

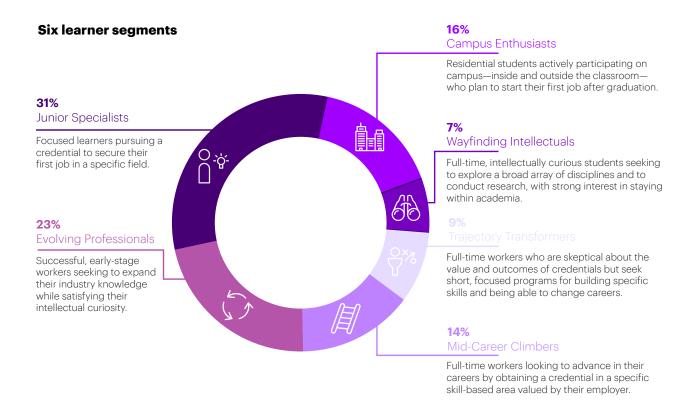
Executive summary

The COVID-19 pandemic accelerated changes already underway in higher education, including a reduced pool of "traditional" students, an increasing societal need for lifelong credentialing and skilling, the rise of alternative education providers and changing student expectations. For many colleges and universities, succeeding in this context means both improving service to existing students as well as pivoting to serve new student segments across the learner lifetime. Doing this well means understanding learners' varied journeys and motivations.

In light of these opportunities, Accenture researched how colleges and universities can differentiate their approach to serving learners across a lifetime, inside and outside the classroom, to improve student satisfaction, experience, outcomes and equity. In Summer 2021, we surveyed 6,500+ post-secondary US learners aged 16 to 65+. Our research went beyond most student surveys to include the population of "all learners"—that is, both current and prospective students, those seeking academic degrees or professional certificates, and those attending or considering any type of post-secondary education provider.

Key findings

Our analysis surfaced **six distinct segments of learners** who are clustered based on learning mindsets, goals and emotions rather than demographic factors, such as age or type of institution. Each segment has points of overlap and points of distinction.



Our study revealed a high degree of alignment in current satisfaction within and across segments.

- Students are most satisfied with how colleges and universities describe their academic program offerings and the academic advising to navigate them.
- Students are less satisfied with the level of support they are receiving in critical non-academic areas, such as financial counseling, mental health and wellness, and disability support.
- For every segment, "Greater flexibility around coursework modality (online, onsite, hybrid opportunities)" emerged among the top-four desired program improvements.

Our survey also uncovered program and service delivery preferences by segment.

- All segments have a good mix of students wanting inperson vs. online. These findings suggest that colleges and universities need to deliver nearly all services well across modalities. Without that ability, they risk losing large portions of their target segment(s) of students.
- Delivery preference for some activities cuts across segments. Students do value in-person delivery especially for certain deeply relevant experiences, such as graduation, internships and clubs/organizations.
 Students generally do not want in-person interactions for most administrative services (for example, researching programs, applying, registering for classes, paying bills, getting IT support and reviewing records).
- For some activities, there is correlation between segments and delivery preferences. For example, some segments have a greater preference for in-person delivery for some activities than other segments do. These differences will be important when targeting and serving specific segments.

96% of students find a high-quality digital experience important to their satisfaction, an increase from 2017.

Together, these findings present a strong imperative for institutions starting to think differently about how they serve students. The insights can help institutions appropriately assess service gaps, address student needs and expand their reach to new learner groups.

To do this, institutions can use our toolkit of offerings to accomplish one or all of these pivotal goals. Institutions can:

- 1 Identify target learner segments.
- 2 Manage relationships across the learner lifetime.
- 3 Allocate university resources with a zero-based mindset.
- 4 | Implement modern, cloud-based Enterprise Resource Planning (ERP) or Student Information Systems (SIS).

By making these investments, colleges and universities can remain highly relevant—fulfilling their mission and amplifying their impact on the people and communities they serve.

Background: The accelerating pace of change

The COVID-19 pandemic jumpstarted the already accelerating pace of change in higher education.

The composition of the learner market is shifting.

Many colleges and universities must shift away from a reliance on enrollment by traditional undergraduate students, a shrinking demographic group. A decline of more than 12% in birth rates during the 2007-2008 Financial Crisis is predicted to drive overall reduction in demand starting in 2026. Other factors—including recent visa issues, increasing competition from other countries and global travel uncertainty due to the COVID-19 pandemic—are exacerbating the challenge by constraining international student enrollment. And, while college enrollment rates do fluctuate with the economic cycle and other disruptions (as we have seen in the most recent pandemic), the fluctuation is unlikely to counter the broader shift in demographic trends. Consider, for example, that currently one-third of students enrolled in post-secondary institutions are 25 or older.

