskill and upskill new and existing employees.

This is the behavior we have seen for at least a decade in our own work with working adults in the University of Wisconsin System: expanding the concept of swirling to include integrating different education-and-training products, mixing and matching one's education with noncredit certificates and workforce training, and doing so throughout one's life. It is completely normative for people to respond to workforce requirements by creating their own personalized bundle of content by combining one-off courses, degrees, for-credit minors, industry certifications, and boot camps to expand one's skillset (or sharpen existing ones). That unique combination of educational credentials that a learner has rebundled is displayed into portfolios (which we call "Comprehensive Learner Records" in this book) that are used to illustrate and showcase unique profiles of skills and experiences as the context warrants.

Institutions of higher education (IHEs) have made it hard for students to seamless combine learning from multiple sources into customized learning pathways. There are many reasons why IHEs have not evolved, or even adapted, to this behavior in their students (see for example, Johnson Bowles, 2022; Mintz, 2019). In this book, we consider positive, proactive change management strategies that can help institutions renegotiate persistent and historical barriers within IHEs. In fact, this book showcases examples from many institutions who are pioneering new, innovative models of higher education despite higher education's traditional resistance to change. This book focuses on how to embrace and actively promote a vision of higher education's future that puts at its center a learner's lifelong engagement with unbundled, skills-based education and training. This model supports people's agency to select, customize, and "rebundle" education and training experiences that fits their unique needs and enables their workforce competitiveness.

Unlike some, we do not view this vision of higher education's future as dismantling or dishonoring higher education's past (e.g. Young, 2022; see, too, the work of Kamenetz, 2010, who coined the term "DIY U" to describe an alternative to the failure of traditional higher education to meet needs in modern society). Nor do we view skills training as antithetical to personal and professional transformation. A skills-based vision of higher education—where students have choice and agency in their own education—need not be in conflict with a well-rounded liberal arts education. We advocate for well-designed

unbundled credit and noncredit programs that intentionally integrate traditional liberal education outcomes like critical thinking, data- and fact-based analysis, and good communication.

We do believe that forcing everyone into a one-size-fits-all, fulltime-and-out four-year degree is itself outdated (Hoffman et al., 2021). It is a model of education that was developed centuries ago when the world was very different, and was built to serve a small fraction of the population (Lefkowitz Horowitz, 1988; Thelin, 2019). But rather than calling for the wholesale replacement of the traditional academic degree, we instead call for a new, more comprehensive blended model of learning. Degree attainment within the academy should happily co-exist—and retain equal status with—non-degree driven training that millions of adult learners currently pursue for needed upskilling and reskilling. Silo-ing "education" from "training" artificially separates ways of learning and, as Adelman (2017) writes, leaves nontraditional providers of learning "out in the cold." Recognizing that the 21st century requires lifelong training and education for people to keep pace in an ever-changing world, all institutions involved in postsecondary education—whether centuries-old colleges or newly-launched EdTech companies—have an imperative to work together and collectively reconsider that neither traditional academic degrees nor traditional workforce training can meet the needs of the 21st century world without the other.

People's ability to customize their own education and training pathways illustrates a smart, cost-efficient, and accessible approach to lifelong education and training. Promoted correctly, using policies, practices, and recommendations discussed by chapters in this book, this mixing-and-matching model of education and training is the right model to embrace and lean into. It makes education and training accessible to working adults across the U.S. and the world because it adjusts to their lives versus the other way around. This approach holds the promise of making education and training a truly democratic endeavor.

But it is essential to emphasize a key point in the paragraph above: this model of higher education and training needs to be developed correctly. With no quality standards, this model of education and training can be exploitive. With no ability or even logic to help people "rebundle," they're left with a bag full of disconnected and disparate experiences. With no funding mechanisms to providing training and education beyond what one can afford as a purely personal good, societal inequities are not only maintained, but exaggerated. And with no thought towards the importance of a diverse ecosystem of education and training providers, monopolies will flourish and choke out future innovation.

THE FUTURE OF HIGHER EDUCATION IS ALREADY HERE: UNBUNDLED, REBUNDLED, CUSTOMIZED, AND DIY

We see this lifelong pursuit of customized, do-it-yourself (DIY), unbundled, and rebundled programming as the future of higher education, and we believe that it should be embraced by the higher education community—both within academe and outside of it. The more intentionally we can support this approach through better planning and design, the better outcomes for learners. Indeed, to say it is the *future* of higher education is a bit of a misnomer since this multimodal approach to postsecondary education is already being demanded by learners *today*. The institutions that thrive in the decades to come will be those that recognize this sea change is already upon us and take steps to design an ecosystem of educational programs and products that students have agency to customize to meet their lifelong needs.

