High Impact Practices by Design

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Introduction

For more than a decade, colleges and universities nationwide have referenced George Kuh's *High Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter* (2008). Extensive research supports the efficacy of high impact practices (HIPs) for increasing student engagement and facilitating academic success. It's a simple matter to find literature identifying what these practices are, who benefits most from them, and why they're important. But a crucial element is missing from most of the literature about HIPs: ***how****?* How could we implement HIPs on our campuses, departments, programs, or classrooms?

The question of *how* is essential. After all, it's one thing to know what something is or to recognize why it's good, but entirely another to attempt to do it yourself. Most of us know what our car's transmission is and why we need one, but few drivers possess the specialized skills and knowledge required to rebuild a transmission. Faculty members and academic administrators are disciplinary experts who have also taken on the roles of educators and leaders. Nevertheless, our prior expertise seldom equips us to become agents of academic innovation and transformation, any more than reading about a car's transmission imparts the ability to perform an effective repair.

This document is an effort to bridge the gap between theory and practice – to explain high impact practices along with effective strategies suitable for implementation in varying contexts from large-scale university-wide efforts to individual instructors' classrooms. Our journey will take us through the territories of why, how, and what:

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Nobody likes change, least of all in higher education. Nevertheless, change is inevitable, no matter how long we've been able to stave it off until now. The body of students we educate, their purpose in pursuing an education, sociocultural and political expectations for higher education are vastly different

than when our present system evolved in the 19th and 20th centuries. Traditional approaches no longer serve a distinctly non-traditional population, nor do they meet the needs and expectations of the 21st century outside of our self-imposed boundaries. To begin, then, let's explore those issues.

Part 1 – Why? Rationale for Transformation

Then and Now: from the Ivy League to Access for All

Higher education in the US today is nearly unrecognizable from its colonial origins. The nine original colonial colleges were founded by religious groups for the purpose of training young men for ministry, based on the widespread belief that an educated and well-informed clergy was crucial to society. These nine colleges produced many of the political, social, and religious leaders of the time.[1]

Harvard (1636) – Puritan
College of William and Mary (1693) – Anglican (Church of England)
Yale (1701) – Congregationalist
College of New Jersey (now Princeton) (1746) – Presbyterians
King's College (now Columbia) (1754) – Anglican (Church of England)
College of Philadelphia (now the University of Pennsylvania) (1755) – nondenominational
College of Rhode Island (now Brown) (1764) – Baptist
Queen's College (now Rutgers) (1766) – Dutch Reformed Church
Dartmouth (1769) – Congregationalist

The colonial colleges later expanded to include teaching in law and medicine, but instruction continued to mirror the classical European model. All students were white, male, and Christian, and most were from relatively privileged families. Scholars estimate that no more than one in one thousand colonists attended college, with perhaps 3,000 living graduates in 1775.[2]

As the nation grew over the next century, more colleges opened their doors, given a boost in 1862 with the passage of the Morrill Act, which facilitated the creation of land-grant colleges and universities in every state. These were founded **"with the primary goal of educating the common rural American"**[3] and to foster scientific research into agriculture and the mechanical arts (engineering) **"in order to promote the liberal and practical education of the industrial classes in several pursuits and professions in life."**[4] The Industrial Age spawned new technologies, leading to increasing specialization in the sciences and a better-educated workforce. Just as the colonial colleges served a dual purpose in providing a broad education coupled with preparation for careers in ministry, medicine, and law, the land-grant colleges served the same function across a wider variety of fields, professionalizing agriculture and engineering while continuing to upholding the value of instruction in the liberal arts.

The impulse to broaden access to higher education in the mid-1800s echoes today's conversations, **"to build up a people's institution, a great free University, eventually open and accessible to the poorest [person] in the land, who may come and receive an education practical and suitable for any business of profession in life,"** (Kentucky University, 1866). A century and a half later, we're still debating these issues, but we can identify the impulse towards open access, affordability, and practical preparation for careers as being deeply embedded in our history. Continuing tensions between efforts to promote the

intrinsic value of a liberal arts education and emphasis on preparing graduates for careers could be seen as a return to our roots rather than a betrayal of traditional values. Both purposes remain essential and both have been present in higher education since its colonial origins.

Despite the Morrill Act's expansion of access to higher education, earning a college degree remained a comparatively rare achievement until fairly recently. Less than 10 percent of the populace even graduated from high school in 1910 but by the mid-1930s, the figure had risen to nearly half,[5] and as of 2017, 90% of the US population have completed high school.[6] Degree attainment has risen over the past century, as well. In 1933, just 8% of women and 16% of men earned a bachelor's degree.[7] Today, 70% of high school graduates now enroll in college, 23% of the US population have earned a bachelor's degree, and 11.5% have a master's degree or higher.[8] Nevertheless, we should be concerned that 7 in 10 high school graduates begin college[9] but just one-third of the US population [10]have completed a bachelor's degree.

Questions of access, exclusivity, expense, and purpose continue to shape higher education today. Gaps between institutions are wide and deep. Seven of the nine original colonial colleges are now counted among the Ivy League, remaining prohibitively exclusive and extraordinarily expensive. For instance, Harvard admits only about 5% of applicants, and its total cost of attendance for one year is $67,580.[11] In contrast, Bridgewater State, a regional comprehensive public university located just 43 miles from Harvard, admits 81% of applicants and a year of tuition is slightly more than $10,000.[12] Room and board can more than double the cost of attendance, so students increasingly choose to live at home and commute to class. At Valdosta State University, for example, less than 25% of students live in campus housing, whereas 97% of Harvard students choose to live on campus for all four years.[13]

Discrepancies such as these characterize the diverse array of colleges and universities available to prospective students. Public vs private, non-profit vs for-profit, faith-based vs secular, small liberal arts colleges vs enormous Research 1 universities, historic bricks-and-mortar campuses vs solely-online programs, highly selective admissions vs open enrollment, and unlimited points along these parallel spectrums present a dizzying picture of options available to today's students. We've come a very long way from our colonial roots.

19th Century Models in the 21st Century

What We Teach

The classical model of higher education, such as the curricula of the original colonial colleges, included study of the seven liberal arts: grammar, logic, and rhetoric (the "trivium"), which imparted written and verbal proficiency; and arithmetic, geometry, music, and astronomy (the "quadrivium"), which promoted critical thinking. Study of Latin and Greek was considered essential to becoming an educated citizen, and instruction focused on memorization of facts pertaining to those seven disciplines and study of "great works" of literature and philosophy.[14] These subjects eventually became the basis of the

modern liberal arts curriculum and of general education requirements in the arts, humanities, social sciences, mathematics, and natural sciences. Both the classical and liberal arts models provide a common body of knowledge to all learners and are still believed to produce well-informed citizens who are prepared to make meaningful contributions to a democratic society – 18th century ideals that are alive and well in our 21st century universities.

How We Teach

Just as our liberal arts curricula has deep roots, so do our preferred pedagogies. As disciplinary experts, faculty possess knowledge that they are expected to convey to their students. Many educators use lecture or other methods of direct instruction at least some of the time, even though research has demonstrated lecture to be "the least effective at teaching and engaging students."[15] It's not unusual for general education courses to be held in large lecture halls, where one professor lectures to hundreds of students, few of whom receive individual attention from the professor. An observational study of more than 2000 college classes in science, technology, engineering, and math monitored nearly 500 faculty teaching over 700 courses at 25 institutions in the US and Canada, finding that the majority of classroom interactions consisted of conventional lecturing. Researchers reported that faculty defaulted to lecturing because they lacked the professional development to implement effective student-centered teaching strategies,[16] or they voiced a belief that their large class sizes prohibited instructional methods other than lecture. Reliance on large lecture sections is especially common in required liberal arts or general education courses, where constraints of scheduling and staffing appear to disallow smaller class sizes or a more personalized approach.

Discussion of student-centered pedagogies will be part of our exploration of High Impact Practices in Part 2. Large lecture courses may be economical and efficient, but if we realize they are ineffective at achieving student learning, we should begin to explore alternatives.

Who We Teach

Beyond our ongoing reliance on lecture, higher education continues to operate under a set of presumptions about students that may or may not remain true. Since the standardization of K-12 education in the late 1800s, undergraduates have almost always been 18-22 years old, usually white, and relatively affluent. More men attended college than women until the late 1970s, and most students lived on campus. Admission standards relied on the assumption that students were "college ready" as demonstrated by their proficiency in reading, writing, and mathematics, measured through standardized testing and grade point averages. They were also evaluated on the basis of being "well-rounded" through participation in extra-curricular experiences such as sports, the arts, competitive clubs, community service, organizations such as Scouting or faith-based groups, and so forth. Highly-selective colleges and universities continue to admit a majority of students who fit this description, not to mention being academic superstars. These characteristics don't just make a student appear more attractive to admissions officers – they have a hidden benefit in imparting a set of experiences and abilities that prepare the student for success in college including collaboration and teamwork, critical

thinking and problem solving, creativity and imagination, time-management and personal discipline, among other advantages. Unsurprisingly, selective institutions experience fewer problems with students' retention, persistence, and graduation rates because their students arrive on campus equipped with the tools for success.