The need for credentialing and upskilling is increasingly lifelong.

Individuals joining the workforce today will work for longer than ever before, resulting in multiple career transitions. In addition, workers will need to adapt to fill skill gaps as more tasks become automated in a shifting digital economy. Although colleges and universities have historically focused on frontloading knowledge of learners early in their careers, some post-secondary leaders are shifting to serving learners episodically throughout an increasingly longer working lifetime.⁴ As responsibility for upskilling and retraining has shifted from employers to individuals, Stanford Universityⁱⁱ and others have begun piloting how it would look for one institution to serve the needs of an individual across a lifetime.

New players are emerging.

Beginning in high school and lasting until retirement, learners in the United States must begin choosing how education credentials will further their goals. Among each learner's considerations: What education will I need to meet my life ambitions? What are my options? What do I need to learn? How do I want to learn? Where do I want to learn? From universities to bootcamp companies, PhDs to PMP certificates, and self-funded to employer-funded programs, an increasing variety of organizations, certificates and funding combinations are available to meet learners' needs. As companies like Microsoft, Amazon and Google make inroads as alternative providers of education, will colleges and universities adapt to retain their go-to status?

Nondegree credentials, such as professional certificates, apprenticeships, vocational training, industry-based certifications and occupational licenses, are a rapidly expanding opportunity. Recent research by Strada demonstrates that in the United States, two in five working-age adults have completed a nondegree credential, with one in five reporting it as their highest level of education. Institutions awarding these nondegree credentials include colleges, universities, professional associations, businesses, governments and others. No single type of institution awards more than 20 percent of nondegree credentials.³

¹Traditional undergraduate student: one who earns a high school diploma, enrolls full time immediately after finishing high school, depends on parents for financial support, and either does not work during the school year or works part time (National Center for Education Statistics, 2002)

http://www.stanford2025.com/open-loop-university

Research findings

A new way to segment learners.

Our research scope uniquely expands the definition of current and future learners to include those receiving their educations from both traditional and non-traditional education providers. Fielded in July 2021, the US-based survey attracted 6,500+ responses from learners aged 16 to 65+ who are enrolled or imminently likely to enroll in post-secondary degrees or certificates. The educational institutions providing respondents' degrees and certificates included non-education private companies, current employers, and community or government nonprofits in addition to colleges and universities. The responses were analyzed and segmented using a Partition Around Medoids (PAM) algorithm to uncover distinct lifetime learner segments across a variety of providers.

Instead of segmenting based on demographic and academic performance factors, we developed learner segments using data on learner mindsets and motivations. We took this approach because demographic-based segmentation misses key elements of rapidly evolving human needs and learner expectations, particularly when looking at learners across different life stages. Using a more limited set of demographic and academic strength factors to design student experiences can lead to significant friction. Many students find ways to navigate the points of friction. Many others—particularly those from traditionally underrepresented groups—are challenged by this friction and end up exiting programs before attaining their credential.

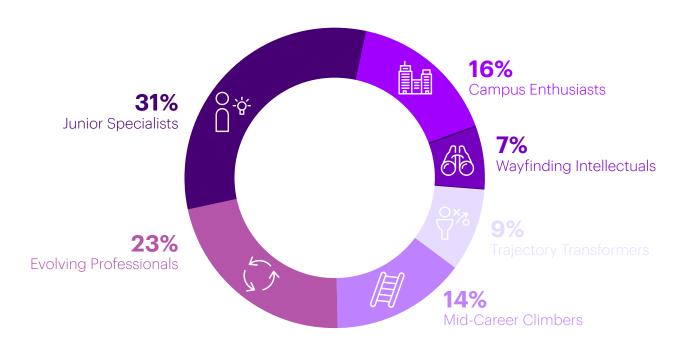
Understanding students, as segmented by learning mindsets, is a starting point for eliminating unnecessary friction and increasing student and institution outcomes.