That is what this edited volume is about: showing examples of how the higher education and training industry, both inside and outside IHEs, is *already* leaning into this mix-and-match model of lifelong education/training engagement. Institutions across the country (and indeed, the world) are *already* pro-

viding better unbundled opportunities that learners have agency to rebundle. Many are *already* developing policies and recommendations to make this vision of higher education and training even better by identifying pitfalls, blind spots, and future opportunities.

Our intent with this book is to illustrate a few things:

1. First, that activity is already taking place that supports this modern approach to education and training. Much of this work is taking place both inside IHEs and outside of it through the Education Technology (EdTech) industry.
2. Second, most of the work is homegrown—that is, individual companies, colleges or universities have developed tools and approaches that help their students or trainees. By bringing together many examples as chapters in this book, we hope to paint the bigger picture, like putting jigsaw puzzle pieces together to form the picture on the box.
3. And third, this customized unbundled/rebundled approach to education and training is certainly not without significant problems and even dangers. As a field leaning into this model of lifelong higher education and training, we should look with clear eyes at its shortcomings in order to make it better for individuals and society.

We have collected chapters that:

- Blur the lines between formal (i.e. academy) and informal (i.e. workforce training) learning in a way that recognizes and *validates* the complex and myriad ways that adults learn and master skills throughout their life.
- Point out the need to both address quality standards in noncredit offerings, and address the cacophony of these offerings in a way that balances learner agency with design intentionality.
- Provide guidance for federal, state, and institutional policies that fund and assist people as they pursue their education and training using this customized model.
- Illustrate both how people currently pull together their experiences into portfolios, and how the "comprehensive learner records" themselves *should* be designed.
- Argue IHEs should reframe their academic offerings into a skills framework to better and more deeply connect the academy and workforce—and provide tangible steps on how to do so.
- Show how credit can be awarded for noncredit and nonacademic activity. More specifically, our chapters go beyond making the case for "credit for prior learning" and make recommendations to scale the use of these tools.
- Lay out step-by-step processes for building microcredential programs, implement digital badges, and unbundle programs into smaller, skills-based units of learning.
- Demonstrate how IHEs have adapted both their "back offices" and "front offices" to support this mix-and-match model.
- Showcase how IHEs and EdTech can work together to support this approach.

The future of higher education is already upon us. We hope that this volume provides a useful blend of strategic insight and tactical steps that will help institutions facilitate a new model of higher education and training that is more responsive, equitable, and effective for today's learners.

OVERVIEW OF BOOK CONTENT

Section 1: Introduction and Overview to Higher Education's Unbundled, Customized, DIY Future

The three chapters in this section each provide foundational elements to consider throughout the book.

Chapter 1, "Fostering Learner Agency through Intentional Learning Design: Six Principles" by Cathrael Kazin, makes the case that the DIY approach to education and training is a new opportunity to put learner agency front and center. DIY requires that individuals already know something about how the process itself works—equally true whether one remodels their kitchen or pursues education. This new model of higher education must contain intentionality and nuance: too much unbundling and customization of learning pathways will leave learners paralyzed in the face of unlimited choice, while too little fails to give learners any meaningful agency in their own educational journey. Through the six principles of program design articulated in the chapter, this chapter articulates a vision of balancing a thoughtful approach to unbundling education in a way that maximizes learner agency.

Chapter 2, "Exploring the Future to Create Pathway Opportunities That Empower Students" by Chris Mayer, provides a framework for building educational programs that are oriented toward future, rather than solely current needs. He argues that the traditional approach to strategic planning at most IHE's are on a timeline that is too short (typically only 3-5 years) considering how long it takes academic programs to be built and then for learners to progress through them. Mayer presents a tactical framework that helps institutions consider future-planning on a scale of 10-15 (or more) years, and to design new and innovative academic programming with those insights in mind.

Chapter 3, "Policy Challenges and Opportunities for Postsecondary Alternative Credentials," is focused on the policy barriers that are preventing widespread adoption of alternative credentials, and what potential solutions to those policy problems are worth exploration. The author, Ryan Specht-Boardman, covers three primary policy areas: quality assurance & accountability policy, financial (i.e., funding) policy, and policies as it relates to national standards of interoperability and documentation of learning. The chapter argues that the new models of higher education described throughout this book are essential tools in meeting the nation's educational needs. As a result, institutional, state, regional (i.e., accreditor), and national policies need a serious and thoughtful review to both ensure accountability of, as well as access to, new postsecondary educational programs beyond just traditional academic degrees.