Students at institutions with more open enrollment policies, however, are less likely to have enjoyed the same advantages during their K-12 experience. Their families may not be able to finance students' participation in sports or clubs, students might not have had time for extracurricular activities because they worked part-time, or the school systems from which they graduated might not have offered a stellar college-preparatory curriculum. They might not have achieved high grade point averages or earned outstanding scores on standardized college entrance exams, their first language might not be English, and they may have undergone adverse or traumatic experiences such as homelessness, food insecurity, violence, poverty, or the loss of a loved one through divorce, death, or incarceration. They might also be older than 22 years old, employed full-time or part-time, or the heads of their own households. They seldom live on campus and many can only attend part-time due to outside responsibilities or financial difficulties.

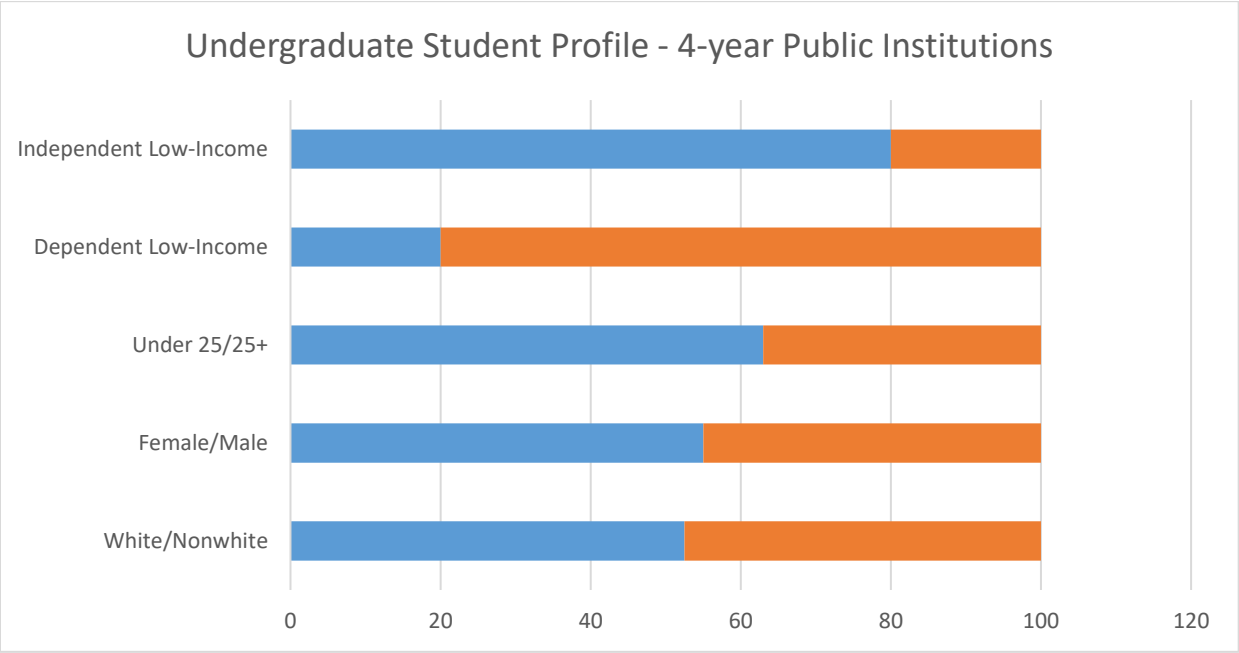
So what's the typical student like today? The National Center for Education Statistics reported that nearly 20 million students attended colleges and universities in the fall of 2019.[17]

- 60% full-time, 40% part-time
- 85% undergraduate, 15% graduate
- 75% public institutions, 25% private institutions
- 30% 2-year institutions, 70% 4-year institutions
- 55% female, 45% male
- 52.5% White, 47.5% non-White (18% Hispanic, 13% Black, 6.5% Asian, 3.5% two or more races, 0.5% American Indian/Alaskan Native/Pacific Islander)
- 63% under the age of 25; 37% age of 25 or over

Furthermore, a Pew Research Center report (May 2019) found that 20% of all undergraduate college students come from poor families. The figures are significantly higher among independent students at four-year institutions: 41% were living in poverty, 24% were near poverty, 14% were lower-middle income, 19% middle income, and just 3% higher income (in 2016),[18] meaning only 22% of independent students are above the lower-middle income threshold.

Let's narrow this down to a profile of full-time undergraduates at four-year public institutions:

- About half are White and half are not.
- Slightly more than half are female and slightly less than half are male.
- About 6 in 10 are under the age of 25 and 4 in 10 are 25 or older.
- 2 in 10 are low-income overall; but 8 in 10 independent students are low to lower-middle income.



Next, let's consider graduation statistics. Just 33.3% of students attending public colleges and universities graduate in four years, rising to 57.6% in six years. Private universities fare a bit better: the four-year graduation rate is 53.5% and 65.4% graduate in six years.[19] Nevertheless, this illustrates a very uncomfortable truth – about four in ten students who enroll in college fail to graduate, even in six years.

Why do so many students fail to make it through to graduation?

> "A fundamental reason is that many institutions have not adapted to serve today's students," explains Mamie Voight, the vice president of policy research at the Institute for Higher Education Policy. Students are more diverse than ever, racially and economically. They're working part-time and are often struggling financially, she explains, with college affordability as a major factor in their success.[20]

Considering all of these statistics, it should become clear that our students might not be who we've imagined them to be. We're light years away from the days when college students were all young, male, white, affluent, and well-prepared academically. Nevertheless, we're still employing the same pedagogies to deliver the same common body of knowledge as we have for more than a century.

Why Our Pedagogies Remain Unchanged

The systems and structures of higher education have remained largely the same since the late 1800s, when reformers such as Harvard president Charles Eliot encouraged the growth of academic departments, reducing emphasis on a classical education and encouraging disciplinary specialization. In his inaugural address (October 1869), Eliot outlined the principal goal of higher education as providing, **"an accurate general knowledge of all the main subjects of human interest, besides a minute and**

thorough knowledge of the one subject which each may select as his principal occupation in life."[21] Eliot saw higher education as essential to social reform, saying, **"unless a general acquaintance with many branches of knowledge, good so far as it goes, be attainable by great numbers of men, there can be no such thing as an intelligent public opinion; and in the modern world the intelligence of public opinion is the one indispensable condition of social progress."**[22] Eliot also chaired the "Committee of Ten," which led the movement to standardize K-12 education nationwide. An industrial model of structured schedules, departmentalization, credit hours, and graduation requirements arose through their efforts and remains in force to the present day.[23] We usually take this system entirely for granted.

Students bear a great deal of responsibility for finding their own way through the maze of choices available to them in higher education. They usually select from a menu of courses that can fulfil general education or liberal arts requirements, declare a major with its own set of expectations and requirements, and sometimes (depending on the demands of their major) also pursue a minor or flesh-out their degree plan with elective studies. Students' course selections are influenced by many factors unrelated to the education they hope to earn, including course availability, advantageous scheduling, their opinion of the instructor, or personal interests. The result can become somewhat haphazard, with a primary goal of simply acquiring sufficient credits towards graduation rather than optimizing the individual student's educational experience. Although contemporaneous efforts are slowly changing this paradigm, many students still receive minimal guidance in making these choices beyond semi-annual voluntary meetings with an academic advisor who serves hundreds of other students. Students may not be aware that completing a bachelor's degree in four years means that they must remain enrolled in 15 credit hours in all eight semesters, especially since a "full course load" is defined as 12 credit hours. Taking a minimum number of credits places students further behind in every semester, delaying graduation and compounding the expense of their education.[24]

The decentralized nature of our institutions and the prevalence of faculty-centered culture mean that courses tend to exist in isolation from one another even within the same department. Let's imagine a large university where students are required to take History of the World I and II in fulfilment of general education requirements. Because thousands of students must take these courses, each is offered in half a dozen large lecture sections every semester, taught by different members of the faculty or perhaps even graduate students. The professor teaching Fall Section B of History of the World I and the professor teaching Spring Section D of History of the World II might not share information about individual students or even realize that a particular student was enrolled in each of their courses.

Among other things, our course content is delimited by its catalog description and departmental decisions, but within those frameworks, individual faculty members are free to make decisions about what to teach, how to teach it, and how to assess students' learning of the material they presented in class. Departments seldom coordinate their course offerings with one another, either. Each establishes its own curriculum, subject to the discretion of the provost and scheduling requirements as set forth by the registrar.

Our departments, programs, colleges, and schools tend to maintain an internal focus, protecting their traditions, preserving disciplinary standards, and upholding their inherent value to higher education. Most faculty and administrators understand the intrinsic value and practical application of their discipline or sub-discipline, but few of us could explain precisely how and why each of the requirements for a bachelor's degree produces competent citizens prepared for productive careers. Even in our areas of expertise, faculty also tend not to make overt connections between our course content and why it's important to students' futures. We simply expect our students to figure these things out on for themselves.

Somehow, these disparate components maintain a sort of functional cohesion within each institution of higher learning. The fundamental autonomy of academic units, along with significant differences in their characteristic ontologies, epistemologies, research methodologies and approaches to pedagogical and curricular development have evolved into a bewilderingly complicated system that we presume students will be able to navigate with little, if any, assistance.