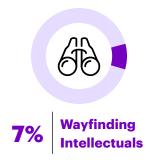
We measured post-secondary certificates as either Academic Degrees (Associate degree, Bachelor of Arts, etc.) or Professional Learning/Skill Certificates (Front End Web Development, Environmental Management, Lean Six Sigma Master Black Belt (LSSMBB)©, Salesforce Advanced Administrator, Healthcare Leadership Certificate, etc.). Vocational certificates, professional licenses, and personal or hobby learning were not included. Additional detail on credentials can be found in Appendix 1.



Profiles of six learner segments

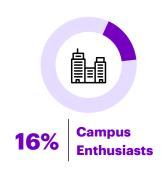
Six distinct segments emerged through algorithmic clustering across the spectrum of learners aged 16 to 65+, with unique characteristics described below. A detailed methodology can be found in Appendix 2.





Wayfinding Intellectuals are younger, have little work experience and are working toward their first degree. Driven by intellectual curiosity, these students are the group most interested in staying within academia. They seek a more traditional experience, prefer enrolling on campus versus being fully online and are less likely to work while in school. When thinking about their current or future program, this group is likely to be happy about their education experience or find it a bit confusing or surprising. This segment is more satisfied overall and less sensitive to cost, as many rely on parents to pay for their program.

Example: An undecided major at a small liberal arts college who is making great connections with professors through research and is seriously considering graduate studies.



Campus Enthusiasts are academically oriented young people who want an immersive and exploratory college experience. They are largely pursuing full-time academic degrees on campus, with social and career extracurriculars to broaden their knowledge and interests. Campus Enthusiasts will enter their first job upon degree completion and depend on the career support and internship/co-op opportunities available at the institution to land that job. Campus Enthusiasts have largely positive feelings of their program but also might feel confused about their future. As the youngest cluster, this group's parents are more likely to pay and to influence their decision-making.

Example: A student at a large state school who evaluated Greek life, student clubs, sports teams and gyms before deciding to enroll.



Junior Specialists are motivated by real-life application of coursework, internships and networks to enter an identified field upon graduation. Most Junior Specialists plan to enroll in or are currently attending four-year institutions full time and are likely to pursue their first degree in a professional field, such as healthcare or business. These students don't want to trade access to their intended major or quality of instruction for school culture or social opportunities. This group is highly reliant on loans and scholarships to pay for their program, as they tend to have lower incomes. Junior Specialists are more likely to be stressed, anxious or overwhelmed.

Example: A commuter student working part time who selected a major early on and has a clear career goal.



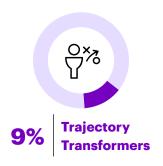
Evolving Professionals have higher incomes and more work experience. Driven by intellectual curiosity, they are looking to expand their wide range of interests rather than to develop specific vocational skills. The largest areas of study for this segment are related to information technology and business. While most will pursue a traditional degree, two in five are enrolled or intend to enroll in a certificate program. Tuition cost factors less in their decision, with many expecting (or at least hoping) their employer will help foot the bill. Evolving Professionals generally feel happy or excited about their program. They are older than the first three segments, and many have started families.

Example: An early-career professional going back to school for an MBA and interested in programs that emphasize the theoretical and practical sides of finance.



Mid-Career Climbers are looking to advance their careers through specific educational credentials closely tied to their current or future tuition-reimbursing employers. This older, wealthier group is looking to integrate the classroom into their busy lives. They are likely to work full time during their program, be married or partnered, and have dependents. As a result, Mid-Career Climbers put a premium on programs that offer flexibility and quality, such as fully online or mostly online hybrid programs. This group is the most likely to enroll in a professional certificate program and consider institutions outside of colleges and universities. This group has the highest rates of excitement, hope, happiness and fulfillment when thinking about their current or future program.

Example: A middle manager with a busy career whose mentor recommended using their company's tuition stipend for an executive leadership certificate course before next year's promotion reviews.



As the oldest group with the most work experience, Trajectory Transformers are looking to use a skills-based educational certificate to jump to a new role or a new industry. They focus on value and outcomes when choosing a post-secondary credential and are among the most price-sensitive learners. They also have a more strained relationship history with post-secondary education; this group rated "Culture—Feeling Like I Belong" as the most important social criterion. Many are or will be first-generation college students. Current academic degree—seeking students in this segment were the most dissatisfied group and frequently report feeling stressed or anxious in addition to excited/hopeful. More than half want fully online or mostly online hybrid programs.

Example: A full-time worker facing uncertain job security in their current field who is seeking a specific web development bootcamp program with consistently high job replacement rates.

Remarkably, across segments there is a similar breakdown of traditional demographic segments, such as race, ethnicity, gender, discipline of study and occupation. Age is an exception.