Section 2: A New Paradigm in Higher Education Reform – Skills as the Common Language for Higher Education

The three chapters in Section 2 collectively advocate for skills forming the backbone, and language, of new models of higher education. Utilizing skills frameworks will ensure greater alignment between workforce needs, business leaders, and postsecondary educational programming.

Chapter 4, "Charting a Future With Skills: The Need for a Skills-Based Education and Hiring Ecosystem," articulates that aforementioned proposition with clarity. Its authors—Sarah DeMark, Darin Hobbs, Kacey Thorne, and Kristian Young—posit that adoption of a common skills-based language and framework is not just useful, it is essential to ensuring the success of new models of higher education. Adoption of a common skills framework is a prerequisite to true interoperability. However, doing so requires significant attention to systems design and technology innovation. Informed by their national

work with the Open Skills Network, the authors provide a process for how an institution may adopt an interoperable, skills-based educational program design.

Chapter 5, "Brought, Sought, and Taught: Toward a System of Skill-Driven Applications," is written by Amanda Welsh and Allison Ruda. It presents a solution to a critical question as higher education moves towards a skills-based language: how might an IHE successfully convert the hundreds (or even thousands) of courses they currently offer into a common skills framework? In an academic study, Welsh & Ruda establish that course syllabi, when entered into a skillification processor, generally contain sufficient language to produce a useful skills translation. The authors studied the skillification product by the company Emsi (Editors note: This chapter was written prior to Emsi's re-branding as Lightcast), but its findings help shed light on the ways that existing college artifacts—namely, syllabi—can be used in the work of translating higher education into the language of skills.

The final chapter in this section—Chapter 6—is written by Maria Langworthy and Jake Hirsch-Allen of Microsoft and LinkedIn, respectively. Their chapter, "Learning 3.0: Bringing the Next Education Paradigm Into Focus," describes the impact of the skills-based ecosystem at a macro-level, heralding a new paradigm of learning (Learning 1.0 being the agrarian educational model, 2.0 being the industrial educational model, and now, Learning 3.0, a skills-based, more personalized model). They discuss applications of this approach in areas such as learner records, unbundling, verifiable credentials, and new business models. In fact, this chapter tees up Sections 3 and 4 well.

Section 3: Rebundling Academic and Nonacademic Sources of Learning – Prior Learning Assessment and Competency-Based Education

The chapters in this section explore the ways that a person's experiences—whether from the workplace, military, prior or alternative schooling, industry certifications, community service, or other sources of knowledge—can be authentically and intentionally brought into curriculum design. Two primary pathways exist to convert experiences into credit: prior learning assessment (PLA)[1], which is a broad term to describe the awarding of credit on the front-end of a student's academic career for their experience to-date; and competency-based education (CBE), which is an explicitly outcomes-based educational pedagogy that allows learners to leverage existing knowledge and skills to accelerate through curricula. Both these approaches help honor knowledge and skills accrued outside the walls of academe, and save valuable time and expense for learners. These two approaches can either be used as standalone features of academic program design, or can be embedded into other academic models. The first two chapters in this section will relate to PLA, the second two will relate to CBE, and the final two will integrate both approaches in their design.

Chapter 7, "Utilizing Prior Learning Portfolios to Rebundle Formal and Informal Learning" written by Diane Treis Rusk and Lauren Smith, shares results from a study on the portfolio process for PLA. They argue that because both formal and informal sources of learning have value, IHEs need to build a more robust infrastructure for evaluating and validating learning from informal avenues. The chapter contains a study of one PLA process that helps shed light on five essential questions, such as the impact of PLA on retention/graduation outcomes, proof of deep learning, academic performance once enrolled, variation by academic discipline, and the impact of a well-structured PLA portfolio process on students' own perception and meaning-making of their learning.

Chapter 8, "Expanding Knowledge Acquisition Frontiers in University Education: Accreditation of Learning Outcomes in Universities," is written by Niyi Awofeso, Hamdy Ahmed Abdelaziz, and

Moetaz ElSergany. This chapter surveys international efforts in PLA (called ALO, accreditation of learning outcomes, in their context) from different countries in Europe, the Middle East, and Africa. This chapter illustrates that the need to better integrate formal and informal learning experiences is a universal problem to solve. The diversity of approaches to recognize and validate prior knowledge may help readers consider new paradigms in their own institutional approach to the topic.