An Analogy

To better understand the conditions facing our students, let's consider the following analogy. A homeowner decides to build a backyard gazebo. After acquiring lumber, fasteners, roofing material, and other supplies that might seem to be useful, the homeowner attempts to build the structure. Even when each of the materials is of the highest quality, if the homeowner's prior construction expertise is limited, their tools are inadequate, or they lack a set of step-by-step instructions for the project, the gazebo is unlikely to turn out well.

Just so, we give our students the materials of an education through the courses they complete to earn a degree, but we don't always connect the knowledge they acquire in one class to their learning in another, nor do we clarify how their studies outside of their major relate to the profession the student hopes to pursue after graduation. Even within a major, the relationship between the knowledge imparted in the classroom and its application to professional practice may not be discussed explicitly. Students are left to puzzle out the connections for themselves.

Now let's extend the metaphor. To build anything, we need a set of tools. Someone working with excellent tools is more likely to achieve a good result than someone working with inferior tools. True, we can attach boards with either a hammer or a pneumatic nail gun, but the power tool will be far more efficient. Our students come to us with vastly different tool kits – their life experiences, upbringing, and the education they received in K-12 have a pronounced impact on their ability to be successful in college. Do we shrug our shoulders and say, "That's just the way it is," or should we try to improve the odds by building up the tool kits of those students who have not been gifted with the same high-quality experiences?

The same is true of access to support. If the homeowner has a friend or neighbor who's a professional carpenter willing to help when inevitable problems arise, it enhances the project's potential for success.

However, if the homeowner has no resources beyond carpentry tutorials on YouTube, their project is much less likely to turn out well. Just so, our students vary in the supports available to them. Having a parent with a college degree statistically increases students' likelihood of graduation. "One-third of first-generation students dropped out of college after three years, compared to 14% of their peers whose parents had earned a college degree," according to the National Center for Education Statistics.[25] Having a faculty mentor also contributes to students' success. Establishing a personal relationship with someone knowledgeable in the ways of higher education, such as a mentor, can make a crucial difference. Students trying to find their way through college by themselves might have to conduct an investigation just to find available campus services, then schedule an appointment with a stranger in an unfamiliar office before they can begin to get the help they need. Such tasks might be more daunting than whatever problem the student was experiencing in the first place, or it might be so stressful the student simply gives up. On the other hand, having someone to turn to who can help work through a problem, even if it's as simple as knowing where to go for help with a computer issue, can only help increase the likelihood of success.

Our educational system, composed of disparate departments and disconnected courses that exist within layers of administrative complexity, has evolved to a point where it's anything but student-friendly. Those of us who are employed within this system tend to lose sight of this fact. We also revert to the outdated belief that our students come to us ready for the challenge of higher education, able to shoulder the responsibility of navigating independently through their educational experience and constructing their own knowledge out of the building blocks of their courses. We don't pause to consider that we might be mistaken.

Views of Higher Education

The 2016 edition of the annual Gallup-Purdue Index revealed several key findings about the benefits of higher education.

- Americans with a bachelor's degree can expect to earn about $1 million more than those with a high school diploma over the course of their careers.[26]
- Since 2010, 86% of incoming freshmen have said that getting a better job represents a critical factor in their decision to enroll in college, compared with 73% of incoming freshmen between 2000 and 2009 who said the same.[*]
- College students and graduates exposed to people from different backgrounds learn key analytic and social skills and have a greater commitment to democratic values.[27]

[*] The Marist Mindset List (formerly the Beloit Mindset List) reveals fascinating information about how students' views about the world differ from the perceptions of older adults. For example, members of the class of 2023 think 9/11 is an historical event, the primary use of a phone is to take pictures, and the Tech Big Four (Apple, Facebook Amazon, and Google) are to them what the Big Three automakers were to their parents. See more at https://www.marist.edu/mindset-list .

- Gallup research demonstrates that college graduates who regularly interact with people from different backgrounds during their undergraduate experience are more than twice as likely to believe that their degree was worth the cost.

Despite findings such as these, we continue to wrestle with questions about the dual purposes of higher education. On the one hand, we embrace the inherent value of earning a degree, which includes values such as acquiring a common body of knowledge; developing the 4 C's of critical thinking, creativity, collaboration, and communication; and the resulting capacity to be an active and engaged citizen. Faculty tend to believe strongly in the intrinsic value of a liberal arts education, and they also strive to uphold the purity of their disciplines, apart from any instrumental purpose. A 2019 book *What's the Point of College*? *Seeking Purpose in an Age of Reform* by Johann Neem (Chair of History at Western Washington University) illustrates this view. During an interview about the book with *Inside HigherEd*, the author says,

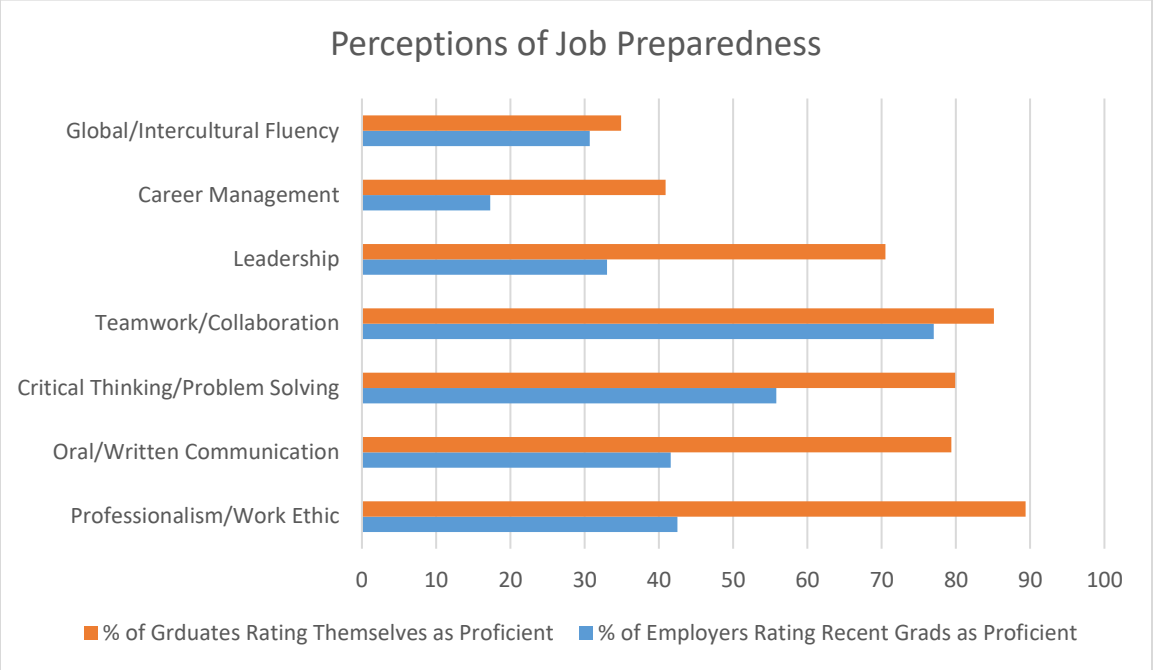
> If the purpose of college is to create more insightful generally educated people curious about the world, the benefits of that education are real (for the individual and our country) no matter what job a person chooses to do. That's why I do not think a four-year degree should prepare one for work in a narrow way. In a broader sense, however, all of us have a duty to contribute to the economy in order to provide the services and produce the goods on which we all depend. A thoughtful, educated person will be able to do these things more effectively and will also understand the purposes of their work more deeply. As a result, there are clear economic benefits to a broad general education in the arts and sciences.[28]

Neem agrees that society needs workers with specialized job training but believes it should be distinct from a liberal arts education and conducted at separate institutions. He also calls for ending business majors because their purpose is contrary to that of a liberal arts education. "Whatever financial payoff the business major may have, it detracts from the fundamental kinds of study that people in college should be doing. From this perspective, having business majors is 'unethical' because it goes against, and in fact can undermine, the ethos that collegiate institutions ought to cultivate."[29]

Neem's views echo those of many faculty, who cling to centuries-old beliefs about the intrinsic value of a liberal arts education, over and above any instrumental purpose such as preparation for a specific career. One has to wonder, though, how Neem imagines that graduates will be able to find work, since graduates' present and future employers do not share his idealism. "Gallup has found that barely one in 10 business leaders in the U.S. feel strongly that a college education equips graduates with the skills and competencies their business needs, demonstrating a need for colleges and universities to innovate in order to prepare graduates for life outside of college."[30] The Society for Human Resource Management (SHRM) published a five-part series in October 2019 examining business' attitudes towards new graduates that echoes Gallup's results. Employers surveyed feel that new graduates lack both hard and soft skills, indicating that they see "a huge gap between what people learn at four-year colleges and what we need them to do on the job."[31] Soft skills are the relational competencies that machines cannot replace, including communication, listening, critical thinking, and interpersonal skills – which a

majority of employers say are very important to gaining leadership positions in their companies. Hard skills are the knowledge and abilities required to perform a specific job. These might include understanding how businesses work, proficiency with common software such as Microsoft Office 365, computer programming, or tasks specific to a given professional field.