Learners within a segment have commonalities in who they are, which programs they are in, why they enrolled and what matters most to them. However, those goals and mindsets can differ or overlap with other segments, creating a challenge for institutions that serve multiple groups.

It is important to note that learners can move between these mindsets as their career and life situations change. For example, today's Campus Enthusiasts could be Trajectory Transformers in 15 years. Because of this, institutions that want to foster lifelong learner relationships should be sensitive to differing needs and strive to engage learners across their lifetime through alumni outreach efforts. By doing this, an institution is top of mind and positioned to serve alumni needing additional skills or knowledge.



Profile map of segment similarities and differences.

Each of the segments is distinct in some respects and overlapping in others. The chart below describes in greater detail how each of the segments compares with one another in terms of who they are, what programs they tend to participate in, what their goals are post-credential, and what matters most to them.

	A		ÖÅ	5			°73	
	Wayfinding Intellectuals	Campus Enthusiasts	Junior Specialists	Evolving Professionals		d-Career limbers	Trajectory Transformers	
	Younger, little wo	Older, more work experience						
	Working part time or not at all Working part and full time			Currently working, mostly full time				
Who?	First degree			Hold bachelor's ar master's degree	nd/or		Some college degrees, first- generation college	
	Parent funded	Financi	al aid supported	Higher income and self- financed	Employer funded or self-financed		Self-financed and employer influenced	
Which	Public and private	e universities	Universities and community colleges	Reputable public and private universities	Universities, private education providers and their employers		Universities, community colleges, private education providers and their employers	
programs?	Mostly degrees			Mix of certificate a	and deg	gree programs		
	More on-site/in-p	erson	More on-site/in-p for online	person, with option	More online		options	
Post- credential goals	Further academic study	Start a career		Advance in their current career		career	Get a better job, switch industries or careers	
What matters most?	Variety of Campus life and experiences internships		Acquiring specific jobrelevant skill	Flexibility and quality Acquiring specific jo		b-relevant skill		
	Campus location	and safety	Cost and financial aid	Availability of specific program	Flexibility and quality		Cost and quality	
	Wide variety of co social opportunit		Real-world Sense of belon culture		Sense of belonging/ culture			

- | How many years of work experience after high school did you/ will you have prior to starting your current/upcoming college or certificate program?
- What is your age?
- Who do you expect to make a significant financial contribution to your degree/credential?
- How would you best describe the post-secondary program/ professional certificate you are enrolled in/plan to enroll in?
- From which type of organization are you getting/will you get your current degree/certificate (if not enrolled or undecided, please answer based on most likely response)?
- What are you most hoping to experience while enrolled in your current/future program?
- Which of the following best describes the primary career outcome you hope your current/future program enables you to achieve?
- What are the most important criteria for selecting a school to attend for your program?

Key insights for serving learner segments.

The past year has tested educational institutions and the students they serve as traditional norms were upended, classrooms became virtual, and policies changed abruptly. Understanding the nuances of how well learners are being served today is key to student success and equity outcomes. Our survey data suggests that institutions have an opportunity to serve current or future students better regardless of which segment they are serving today, sometimes in counterintuitive or surprising ways. Doing so, however, requires adjusting the modality of delivery across academic, student life and administrative services, as well as investing in new operating models or technology that would support a better student experience in and outside the classroom.

Segment satisfaction today.

On overall satisfaction, we found that although more campus-based segments (Wayfinding Intellectuals and Campus Enthusiasts) were greatly disrupted by the pandemic, these groups were counterintuitively the most satisfied overall. On the other hand, the least satisfied group overall were the Trajectory Transformers, a group with more work experience that was primarily online even before the pandemic.

Satisfaction rates are tightly linked to the emotions that segments have in relation to their education experience, from happy to stressful. Within and across segments, learners are most satisfied with areas related to academic classes: lectures, study materials and class registration. Though there is some variation, students are broadly satisfied with their understanding of the institution's program offering prior to applying, as well as the academic advising that helps them navigate the program as a student. On a less positive note, each segment reported dissatisfaction with at least one critical non-academic student support area, such as financial counseling, mental health and wellness, or disability support.

On overall satisfaction, we found that although more campus-based segments (Wayfinding Intellectuals and Campus Enthusiasts) were greatly disrupted by the pandemic, these groups were counterintuitively the most satisfied overall.