"A Competency-Based Lens for Exploring Higher Education Opportunities," Chapter 9, is written by Dirk Baldwin, Suresh Chalasani, Robert Ducoffe, and Deborah Ford. Drawing on their experience operating the nation's first AACSB-accredited fully online CBE business degree, the authors of this chapter showcase the key principles to build and support a successful CBE program. This chapter uniquely blends the business case for developing CBE programs (that successful businesses diversify their modalities and offerings) with the academic case for CBE as a pedagogical framework (that CBE provides a key pathway, especially for adult learners, to earn a degree on their own terms).

Chapter 10, "Competency-Based Education: The Future of Higher Education," showcases the implementation processes and steps an institution should consider when developing a CBE program. Authors Mary Pluff and Victoria Weiss press the case for the pedagogical and structural merits of CBE as an educational model. Building CBE programs is a unique challenge for most institutions, and this chapter provides helpful solutions and ideas to consider as an IHE faces the common barriers to implementation.

Chapter 11 is "Enabling Lifelong Learning in California Community Colleges: Coordinated State and Local Efforts." Its authors, Nadia Leal-Carrillo, Jodi Lewis, Aisha Lowe, and Kate Mahar, describe how the California Community Colleges—with 2.4 million students, the largest system of higher education in the country—is implementing both CBE and PLA initiatives. It is a unique story of system-level efforts and individual college-level processes. They showcase lessons learned on everything from how they worked with their state legislature, to specific college-level implementation decisions. Blending both PLA and CBE is a unique opportunity to radically rethink the way that adult learners' experiences can be seamlessly validated within academic learning.

Chapter 12, the last chapter in this section, "Alverno Accelerate: A Paradigm-Changing Program for Professional and Personal Success," is by Carole Barrowman, Trish Lewis, John Savagian, and Amy Shapiro. This chapter explores the development of Alverno Accelerate, a new degree pathway offered at Alverno College in Wisconsin. The program described in this chapter is truly a paradigm-changing disruption to how IHEs currently approach the education of its learners. This chapter illustrates the possibilities when traditional structures of higher education are dismantled and reinvented. Learners in this program have agency in their academic program, and the curricula integrates an outcomes-based pedagogy with a blend of experiential learning.

Section 4: Unbundling Learning to Facilitate Customized, Multi-Modality Learning Pathways

Though the concept of unbundling postsecondary learning into smaller units has been prevalent in higher education in the last decade (see, Selingo, 2013), simple unbundling is insufficient. The field needs to cultivate meaningful and intentionally-designed pathways between unbundled educational programs, forge interoperability across smaller units of learning, establish stronger and more universal frameworks for documenting unbundled learning, and reconsider the way that IHEs tell the story of skills-based small-scale education to learners and employers. This is the next evolution of unbundling. The seven chapters in this section showcase the topic from a variety of angles. Five chapters describe the process

through case studies of unbundling across different institutional contexts and approaches; one chapter focuses on the use of a Comprehensive Learner Record (CLR) to document multi-modality learning across multiple contexts; and the final chapter describes how to better design student support services in a multi-modality context.

Chapter 13, written by Debra Humphreys and Mary Hinton, describes the process, contexts, challenges, and opportunities in unbundling and rebundling the academic curriculum of small private liberal arts colleges. Titled "Seeking Equity, Quality, and Purpose as Higher Education Transforms: Liberal Arts Colleges Respond," the authors add to the literature by showcasing how liberal arts colleges might leverage their unique strengths to design new and innovative models of higher education.

Chapter 14, "A Step-by-Step Guide for Developing a Microcredentialing Program," is written by a team of authors from Florida Gulf Coast University. Glenn Whitehouse, Clay Motley, Aysegul Timur, David Jaeger, and Shawn Felton, outline a 12-step process for institutions to build and successfully implement a digital badging program. They detail key considerations, success strategies, and tactical approaches for obtaining institutional buy-in and ensuring the successful implementation of a unified, comprehensive digital badge program. The editors of this book also wish to thank Florida Gulf Coast University for sponsoring this chapter's Open Access.

"Implementing a Digital Microcredential Strategy at the University of Washington Continuum College," Chapter 15, is written by Bryan Blakeley and Rovy Branon. This chapter provides an excellent overview to the current landscape of digital credentials and describes a compelling case about the value of their implementation. It walks through overall strategy development and then explores three tactical steps taken by the institution to begin the implementation process.

Chapter 16, "Microcredentials, Macro Learning: One University's Path Toward Unbundling," is written by Allison Ruda. This chapter is a case study in how Northeastern University is undertaking the process of establishing a microcredential framework as an institution. It not only explores the development of that framework, but it also covers the leadership elements necessary to succeed in that arena. The chapter reviews some of the challenges with campus organizational structures and obtaining buy-in, change management strategies, and how to confront challenges faced as organizations work toward their unbundling goals.