We can also identify a gap between graduates' self-assessment of their job preparedness and employers' perceptions. According to the National Association of Colleges and Employers 2018 Job Outlook survey, graduates rate themselves much more generously than do employers.



The skills gap between college and career is likely due to multiple factors, including graduates' prior work experience or participation in internships, changing norms in social interaction, increasing expectations by employers, and a lag in colleges' and universities' responses to these factors.

Lack of Prior Work Experience

A Pew Research study that shows today's young adults have much less work experience than any previous generation since recordkeeping began. In both 1948 and 1978, 57% of 16-19 year-olds had a paid summer job or had been employed in the prior year. In 2017, just 35 % reported having summer jobs, and by 2018 the figure dropped to 19%. In other words, only one 16-19 year-old in five held a job in 2017.

Furthermore, **"Only a third of college graduates had an internship during college where they were able to apply what they were learning in the classroom. But those who did were twice as likely as those who didn't to have a good job waiting for them upon graduation."**[32] Author Brandon Busteed, formerly head of the Gallup-Purdue Index, suggests that businesses are partly to blame for the dearth of

internships, since the primary responsibility for creating these opportunities lies with businesses, not universities. He also recommends examining the underlying reasons why the current generation of teen-agers does not choose to work, wondering if parental pressures for academic achievement might be a contributing factor for low rates of employment among high school and college students. Busteed says parents commonly say, "My child's job is to get good grades," but this ignores the non-monetary benefits students might gain from working. Academic achievement is important, to be sure, but it's no substitute for genuine work experience that allows young adults to develop the skills employers consider crucial.

The Rise of Digital Culture

Today's students do not participate in campus organizations or activities such as sports, music organizations, Greek life, volunteerism, the arts, and so on at rates comparable to that of previous generations. Instead of joining a club, students often prefer to join groups on social media and interact with one another digitally. They are more likely to post ideas or share photos online than to have a face-to-face conversation,[33] and they would rather join a chat or send text messages than use their phone to make actual calls.[34] Of course, digital culture has become a concern in many settings, worrying their parents, grandparents, teachers, and employers. This is not just because we find it odd that the younger generation prefers digital communication over interacting in person. Digital technologies cannot convey the depth of meaning of a face-to-face conversation.

> In face-to-face meetings our brains process the continual cascade of nonverbal cues that we use as the basis for building trust and professional intimacy. As a communication medium, face-to-face interaction is information-rich. People are interpreting the meaning of what you say only partially from the words you use. They get most of your message (and all of the emotional nuance behind the words) from vocal tone, pacing, facial expressions and body language. And, consciously or unconsciously, you are processing the instantaneous nonverbal responses of others to help gauge how well your ideas are being accepted.[35]

Digital media may be more convenient and efficient, but we build trust and minimize misunderstanding when we communicate face-to-face. Young adults whose primary interactions take place digitally may not learn the subtle communications skills of maintaining eye contact, being mindful of facial expressions, gestures, or body postures, and they may lack awareness of the impact of physical proximity (appropriate touch such as shaking hands, or issues of personal space) or being able to react quickly and appropriately to others. If we consider that hiring managers tend to be older adults with more experience in the business world, new graduates who are more comfortable with digital technologies than with interacting in-person could appear to lack those crucial soft skills that are prized by employers but not necessarily a by-product of students' classroom experiences.

Increasing Expectations from Employers

According to SHRM, college leaders say a bachelor's degree "was never meant to prepare students to hit the ground running on day one of a new job." Companies have higher expectations for new grads today than in the past, with job descriptions requiring extensive technical expertise in addition to the skills and competencies typically imparted through a four-year degree. SHRM Vice President Nancy Woolever,

who leads a team that facilitates communication between businesses and colleges, said she regularly asks employers about what they're looking for in new employees, "The consistent feedback we get from employers is at least a three-page list with three columns, single-spaced, everything from A to Z."[36]

As the workplace becomes more competitive and college degrees become more ubiquitous, prospective employers are empowered to demand more of prospective employees. Only a few decades ago having a college degree in any field was a considerable achievement, giving prospective job candidates an edge over their high-school-educated competitors. Today, a bachelor's degree has become a baseline expectation, often accompanied by specific lists of skills and requirements for at least two years of previous experience. This problem is exacerbated when new grads have not participated in an internship or held any kind of previous job.

Lag in College Degree Programs and Curricula

Higher education is not designed for agility. "It's like turning around [the ship] the Queen Mary. It takes time to get higher education to develop new skills into a curriculum," said Amanda Bergson-Shilcock, senior fellow at the National Skills Coalition. In addition, faculty and administrators might not welcome what they perceive as interference from outsiders. Jeffry Deckman, founder of an alliance between Rhode Island employers and colleges said that academic leaders, "are in an insular world…there's a bit of an elitist culture…[tenured] professors don't have to stay super-current…that makes an institution less responsive to companies, which have to adapt exceptionally fast."[37]

When colleges decide to change their curricula or programs, the process of adding even a single course requires a considerable amount of time, including layers of approval from committees and administrators. Expectations from the governing boards, accrediting agencies, or disciplinary professional organizations also influence curricula and degree programs, whether or not their requirements seem to align with what students or employers want.[38] Taken together, it's not difficult to see why degree programs change much more slowly than potential employers' expectations.

Hierarchy of Needs

Combined, these facts and figures paint a distressing portrait of the lives of our new graduates. Their studies might be inherently valuable, but when they are unable to find adequate employment, they are at a distinct disadvantage. We believe a college education will lead to a state of self-actualization in which graduates achieve their full potential as human beings able to engage at the highest levels of citizenship. That may be well and good, as far as it goes, but people cannot reach that goal until they first meet their basic needs for food, water, rest, shelter, safety, human relationships, and esteem. In the US, that means we must have an income sufficient to meet those needs, which we earn through our employment. Furthermore, the promise of higher education is that earning a degree will increase the probability of getting a good job and having a better life. How does someone have a better life if they're still working at a low-paying job that won't cover both rent and student loan payments, let alone buy groceries and put gas in their shabby old car? A study by the New York Federal Reserve found that only

27% of graduates actually find work in their field.[39] To look at this in another way, it means that 73% of our graduates do not find work in their field. That's an abysmal success rate and calls students' return on investment in a college education into serious question. All of our lofty rhetoric about the intrinsic value of a degree is meaningless if our graduates find the promise of higher education to be nothing but a scam.

The Big Six

Fortunately, there are concrete steps we can take to meet the challenges we face. The 2014 Gallup-Purdue Index drew the conclusion that *where* a student goes to college is far less important than *how* they go to college. This survey of more than 30,000 graduates measured workplace engagement, elements of well-being (purpose, financial, social, community, and physical), and alumni attachment to alma mater. The survey identified six factors that are "so strongly related to graduates' lives and careers [it] is almost hard to fathom…yet few college graduates achieve the winning combination." Only 3% of all those surveyed reported having all six of these key experiences, but even those who had just three or more experienced higher degrees of wellbeing and career engagement.

1. Professors who made them feel excited about learning
2. Professors who cared about them as people
3. A mentor who encouraged them to pursue their goals and dreams
4. The opportunity to work on a long-term project
5. Taking part in an internship or job where they could apply what they were learning in the classroom
6. Being extremely active in extracurricular activities and organizations during college.

The good news is that each of these factors is within our reach as educators and administrators, enabling us to take an active role in improving our students' experience during their collegiate years and enhancing the likelihood that they will go on to lead fulfilling lives after graduation. Let's look at each of these more closely.

First, we should never underestimate the impact that our attitude and demeanor as instructors have on our students' experience. Our passion for our discipline is contagious – the more excited we are about what we teach, the greater the positive effect it will have on our students. Sharing our ongoing research or creative practice, bringing interesting examples to class that we've gleaned in our professional development activities such as an article from a new professional journal that we can't wait to share with students, and simply demonstrating enthusiasm for our course content can dramatically affect students' perceptions.

Next, no matter how upbeat or enthusiastic we might be with the whole group, our interactions with individual students can make or break their learning experience. Students need to know that we care about them individually. Here, studio art and design faculty might have an advantage over the instructors of large lecture-based courses or online faculty where we seldom speak to students face-to-

face. Nevertheless, every interaction, no matter how insignificant it might be to us as instructors can have a marked impact on students. For example, when a student emails the instructor about a late assignment, we face a choice of whether we will remain firm on our stated policies or to react with empathy and kindness. We might be within our rights to insist that a penalty will apply, but compassion has a much more significant impact on the student and their subsequent views of their experience in our classrooms.

Mentorship often develops formally or informally between faculty and students majoring in our department. Students should feel that there is a faculty member who is a kindred soul – someone who understands their hopes and dreams and will work actively to help achieve them. Mentorship goes well beyond standard duties for student advising, where we meet with students only to help them select the courses they'll need to take in the next semester or when the student is in danger of failing. Mentors, in contrast, take a personal interest in the student. They ask what the student plans to do after graduation. They work with the student to explore graduate programs, complete grant applications, or write their resume. They write letters of recommendation, celebrate their students' successes, and help them through their disappointments. They express belief in their students' potential to succeed. The more skillful we are in building appropriate mentoring relationships with our students, the better the chance that students will view their educational experience positively.