Satisfaction by segment

		Wayfinding Intellectuals	Campus Enthusiasts	Junior Specialists	Evolving Professionals	Mid-Career Climbers	Trajectory Transformers
Top Recommended Improvement		More opportunities for networking	More opportunities for internships/ co-ops	Greater flexibility around coursework modality Ability to move through program faster	Greater flexibility around coursework modality	Greater flexibility around coursework modality	Lower tuition
Primary Emotions		Mostly satisfied: happy, hopeful, surprised	Mostly satisfied: happy, hopeful, surprised	Satisfied: hopeful, stressed, anxious, overwhelmed	Mostly satisfied: happy/excited	Satisfied: excited/ hopeful	Most dissatisfied: excited/ hopeful, stressed, anxious
	Small-group discussions or tutoring						
Academic	1:1 interaction with instructors						
	Peer study groups						
	Internships						
	Academic advising						
	Financial counseling						
	Mental health/ wellness counseling						
Student Life	Disability support						
	IT support						
	Clubs and organizations						
	Informal peer socialization						
Administrative	Researching programs before applying						
	Financial aid						
	Orientation						
	Bill payments						
	Student records management						
	Understanding institution-specific policies						

Within top 4 ranked "most satisfied" service

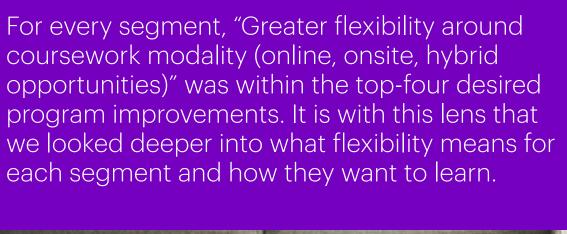
Within top 4 ranked "least satisfied" service

I "If you could change five things about your experience in your current program, what would it be?"

I "How likely would you be to recommend the program you've selected to a friend or colleague?"

| "Which of the following emotions most accurately describe your experience in your current program or your emotions when you think about your future program?"

I "For each of the following academic activities, please rate your level of satisfaction with your experience this year."



Delivery modality across academic, student life and administrative activities.

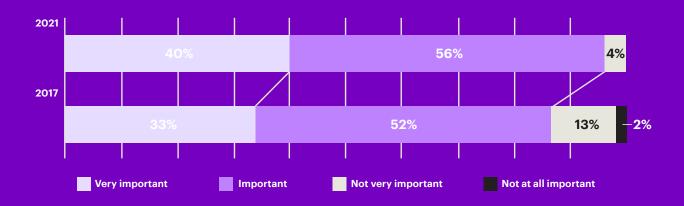
Following the abrupt and far-reaching move to remote learning caused by the pandemic, learners in every segment have experienced digital curriculum and program delivery. Students' reactions to this have disrupted the idea that in-person experiences are always superior to online experiences, especially if flexibility is a top concern for learners.

The forcible move to online education has reiterated and increased students' desire for a high-quality digital experience. In a 2017 Accenture survey of full-time college and university students in the United States, 85% said a high-quality digital experience is important to their satisfaction with their campus. In 2021, that number increased to 96% for learners—and it is a priority that does not differ across segments.

All segments stated a comparably greater preference for in-person delivery of deeply relevant social experiences like clubs, informal socialization, interaction with instructors and orientation. All segments also have a slight preference for mostly hybrid or online versus in-person services when it comes to key student supports, such as tutoring, financial counseling, career counseling or mental health and wellness. Most are very accepting of administrative tasks like IT support or bill paying being online.

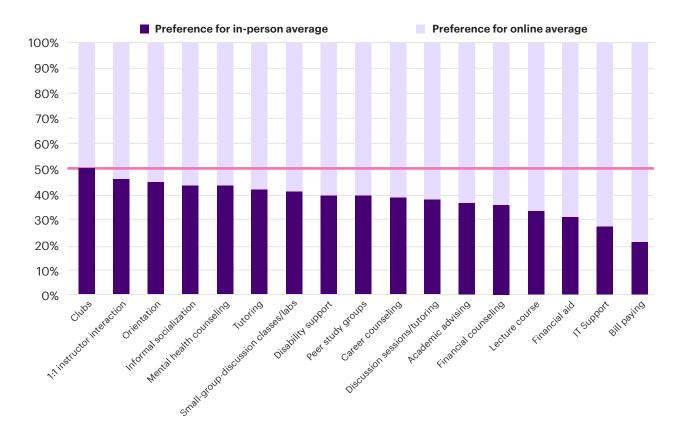
Increasing importance of digital experience to learning

We asked learners how important a high-quality overall digital experience is to their satisfaction with their institutional learning provider.