"Unbundling Credit to Non-Credit: A Framework for Developing Alternative Credentials" by Beth Romanski is Chapter 17. Romanski articulates a vision and strategy for the coordinated and comprehensive unbundling of existing credit-bearing educational offerings into non-credit offerings. This chapter contains useful tables showing highly-detailed strategies and tactics on how to approach and succeed in the work, on all areas from institutional administrative structures to academic pedagogy. It also includes sample checklists and timelines that would help any leader considering how to manage this type of work.

Chapter 18, written by Matthew Pittinsky, is titled "Practical Considerations on How to Document and Transcribe Multi-Modality Learning: The Emergent Role of the Comprehensive Learner Record." As noted earlier in this preface, not only is it essential that we consider how to mix-and-match educational products, but just as important is the process by which learning is documented and validated from those myriad sources. A comprehensive learner record (CLR) is one emergent and leading tool for this purpose. Creating and implementing a CLR at a IHE is a daunting task, and this chapter helps readers know what considerations they should review and how their institution and their learners both benefit by utilizing a CLR.

Chapter 19, "Meeting in the Middle: Envisioning Postpandemic Responsive Student Support Services," written by Bettyjo Bouchey, Erin Gratz, and Shelley Kurland, is focused on the student affairs side of supporting students in multiple learning modalities. This chapter discusses the imperative that student affairs systems should be designed to support students in multiple learning modalities. Though its findings and recommendations apply to supporting students in multiple learning *mediums* (e.g. online vs. on-campus), it could also be considered through a lens of how student services can support students in multiple learning *formats* (e.g. traditional degree-seeking students in microcredentialing programs).

Section 5: Where Do We Go From Here? Enacting the Vision by Managing Change

This final section asks readers to consider how to implement themes from the preceding sections in the book.

Chapter 20, "Ever Upward: Building an Ecosystem to Support and Validate Lifelong Learning," is written by Scott Dolan, Michele Paludi, Leah Sciabarrasi, Anna Zendell, and Gretchen Schmidt. This chapter argues that many of the strategies in this book combine to form an "ecosystem" of ways that adult learners can continually return to the institution to upskill and reskill. Guided by a deep connection with employers and industry advisors, this team of authors describes different elements of their implementation and recommendations for readers to consider how these models of higher education may integrate.

"Working Inside the Box: How Small Steps Cumulatively Expand Access to Large Public Universities," Chapter 21, is written by Marty Gustafson and Jeffrey Russell. Though the chapter is written through the lens of change management at large universities, the seven strategies and tactics described are readily applicable to any institution ready to implement the new and innovative model of higher education outlined in this book. For each of the seven strategies detailed, the authors present both a high-level summary of its effectiveness and share a case study from their experience to show how to apply that strategy.

Chapter 22, "A Model for Lifelong Learning: Reframing Institutional Policy, Process, and Partnerships," is by Amrit Ahluwalia. This chapter brings in the voices of higher education leaders across the industry who are advocating for the development and implementation of new models of higher education. The chapter focuses on three key themes: recognition of prior learning, a shift to stackable certificates, and student-centricity as an enduring value rather than buzzword in design. This chapter also provides guidance on how IHEs may effectively partner with non-academic companies to help provide and support their vision of higher education.

In the Conclusion to this volume, Sally Johnstone shares insights from her long history as a leader and an innovator in higher education. She paints a picture of the resiliency of traditional higher education as it adapts and changes around the edges in response to social needs, demographic shifts, and world events. However, the past decades of change in the world, and particularly given the acceleration caused by the covid pandemic, may be straining traditional higher education beyond its ability to adapt. Johnstone provides many examples of how state systems and other coalitions of institutions have come together to meet the needs of the modern world.

In a world that itself is changing at breathtaking speed, our deepest hope is that this book is a clarion call to our field. We hope that the range of examples provided by this book inspire those within and outside of higher education to come together and lean into this new model of higher education and training. Our world has never needed a smart, informed, adaptable, and creative citizenry more than it does now.

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ENDNOTE

[1] PLA goes by many names, including Credit for Prior Learning (CPL), Assessment of Prior Learning (APL), and others internationally, like Validation of Non-formal/Informal Learning (VNFIL) in Europe or Prior Learning Assessment & Recognition (PLAR) in Canada. Whenever possible, we use "PLA" as the catch-all acronym here, but individual chapters may reference these other terms.