Long-term projects (those lasting for a semester or more) allow students to engage deeply with a topic of investigation. Projects are even more impactful when they can mobilize as many of the "Four Cs" as possible.

- Collaboration and the ability to work well with others
- Communication across contexts and audiences
- Critical thinking and the ability to solve complex problems
- Creativity and innovation

We might also expand this list to include additional "Cs" characteristic of well-educated students who are prepared for success in their lives and careers.

- Content area knowledge
- Confidence
- Curiosity
- Citizenship
- Character
- Competency
- Compassion
- Courage
- Commitment
- Coping with complexity and ambiguity
- Cross-cultural understanding

These skills and characteristics aren't limited to long-term projects. We can embed them across the curriculum and in every academic discipline, but it doesn't happen by chance – we must make a deliberate effort to do so. "Broad learning skills are the key to long-term, satisfying, productive careers. What helps you thrive in a changing world isn't rocket science. It may just well be social science, and, yes, even the humanities and the arts that contribute to making [students] not just workforce ready but world ready."[40]

Providing students with practical experience through internships, externships, co-op, and practicum requirements allows them to apply prior learning to settings they're likely to encounter in the workplace after graduation. Furthermore, such opportunities help to build the student's professional network, broaden their understanding about career options, and introduce them to the norms of the workplace, all of which are essential to professional success.

Co-curricular engagement might seem like an unnecessary distraction, taking time away from study. However, research by scholars such as Astin (1993), Cress, Astin, Zimmerman-Oster, and Burkhardt (2001), Kuh (2008), Wolf-Wendel, Ward, and Kinzie (2009) demonstrates that students who participate in purposeful co-curricular activities experience positive effects on their academic success, retention, and persistence. George Kuh (1995 and 2011) also reported positive outcomes such as an enhanced sense of belonging, capacity for humanitarianism, and growth in student's interpersonal and intrapersonal competence.[41]

We tend to measure an institution's success by its alumni outcomes: their employment statistics, graduate school placement rates, or their annual salaries. These might be useful metrics, but they don't reflect the missions of our institutions, nor do they tell us about our graduates' quality of life. If we only consider employment and salary, then we'll see what we expect to see: graduates of highly selective institutions tend to fare better than others. The Gallup-Purdue Index's more holistic measurements revealed a startling truth: "where graduates went to college — public or private, small or large, very selective or not selective — hardly matters at all to their current well-being and their work lives in comparison to their experiences in college."[42] This should give all of us in higher education reason to hope that we can rise to the challenge before us. Not every institution can achieve the results of the Ivy League, but all of us can improve our students' lives and futures by implementing high impact practices that take Big Six from theory to everyday practice.

Why?

Our journey thus far has covered quite a bit of ground, so let's stop to connect the dots and set the stage for our examination of high impact practices. First, we should return to the dismal statistic that 70% of high school graduates begin college but less than 25% of the general population has earned a college degree. Even accounting for the fact that older generations were better able to find sufficient

employment without a college degree and consequently never attended college, this figure should be a call to action. What causes this high attrition rate?

Why are students unsuccessful?

Faculty sometimes presume students drop classes because they're failing academically or because they just don't care, but is this true? A study by Oakton Community College[43] revealed that only 20-30% of students discontinue their studies due to academic difficulties. The other 70-80% leave for a variety of other reasons:

- Financial: they cannot afford tuition, fees, books, and other expenses.
- Instructional: they don't understand what to do in their courses, and do not ask for help because they perceive their instructors as being inaccessible.
- Social: they are unable to make friends or find a social group on campus.
- Institutional: they do not know how to navigate academic systems such as course registration or financial aid.
- Personal: they lack skills such as time management or study strategies.

None of the factors influencing students' success exists in isolation. For instance, students' personal problems with time management will affect their academic performance. Because they don't do their work on time; they won't be able to find time to establish peer relationships that meet their social needs. They don't get the full benefit of instruction because they show up late to class or forget to attend class altogether, and courses failed due to the students' poor time management then increase the students' financial burdens. Each problem is connected to the others, becoming an insurmountable obstacle that causes the student to abandon their studies altogether.

Why should we care if students graduate?

Academic success is simultaneously an individual matter and an institutional concern. Gallup tells us that students' perception of whether their professors care about them as people has a powerful impact on their success. One student who fails our course might have little impact on us personally, but for that student, failing a course could be the difference between graduating or not. On the other hand, faculty have a personal stake in student success because we're often evaluated, at least in part, on the number of students who drop or fail our courses. Beyond our personal interests, academic programs cannot survive without sufficient enrollment. If students habitually drop or fail certain courses, the program could be in danger of closure, which would necessarily impact faculty jobs. At the institutional level, retention, persistence, and graduation rates are seen as an indication of the institution's quality, especially on comparison sites like US News, CollegeFactual, Niche, and so forth. Therefore, we have four distinct reasons to care about our students' success:

1. We value them as individuals.
2. We care about how our students' success affects our professional evaluations.

3. We care about how their achievements impact the academic program in which we teach.
4. Their success affects public perceptions of our college or university's quality and contributes to its reputation.

Why does this matter?

Many faculty would prefer not to think about these issues. We'd much rather focus on our research or creative practice, teach our courses in the same way we've always taught them, and quietly fulfil our contractual expectations for service. Big-picture thinking is usually beyond the scope of our day-to-day professional lives. The problem is that deans, provosts, and presidents alone can do only so much to impact the quality of individual students' educational experience or facilitate their academic success. How could a mere handful of administrators bear sole responsibility for thousands of students' success? Why should those same administrators be the only people on campus thinking about the impact of student success on the future of the institution? Rather, we should all be concerned with matters beyond the normal scope of our day-to-day responsibilities. *Everyone* who works in higher education should look beyond departmental or disciplinary concerns to consider the big picture.

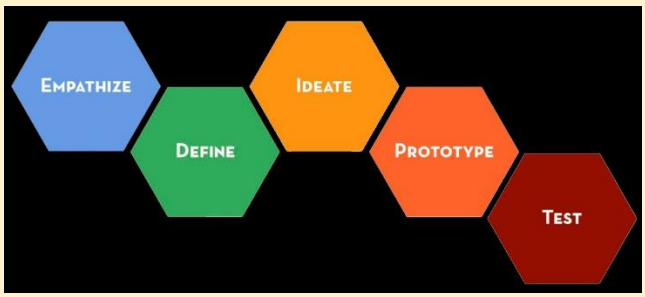
Recap

- Higher education had changed dramatically from its colonial roots, now serving a student population who no longer fit the traditional profile our programs were designed to serve. We cannot reasonably continue to utilize 18th-century pedagogies with 21st-century students.
- The structures of higher education are highly complex yet lacking in cohesion. Students must navigate independently through their educational experience and make their own connections between and among their learning in disparate academic fields, but their high rate of failure attests to the necessity for change. It's our responsibility to make sure students have appropriate tools for learning and a set of clear instructions to follow, plus the support they need, so that they can achieve their goals. Our ability to facilitate connections will make the difference between success and failure.
- Higher education has always had a dual purpose in imparting the knowledge and skills of the liberal arts alongside preparation for a career. Faculty strongly support the intrinsic value of earning a degree, whereas students seek a degree to prepare for careers that they believe will lead to a better life. This is not an either-or proposition. Both purposes have merit and need not conflict with one another.
- Employers do not feel that today's graduates are well-prepared for the workplace, either with the soft skills thought to result from the liberal arts or hard skills necessary for particular careers. Institutional change is slow, but our choices as individual faculty members can have a significant impact much more quickly.
- Students too often fail to earn their degrees. We in higher education must re-evaluate our systems, practices, and pedagogies to better facilitate our students' degree attainment and to prepare them for productive lives as engaged citizens.

Some of the high impact practices we'll discuss in the next chapter require systemic transformation, while others are within the reach of individual educators. The most important thing to remember as we move forward is that all of us can have an impact, regardless of how our departments, colleges, schools, or universities choose to proceed.

A Note about Design Connections

Design thinking typically follows a sequence of actions represented by a familiar pattern of interlinking hexagons, popularized by Stanford University's d.School.



> *The Design Thinking process first defines the problem and then implements the solutions, always with the needs of the user demographic at the core of concept development. This process focuses on need-finding, understanding, creating, thinking, and doing. At the core of this process is a bias towards action and creation: by creating and testing something, you can continue to learn and improve upon your initial ideas.*[*]

As we apply the five steps of design thinking to our work as educators, we can align our efforts with the three key questions of why, how, and what.

- **Why? = Empathize**: Seek to understand the needs and wants of the user for whom we're designing – our students.
- **How? = Define and Ideate**: Combine the insights gained during the "empathize" phase with knowledge of available resources, present policies, best practices, and institutional priorities to generate potential strategies or solutions.
- **What? = Prototype and Test**: Use the concepts generated during "ideation" to plan and pilot prototype courses and programs, applying continuous improvement through thoughtful assessment, then re-defining and refining our efforts so that we may better serve our students' needs.