Activity modality preferences

We asked respondents to rate their preferred method of engagement for each of these activities.





Diverging preferences of modality by segment

For certain areas, the segments diverge in their desired delivery method. For example, across learning, administrative and student life activities, Wayfinding Intellectuals have a comparative preference for inperson modality, while Evolving Professionals and Mid-Career Climbers have a comparative preference for remote/digital.

These findings suggest that every college or university needs to excel at in-person and online provision of almost all services. Otherwise, an institution will generate lots of friction for learner segments they serve.

	Average In-Person	Wayfinding Intellectuals	Campus Enthusiasts	Junior Specialists	Evolving Professionals	Mid-Career Climbers	Trajectory Transformers
Internships	51%	48%	47%	55%	46%	53%	58%
Independent study materials	31%	39%	38%	30%	29%	26%	27%
Graduation	57%	52%	53%	60%	52%	60%	66%
Researching programs	27%	33%	34%	25%	28%	21%	20%
Application process	24%	32%	30%	23%	22%	20%	17%
Registering	25%	32%	32%	24%	23%	20%	19%
Obtaining/viewing/ modifying records	27%	33%	34%	26%	25%	24%	20%
Resolving account holds	30%	39%	36%	30%	26%	26%	26%
Checking institutional policy	26%	32%	32%	25%	25%	23%	17%

For each of these activities, please rate your preferred method of engagement

Comparably more in-person Comparably more online

Keeping up: Retooling student experience

To address the multifaceted and at times conflicting needs of different learner populations, institutions must consider who they are serving, evaluate how well their offering meets the needs of their learner segments, and determine what changes must be made to better support all current and future target learner populations.

Accenture proposes the following steps to enhance the student experience and support learners.

Step 1

Identify target learner segments.

Step 2

Manage relationships across the learner lifetime.

Step 3

Allocate university resources with a zero-based mindset.

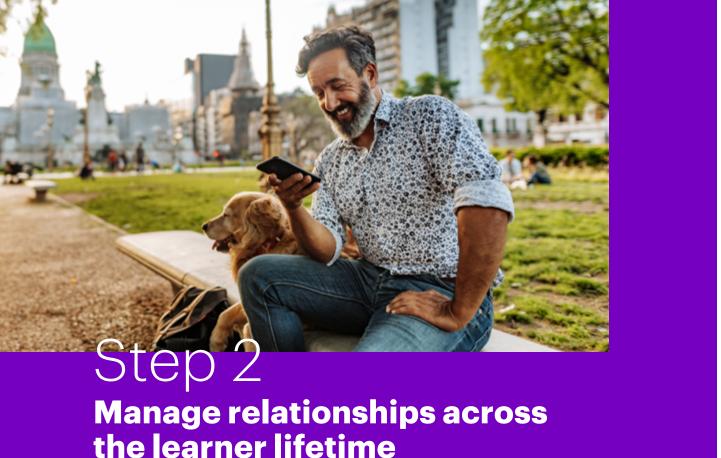
Step 4

Implement modern, cloud-based technology, such as Enterprise Resource Planning (ERP) or Student Information Systems (SIS).



Institutions need to identify the learner segments they currently serve and the target segments they want to serve moving forward to clearly understand their needs. Our segmentation analysis provides a good introduction and serves as a baseline for understanding learner mindsets beyond demographics. However, each institution should undertake an individualized reflection. This could include conducting institution-specific segmentation to understand the students served and synergies across segments the institution currently serves or hopes to serve. A subsequent student experience opportunity assessment can help in building and implementing a student experience journey based on "moments that matter."

After identifying target learner segments and mapping their identified needs, institutions should begin to understand how a focus on serving one segment or set of segments impacts the needs of other segments. This is especially important as institutions attempt to serve new learner groups, such as those with more work experience, who put a premium on speed and flexibility of programs and have little need for a wide variety of research/academic opportunities or campus-based amenities. Investments in an expanded career services offering, for example, would benefit multiple crossgenerational learners.



the learner lifetime

Universities can no longer think of relationships in silos by office or by data. Rather, all aspects of the student lifecycle—from enrollment management through advancement—need to be aligned through a university-wide engagement vision.

Universities excel at getting students in the door and providing an education; a challenge is keeping learners meaningfully engaged beyond graduation.