Design Connection		
WHY? Empathize	HOW? Define and Ideate	WHAT? Prototype and Test
Why should we incorporate high impact practices in our teaching throughout higher education? Our systems, structures, and pedagogies have not kept pace with the changing needs of our student body nor with expectations for graduates in the work world. Furthermore, too many students are unsuccessful. We must adapt to these needs and conditions so that we can serve our students.	How will we incorporate high impact practices? Ideation begins with the facts presented here, and then builds on them with strategies for innovation and action steps by which we can apply them to our work as educators. Our task is to break free from our ingrained habits of mind to identify possibilities and potentials we've never before considered so that we can achieve results we've not yet attained.	What will we do? High impact practices can include systemic or structural change, which requires both vision and teamwork to achieve. They can also include strategies that individual instructors can implement in their classrooms, through their pedagogical practices and in their relationships with students. Teaching is an infinitely iterative process. Each time we teach a course, we have the opportunity to improve our practice as educators. Institution-level change may be slow, but each of us can begin to implement positive transformation within our classrooms, labs, or studios.

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Part 2 – How? First-Year Experiences

The Association of American Colleges and Universities (AAC&U) supports a national initiative with the acronym of LEAP – Liberal Education and America's Promise. LEAP encourages dialog about the fundamental nature of higher education, provides guidance for students, and promotes a framework for excellence beneficial to all students in achieving the essential outcomes of a liberal education: "broad knowledge, intellectual and practical skills, personal and social responsibility, and integrative learning," especially for "students who, historically, have been underserved in higher education."[1] LEAP upholds the dual purpose of higher education as it responds to "contemporary demands for more college-educated workers and more engaged and informed citizens."[2]

High Impact Practices (HIPs) are among LEAP's focus areas, along with essential learning outcomes, principles of excellence, authentic assessments, and an initiative promoting a nationwide requirement that all students complete a "substantial cross-disciplinary project in a topic significant to the student and society."[3]

HIPs share a set of Eight Key Elements.[4] Not every HIP will demonstrate all eight, but they frequently include four or more.

- Performance expectations set at appropriately high levels
- Significant investment of time and effort by students over an extended period of time
- Interactions with faculty and peers about significant matters
- Experiences with diversity, wherein students are exposed to and must contend with people and circumstances that differ from those with which students are familiar
- Frequent, timely, and constructive feedback
- Periodic, structured opportunities to reflect and integrate learning
- Opportunities to discover relevance of learning through real-world applications
- Public demonstration of competence

So, why are these important? Educational psychologists such as Jean Piaget (1936)[5] and Jerome Bruner (1957)[6] and neuroscientists (Kandel, 2012[7]; Eagleman, 2015[8]) explain that the human brain learns by making connections between new knowledge and prior learning. The more we can strengthen those connections, the deeper our learning. Practice and repetition are a key to learning, but the more we conduct this practice within authentic settings, the more effective and satisfying our learning will be. The human brain not only connects new learning to prior factual knowledge but to emotions, experiences, sensory input, and actions. Conversely, it's far less effective to learn by rote (simple memorization) or in isolation because the new knowledge lacks connection to anything other than itself.

HIPs are all about building connections. When we strengthen students' relationships with faculty and peers, embed learning in real-world contexts, and increase student engagement with the topics they're studying, we can deliver an educational experience that empowers students' academic achievement and

strengthens their ability to form their own connections between their education and their lives after graduation.

First-Year Experiences

The transition from high school to college marks an exciting personal milestone for students, but it can also be a monumental change for which they are ill-prepared. K-12 public education remains a highly structured environment in which students have minimal choice in what, where, when, how, and with whom they will study. Teachers rarely leave students unsupervised and rigid systems of rules ensure compliance with performance expectations. College offers a great deal more independence, but this unaccustomed freedom also demands a higher degree of personal motivation and responsibility. Students living on campus no longer have someone to wake them up, ensure they've eaten breakfast, and drive them to school on time. Absences from college classes usually result only in grade penalties – a vast leap from a parent receiving an urgent phone call from the school's secretary when their child fails to show up in class. Parents and teachers closely supervise K-12 students' homework completion, but college students are expected to take responsibility for their own learning and choose to do their work, sometimes remaining unaware of any penalties they've incurred for non-compliance until the course is over. Colleges hold classes in multiple buildings across the campus, whereas high schools tend to be contained in a single building. High school schedules are usually consistent throughout the week, with a given course meeting at the same time in the same room every day. College schedules follow a much different pattern – some classes meet twice a week, some three times, some only once, during the day, in the evening, or on weekends. All told, we expect college students to make the leap from a very structured highly-supervised environment into a setting in which they must be self-directed, independent, and responsible. Compounding the problem, students may lack essential skills such as time management, appropriate communication, self-care, respect for rules and policies, or character traits such as honesty, integrity, or perseverance. As much as faculty may wish parents had instilled these skills long before their children arrived in our classrooms, college-readiness is no longer a logical baseline assumption, as we discussed in the previous section. Our students come to us with all manner of prior skills and abilities, and we have no power to ensure that they are prepared to live up to our expectations.

First-year seminars or experiences arise from institutions' recognition of these problems, beginning at the University of South Carolina in the 1970s.[9] As of 2010, 95% of four-year institutions offered a first-year seminar[10] and that estimate may well have increased over the intervening decade. Of course, each college or university places its own stamp on the first-year experiences it offers, but research by Hickinbottom, et. al. shows that they tend to share the goal of increasing retention by strengthening student engagement and fostering academic success. This generally takes place by helping students (1) develop a connection with the institution; (2) familiarizing students with the campus's resources and services; and (3) helping students develop academic skills.[11]

Syllabi and popular textbooks for first-year seminars reveal a set of common practices:[12]

1. Explaining the benefits of participating in higher education including increased earning potential, self-knowledge, development of critical thinking, an appreciation for diverse cultures, improved social skills, or enhanced personal traits such as self-confidence.
2. Providing informational content about the institution's student resources, offices with which students will need to interact, policies and procedures, etc.
3. Instructing students in crucial academic skills such as critical inquiry, writing, collaborative learning, information literacy, and academic honesty.
4. Discussing personal competencies and abilities including time management, course attendance and punctuality, financial responsibility, study skills, maintaining physical and mental health, coping with stress, building appropriate relationships with peers and faculty, communicating effectively, self-advocacy, and knowing how to find and receive help when needed.
5. Scheduling meetings with advisors to discuss students' career goals and choice of major, and mapping a plan of study allowing the student to finish the bachelor's degree in four years.
6. Facilitating student participation in co-curricular groups and organizations.

On the surface, the goals and practices of first-year experiences appear to align well with institutional practices and presumptions. We tend to believe that all students are "capable of high levels of academic achievement, satisfaction, and vocational success through learning and utilizing skills aimed at developing self-discipline, self-management, and self-regulation." While institutions define success in terms of improving retention and graduation rates, for students, success means, "obtaining good grades in as stress-free and enjoyable a manner as possible, in order to complete their degrees efficiently and achieve satisfying and well-paying employment."[13] First-year experiences are intended to serve both priorities.

The Generic Fallacy

The purposes and goals of first-year seminars are worthy and valid, but we should be wary of over-simplifying our methods of delivery by presuming that skills are equally applicable to any context – something philosophers call the "generic fallacy."[14] For example, most of us would agree that the goals of higher education ought to include producing graduates who are critical thinkers, and that critical thinking is an essential skill students need to be successful in their studies. However, developing the capacity for critical thinking depends on more than a lesson or two in a first-year seminar. It also requires an understanding of logical reasoning and functional knowledge of the domain within which the critical thinking takes place. To think critically about the results of a chemistry experiment is a much different proposition than thinking critically about a political speech. Therefore, basic instruction in critical thinking within a first-year seminar is good, but isolated instruction offers insufficient preparation for applying the skill in other contexts.

Likewise, faculty often remark that their students "don't know how to write," wondering aloud how they could ever have passed their high school English classes

> We can identify a few reasons for this frustrating situation. First of all, students tend to compartmentalize their learning, seeing writing as something occurring in an English class but not necessarily as important in their other courses. This is not entirely incorrect: many fields do not ask students to write very much. In fact, students might encounter their first substantial writing task, such as a 10- or 20-page research paper, only near the end of their undergraduate experience or perhaps not even until they reach graduate school (depending, of course, on their major). Next, every discipline has its own expectations for professional-grade written communication. This goes beyond the choice of APA, MLA or Chicago style guides. The vocabulary we use, the way we construct an argument, whether we use or avoid personal pronouns, whether passive language is acceptable or anathema – all these factors and more influence the norms and practices of our written communication.[15]

Next, students tend to be practical and task-oriented rather than seeing the larger purpose behind our course content. When given an assignment, they usually put a varying amount of effort needed to earn an acceptable grade (depending on the thoroughness of instructional design[*]), then they turn their attention to the next course requirement. Instruction can seem like nothing but a simple transaction: they do the work, we give the grade. As much as we'd like to think that our students naturally perceive and internalize the true value of everything we teach, they don't always do their work because they perceive its intrinsic value – their goal is only to fulfil our expectations. If we want to break free of this model, we have to go a step farther and intentionally foster our students' understanding through careful and deliberate instruction coupled with genuine opportunities to apply the skill in real-world contexts.

The content of our first-year seminars, therefore, cannot simply focus only on conveying knowledge or teaching essential skills alone. We must also help students make connections to the intrinsic value of our course content and teach them to apply their new knowledge and skills in specific contexts beyond an activity or assignment. In other words, we must help them develop their understanding of *why* the topic or skill we want them to acquire is important, *how* to achieve success at this skill or understanding of the knowledge, and *what* this knowledge or skill looks like outside of the course. This best practice aligns with TILT Higher Ed, a research initiative emphasizing transparency in learning and teaching.[16]

If we apply this practice to our first-year programs, we aren't content with saying, "This is where the Student Success Center is located and here is a list of services they offer." Instead, we schedule class period at the Student Success Center, beginning with a warm welcome from the Center's director, a tour of the facility, and individual meetings between students and Center personnel, who schedule a follow-up meeting two weeks later to check in with the students and discuss their college experiences thus far. Likewise, teaching students how to write a good topic sentence is worthwhile, but deep learning of this skill is far more likely if the instructor:

- explains why the skill is important both in their collegiate experience and future profession

[*] Personal experience shows that, when given a rubric and clear directions for an assignment, students tend to achieve higher grades and demonstrate more understanding about the value of the assignment to their learning. In the absence of this best practice in instruction, they tend not to rise to the challenge.

- provides examples of good topic sentences in disciplinary writing
- asks students to practice writing topic sentences for different purposes and share their work with peers
- provides feedback on their efforts and opportunities for revision of their writing.

We know the human brain learns by making connections. If we truly care about equipping students with the tools for success in their first-year experiences, we can't just lecture and discuss. Instructors should connect new learning to students' prior knowledge, embed it within a social and emotional context, and ensure opportunities to receive and develop new skills and knowledge through active learning strategies and practical application. When we do, our students are much more likely to perceive its value, remember it beyond the final exam, and be able to apply it in other contexts.

What Works and Where

First-year experiences are not created equal, especially given their increasing ubiquity. We could examine dozens of excellent examples, but for the sake of brevity, let's briefly consider four outstanding programs.

Arizona State University[17]

- ASU assigns incoming students to a peer coach in ASU's First-Year Success Center. Coaches discuss students' goals and dreams, helping them plan a program of study. They also recommend additional support such as seminars for students who are the first in their family to attend college. Students can connect with their peer coach in person, with additional options for phone consultation or Zoom video chat.
- Before they arrive on campus, new students meet "Sunny," a chatbot capable of answering questions via text message. Sunny sends encouraging messages, prompts students to contact their advisor, or messages them if they miss a class. Sunny can also connect students to resources such as the campus fitness center or counseling services. The ASU mobile app provides further personalized content including success tips for the first year, reminders of upcoming deadlines, and more.
- The first-year experience kicks off with a university wide celebration that includes the "Sun Devil Welcome," that gathers the entire class together to hear from ASU's president in a high-energy pep-rally-style event designed to immerse students in ASU's distinctive spirit, pride, and traditions.
- All first-year students enroll in ASU 101, a seminar that teaches time management, academic integrity, best practices for academic success, and conveys the university's values of sustainability and entrepreneurship.
- Students have additional options such as learning communities or the LEAD program – a cohort-based learning environment concurrently incorporating other general education requirements. LEAD fosters a sense of community while building students' skills in leadership, communication,

presentation, team building, emotional intelligence, stress management, mindset, and expressive writing.[18]

Bard College

- Like ASU, Bard College employs a mobile app to help students stay on top of events and information, connect with students and faculty, and receive information about important deadlines.
- All of Bard's first-year students participate in a common curriculum of three courses.[19]
    - The Language & Thinking Program meets for the last three weeks of August prior to the start of regular classes, providing an immersive introduction to liberal arts and sciences in conjunction with a focus on writing. Students meet in small groups and participate in one-on-one conferences with faculty. They also work on collaborative projects, read, and write extensively. The program nurtures academic skills of thoughtful reading and discussion, clear communication, self-critique, and collaboration. Successful completion is required for advancement into fall courses.
    - Citizen Science takes place in January prior to the start of the spring semester and is required for all first-year students. The course is a two-week intensive designed to develop students' scientific literacy, encouraging them to develop the skills needed to interpret scientific claims, to understand how the interpretation of science is subject to influence by political and social factors, and to become aware of the role citizens play in scientific issues. The course's focus changes yearly. In 2019, all 450 participants collected water samples from their hometowns over winter break, and their investigations with these samples during Citizen Science became part of the coordinating faculty member's professional research, empowering students to understand their contributions to an ongoing and socially valuable investigation while also building their academic and intellectual competencies in science.[20]
    - First-Year Seminar is a yearlong course that develops students' intellectual, cultural, artistic, and historical understanding through discussion and writing centered on core texts aligned with a yearly theme. The seminar's aim is to foster deep analytical thinking while also expanding upon the skill development begun in the Language & Thinking program.[21]
- Bard assigns all first-year and transfer students to one of four "houses," or faculty-led communities that foster a sense of tradition and belonging. Each "house professor" leads events and activities designed to build community such as dinner and movie evenings or excursions off campus. House professors and their families live on the campus, maximizing their availability to students and opening their homes for weekly study breaks or social gatherings for house members.

Stanford University

- All first-year students are assigned to a Stanford Newcomer Guide, engaging in frequent conversations about transitioning to college. Students also meet with Academic Advising Directors based in student residences to plan their studies.[22]
- Faculty from every school at Stanford teach Introductory Seminars, each capped at 16 students. Many of these courses fulfil general education requirements or writing requirements. Freshmen have priority registration for "Intro Sems" but other students may also enroll, based on availability.[23]
- First-year students can opt to enroll in "Frosh 101" to receive further support with their transition to campus. Each section is led by two upper-class students who build community through weekly discussion and activities designed to help students establish friendships, gain advice from mentors, develop stress management tools, grow in empathy and perspective, co-create community, and more. Stanford also offers a section of "Transfer 101." Sections are held in the evening at or near the residence halls and meet once a week for 90-minutes during the Autumn quarter.[24]
- Stanford offers an extensive array of "Thinking Matters" courses that develop students' capacity for critical thinking. "Along with acquiring the tools of critical inquiry, students engage actively with diverse topics and approaches to answering fundamental questions and solving real-world problems."[25] The goal of Thinking Matters courses is to learn how to "think like a Stanford student," … "Getting comfortable with ambiguity, disrupting set thought patterns, and participating in productive debates … What emerges from this process are self-confidence, self-discovery, and new ways of understanding the world."[26] Students can also satisfy the Thinking Matters requirements through two other options. "Education as Self-Fashioning" combines seminar courses along with writing and general education requirements. Integrated Learning Environments are residential communities featuring the arts and culture or the liberal arts. Group sizes remain small and focus on building relationships as well as delivering course content, engaging students intellectually and emotionally, and preparing them for the rigors of a Stanford education.

Georgia State University

- All first-year students participate in a Freshman Learning Community.[27] Groups of 25 students enroll in the same set of five courses centered on an academic theme, or "Meta Major" and integrating a support team. Options include:
    - STEM
    - Business
    - Arts and Humanities
    - Policy Studies
    - Health
    - Education
    - Social Sciences

    - Undeclared
- One of the five courses is GSU 1010, an introduction to Georgia State and the resources available to students. The other four courses tie into the Meta Major but are applicable to any path the student eventually chooses to follow, even if in a different field.
- All incoming students participate in a "First-Year Common Read" – a new book is selected yearly, with the goal of promoting academic discourse and critical thinking, introducing students to the expectations of higher education, integrating academic and social experiences, raising awareness of cultural issues, and building a sense of community.[28]

Take-Aways from Exemplars

We might notice some common themes running through these four exemplars.

- Use of **personalized technologies** to reach out to students frequently, directly, and interactively. Students prefer to communicate via text messaging or apps rather than email or telephone.[29] Direct communication via students' preferred media increases the likelihood students will pay attention to the messaging and respond when prompted in the app. Bard's mobile app or ASU's "Sunny" chatbot and their extensive use of other digital communications with students recognize that students communicate differently than older generations' preferences for email, telephone calls, or announcements posted to a website.
- **Large-group events**. High-energy, exciting celebrations and events like ASU's "Sun Devil Welcome" can increase students' initial engagement with the institution and facilitate their assimilation into its culture, helping develop a sense of belonging and school pride. We've all encountered alumni who remain passionate about their alma mater, seen in their lifelong use of catch phrases like the University of Alabama's "Roll Tide," the University of Texas' "Hook 'Em Horns" hand sign, or preference for wearing their alma mater's branded merchandise. Studies have shown that the degree to which alumni identify with their alma mater is the strongest predictor of their likelihood to give back to the institution, either through volunteerism or financial gifts (Weerts and Ronca, 2007[30]; Dillon, 2017[31]). These relationships take root during students' early experiences at the institution and grow commensurately with the quality of their interactions throughout their college years. Therefore, our investment in building an emotional connection between incoming students and the institution goes both ways: it supports students' sense of belonging, which improves their likelihood of persistence and retention. This success bears fruit for the institution once those students become alumni who choose to give back to the institution.
- **Grouping students by interest or choice**. Engaging students' interest is the key to effective teaching. Georgia State's approach to grouping students by "meta major" targets their first-year experience within the field they intend to pursue, with an option for students who remain undecided. This fosters connections between the essential skills taught in the first-year seminars and the ways of thinking common to the field in which students plan to study. Stanford's "Thinking Matters" courses offer a broad array of choices from which students are

likely to find many attractive options, allowing them an opportunity for exploration and to connect with others who share their interests.