A new vision needs to address students' changing needs throughout their lifetimes. Colleges and universities—currently designed only for a relationship with learners as applicants, students and alumni—should shift their thinking toward building a 60-year relationship with students. A meaningful student experience across a lifetime could result in more episodic learning, where students return to their college or university for upskilling and career guidance. Institutions should consider offering recent graduates job placement and professional networking opportunities and fostering continued relationships with graduates in the decades after graduation to stay top of mind when the need for reskilling arises.

For these opportunities to be possible, however, institutions need to be able to follow a student beyond their journey at the institution and through their entire lifetime. Effective master data management and a robust, university-wide customer relationship management (CRM) capability are core to being able to facilitate a lifelong relationship with alumni.



Allocate institutional resources with a zero-based mindset

Higher education institutions have a history of readily expanding program offerings to meet student demand and preferences but being less comfortable sunsetting programs or services that no longer attract students or funding. This also happens beyond academics in other categories of institutional spend and resource allocation in the form of outdated or burdensome services that are inefficient or no longer meet student or institutional needs. A zero-based mindset can help institutions identify ways to free up resources to invest in the initiatives that will be required to effectively serve new learner segments. For example, an institution that aims to serve primarily Junior Specialists might experience better returns by investing in modern career services tools or partnerships with hiring corporations over a fancy new student center. A strategic, zero-based mindset approach will allow institutions to look across their spend and organizational structure to identify how it might evolve to better support current/future strategic objectives.



Implement modern, cloud-based technology, such as Enterprise Resource Planning (ERP) or Student Information Systems (SIS)

A key contributor to friction within the student experience is the number of disparate systems students must interact with to accomplish basic administrative tasks, such as registering for classes or paying a bill. Students often have to navigate through multiple student portals and platforms or be bounced from office to office because administrators lack access to all of the systems necessary to support them through an end-to-end task. Institutions must take an experience-led view to design a technology architecture for a frictionless future for all the segments served.

Implementing a leading cloud-based ERP system enables a frictionless experience for students, faculty, staff and administration. All users are empowered by self-service from any device, including mobile, with a user-friendly interface showing real-time data. For students, being able to access information from anywhere, complete tasks at any time and easily communicate with faculty and staff increases engagement and their ability to meet critical deadlines, such as registration and add/drop.

For faculty, staff and administration, real-time data access and automated tasks free time to focus on more strategic, mission-critical priorities. This access also helps them be nimble, an essential capability in an ever-changing world. For example, leading student information systems can provide the flexibility to have unique policies by individual school or college and to change policies when needed. These systems make it possible to provide students the option to choose pass/fail mid-semester instead of solely at the semester's start. They also enable administrators to change class sections from in-person to online at any time with immediate notification to students. With the ease of real-time, shared, reliable data—and the support of predictive analytics—an institution gains better visibility into students' needs and can increase the accuracy of resource planning.

Spotlight: NUflex at Northeastern University

As soon as it became clear that a traditional college experience in the fall of 2020 would not be feasible due to the COVID-19 pandemic, Northeastern University (Northeastern) began preparing for a return to school that would provide students with a safe and flexible learning environment that also fosters human connection and supports high-quality education. The plan included everything from launching an oncampus testing center to de-densifying classrooms and dorms. Two key elements of this return were the introduction of the hybrid "NUflex" learning model and the launch of the Student Hub. To maintain a sense of community to keep students enrolled, Northeastern created an innovative student experience that kept students socially and academically engaged in whatever learning format they felt comfortable.⁵



Conclusion

With a more nuanced understanding of learner mindsets, colleges and universities can deliver experiences, programs and services that better meet learner needs and preferences. By making targeted investments, institutions can remain highly relevant—fulfilling their mission and amplifying their impact on the people and communities they serve.

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Appendix 1: Definitions

Post-secondary learning credentials

Scope	Certificate	Characteristics	Examples	Awarding Organizations
	Academic degrees	A credential awarded by an educational institution based on completion of all requirements for a program of study, including coursework and tests or other performance evaluations. Academic degrees are typically awarded for life.	Associate degree, Bachelor of Arts, Master of Science, Doctor of Philosophy, etc.	Public, private and for-profit colleges and universities (e.g., University of Michigan, Northern Virginia Community College)
	Professional learning/skill certificates	Any educational or professional credential awarded by an institution based on an individual's knowledge or skills. Certificates may be sequenced or stacked in a particular domain or sub-domain.	Front end web development, environmental management, Lean Six Sigma Master Black Belt (LSSMBB)®, Salesforce advanced administrator, healthcare leadership certificate, etc.	Colleges and universities (e.g., Columbia University School of Professional Studies), private providers (e.g., Salesforce Trailhead, Amazon University)
	Vocational trade school and apprenticeships	A credential awarded by a certification body based on an individual demonstrating through an examination process that he or she has acquired the designated knowledge, skills and abilities to perform a specific job.	Cosmetology certificate, culinary arts certificate, electrical worker certificate, etc.	
	Industry certifications/ licensure	A credential awarded by an industry or government organization that constitutes legal authority to do a specific job. Licenses are based on some combination of degree or certificate attainment, certifications, assessments or work experience. They are time-limited and must be renewed periodically.	Certified environmental engineer, licensed family therapist, State Bar of Arizona attorney, etc.	
	Personal learning	A credential awarded by an organization that recognizes completion of a skill that is recreational in nature.	Open water diving certificate, first aid & CPR, etc.	

Appendix 2: Detailed segmentation methodology

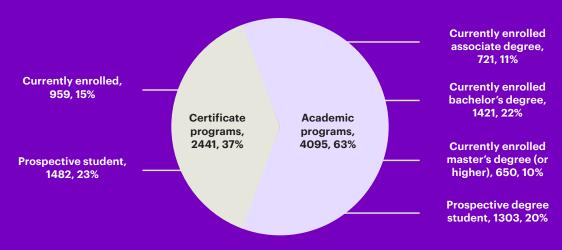
Our research was scoped around learner mindsets, from a variety of institutions, at all adult ages, specifically from US-based respondents (n=6,536). From this data set, we conducted a Partition Around Medoids (PAM) methodology to define clusters, resulting in six distinct learner segments.

Survey respondents

Respondents included those currently enrolled or imminently likely to enroll in an educational credential program. Educational degree programs included associate, bachelor's, master's or PhD programs from a college or university. Certificate programs included nondegree college and university certificates; private bootcamps; private education companies (e.g., bootcamps like Flatiron, Project Management Institute); current employer or other non-education companies (e.g., Google University, Amazon University); or community or government nonprofit. Excluded were credentials related to vocational, technical or trade programs; hobby or personal development programs; and certificates related to required continued education for licensure.

Survey respondent programs

Which of the following best describes your most recent situation regarding post-high school education?



The demographics of the survey respondents varied. Forty-one percent of the respondents were below the age of 25; 10% were 55 and older. Sixty-one percent identified as female and 39% as male. Seventy-three percent of respondents were white, 13% Latino, 12% Black or African American, 4% East Asian, 2% South Asian, 2% American Indian or Native Alaskan, 1% Native Hawaiian or other Pacific Islands, and 1% other. For household income, 10% reported being supported by their parents, 26% made less than \$40,000 annually, and 14% made more than \$100,000 annually. Twenty percent of respondents are (or will be) first-generation college students. Thirty-eight percent of respondents reported having another person in the household they are responsible for (including children under 18, full-time students under 24, or an elderly or sick family member). Survey respondents equally represent the Midwest, West, South and Northeast of the United States. Lastly, 15% are from rural areas, 45% suburban and 34% urban.

Segmentation algorithm: Partition around medoids

The Partition Around Medoids (PAM) algorithm is intended to find a sequence of objects called medoids that are centrally located in clusters.

For our survey data, we selected four primary questions from which to define the medoids, resulting in six distinct clusters. All the other survey question results then became associative with the clusters.

- 1 What are you most hoping to experience while enrolled in your current/future program?
- Which of the following best describe the primary career outcome you hope your current/future program enables you to achieve?
- Based on what you said to the previous questions, rank the top five most important criteria overall for selecting a school or program to attend.
- 4 Which of the following emotions most accurately describe your experience?

Objects that are tentatively defined as medoids are placed into a set S of selected objects. If O is the set of objects, then U = O - S is the set of unselected objects. Equivalently, we can minimize the sum of the dissimilarities between an object and their closest selected object. The algorithm has two phases: (i) In the first phase, BUILD, a collection of k objects is selected for an initial set S. (ii) In the second phase, SWAP, one tries to improve the quality of the clustering by exchanging selected objects with unselected objects. The goal of the algorithm is to minimize the average dissimilarity of objects to their closest selected object.

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