- **Focus on building relationships**: Evidence we examined in Part 1, particularly the Big Six identified by Gallup, undergirds the strong correlation between building relationships and both students' academic success and graduates' views regarding the value of the education they received. Keeping group sizes small and incorporating interactive experiences facilitates this process.
    - Student-to-student within a cohort group: working on collaborative projects or participating in a shared experience helps students connect with one another.
    - Student-to-faculty: small groups facilitate interpersonal interactions with faculty, building trusting relationships that encourage students to seek help or ask questions. Engaging students in faculty research or professional practice also helps to form connections between classroom learning and practical application. Bard's "houses" and its "Learning & Culture" and "Citizen Science" programs exemplify best practice in this area, as does Georgia State's Freshman Learning Communities.
    - Incoming student-to-experienced student: someone who has successfully mastered the student experience can be an invaluable resource to new students who are still trying to understand how college works. Peers can offer unintimidating support and provide a perspective built on recent personal experience. Stanford's "Newcomer Guides" and ASU's peer coaches serve as good examples of this practice, pairing all incoming students with a peer who keeps in regular contact with them and helps them navigate the complexities of the university.
    - Student-to-staff (advisors, mentors, student success personnel): our campuses offer a wide variety of support to students but we've traditionally presumed it's the student's responsibility to seek this out for themselves. First-year seminars that introduce students to these services directly and connect students to individuals who work there help to break the ice, easing future interactions when assistance might be needed. After all, knowing where the Student Success Office is located on campus is one thing, but having visited the office and spoken personally to one's designated Student Success Counselor is entirely another. The same is true of interpersonal connections with residence hall personnel, academic advising, health services, and more. The better we know our students and our students know us, the better we are able to anticipate their needs and to offer assistance when it's most needed.
- **Meaningful and engaging connections between the content of first-year experiences and real-world or academic applications**. First-year experience courses focusing only on teaching essential skills in isolation tend not to be particularly effective, nor do students see them as valuable.[32] Embedding essential skills in engaging academic content, as seen in Stanford's "Thinking Matters" courses or Bard's "Language & Culture" and "Citizen Science" seminars conveys the requisite academic skills and competencies while also allowing students to practice them in a context that affords genuine application of those skills and captures students' interest, leading to a higher quality learning experience.

Action Steps

Knowing what to do is not the same as understanding how to do it. How can we take what we've learned about first-year seminars and apply it in our own programs? Each institution of higher learning has a distinct set of existing assets and an equally distinct collection of needs. The more we can learn about these factors, the more likely we are to achieve success. The following discussion of action steps presumes that a special-purpose committee will undertake the task of establishing or revamping first-year experiences at their college or university. It also follows the principles of design thinking, leading committee members through a productive five-step process of empathize, define, ideate, prototype, and test.

1. **Empathize**. Design thinking begins by developing empathy for the user of a product or service. This aligns well with first-year programs, seminars, or experiences because they depart from traditional sink-or-swim attitudes towards incoming students and forego insistence upon college-readiness. Instead, they presume a position of empathy for students, a desire to facilitate their success, and concern for their wellbeing both while they are students and after they earn their degrees. Granted, some of this concern might be more pragmatic than compassionate, since statistics for enrollment, retention, persistence, graduation, and alumni career outcomes influence public perceptions of our institution's quality.

   Developing empathy for students involves setting aside our preconceptions and speaking directly with them about their needs, hopes, and experiences. Surveys, interviews, and shadowing students can be effective tools for gaining empathy for students and deepening our understanding of their experience. It might also be worthwhile to include student members on the first-year experience committee so their voices are represented throughout the process.

   Key Questions
   - How can we learn what students want in a first-year experience, program, or seminar?
   - What are students' greatest challenges or difficulties in their first year of study at your institution? What do they think would be most helpful in overcoming these problems?
   - Given what we learn from students about their first-year experiences, how should our investigative process proceed?

2. **Define. T**he next step in design thinking is to gather data to gain as comprehensive a perspective as possible, studying existing assets, needs, external exemplars, and best practices in first-year programming.

   a. **Identify Your Assets**. Because first-year seminars or experiences have become ubiquitous across higher education, your institution may already have some kind of program in place or may have attempted one in the past. The first step, then, is to examine existing efforts to determine what components are effective. You might want to begin by speaking directly to the individuals who administer or direct such programs, asking about their successes and

identifying which aspects of the program they value the most highly. These individuals can also provide data about the program's outcomes in support of their opinion that these components are successful.

Colleges, schools, or other academic units within your institution may have their own programs for first-year students, which naturally vary by disciplinary identity. Reach out to each dean, chair, and program director directly and ask how they presently facilitate the success of their incoming students. Ask which of their faculty members are beloved by their students or have a special affinity for working with new students.

Committees tend to use passive strategies for data collection such as investigating departmental websites to see what they might have published about their support of first-year students, or sending a blanket email to all administrators along the lines of, "The First-Year Experience Committee is seeking information about departmental efforts to facilitate student success. Please let us know if you have any examples to share with our committee." These may be ineffective because they're much too easy for our intended respondents to ignore. If your goal is to gather high-quality information, you'll achieve better results by scheduling a face-to-face appointment with the appropriate administrators. It also helps to provide your questions to the interviewees ahead of time so they can prepare a response.

Key Questions:

- What programs do we currently have in place for all incoming students?
- What works well? What do we want to keep or continue?
- Which colleges/schools/departments/programs offer successful or high-quality support for incoming students? What can we learn from these examples that could be expanded to serve all incoming students?

b. **Identify Your Needs**. Examining your institution's student outcome data provides a good starting point in determining areas of need. The more specific this investigation and analysis can be the more useful the data it can yield. What common threads can you identify between students who persist and those who discontinue their studies? Do certain professors or departments demonstrate comparatively more or less student success than others? If so, what do the successful exemplars do that the unsuccessful exemplars don't do?

Surveys can yield useful data regarding students' needs. The tricky part of surveys is eliciting participation. Response rates increase when surveys correspond to the audience's preferred communication modes,[33] so pushing a survey out to students via a smartphone app may collect a more comprehensive data set than an email invitation to participate. Faculty, on the other hand, tend to be comfortable with email but they may overlook the request or delay in responding. It might be helpful to utilize the following strategies for increasing response rates:[34]

- Informing participants of the purpose of the survey and expressing appreciation for their participation. Participants who understand the value of the survey are more likely to respond.
- Keeping the survey brief. Most survey takers are willing to spend only five or fewer minutes answering questions.[35]
- Informing participants how long the survey will take them to complete before they begin. Use a progress bar if longer than ten questions.
- Administering the survey when participants gather in one location, such as a departmental meeting or faculty development seminar. This reduces the natural tendency to delay the task of responding.
- Embedding the survey in the university's website so it pops up immediately after a user logs in. Users must respond to the questions before gaining access to the site. This works best for surveys of three or fewer short questions. (Users tend to resent this type of survey, so use with caution.)
- Incorporating open-ended responses, rating scales, and sliders to increase participants' interest in the survey content.

Interviews with people who work most closely with first-year students can be another source of valuable data regarding student needs. Again, it's best to schedule face-to-face meetings and provide the questions ahead of time so that interviewees can be prepared for the conversation.

Analyzing the data gathered will help the committee form a more complete picture of specific needs, but it may also identify more problems than a first-year program can address. In that case, thoughtful prioritization becomes necessary, focusing on the most significant areas. For example, building students' critical thinking is a common focus area of first-year experiences, seen in Stanford's "Thinking Matters" and Bard's "Literature & Culture" and "Citizen Science" courses. ASU, Bard, Stanford, Georgia State, and many other institutions offer a "College 101"-style course. However, the degree to which these are effective and valued by students depends not only on conveying important information but building relationships, engaging students in the life of the institution, and helping them develop an identity as a member of the college community as well as developing students' writing, critical thinking, problem-solving, collaboration, study skills and life skills.

Key Questions:

- Where can we identify significant areas of need among our first-year students?
- What support do they need?
- How can we decide where best to invest our efforts to maximize students' success?

c. **Look for Good Comparisons**. Colleges and universities often compare themselves to one another, usually looking at peer institutions or aspirational models. With regard to first-year experiences, it might be most useful to identify successful first-year programs at institutions

with similar student demographics and comparable characteristics such as institution type, size, focus, or selectivity. Stanford has an exceptional first-year program, but as a very large, highly selective, private university, it might bear too few similarities to provide a useful comparison for a committee looking into first-year programs for a small public regional comprehensive university with a more open enrollment policy. Likewise, a large public research university might decide to look most closely at a peer such as Georgia State but not a small private college like Bard.

Nevertheless, even significant discrepancies should not dissuade committees from studying programs at institutions dissimilar to their own so long as committee members remain aware of issues of scale, feasibility, funding models, and logistics. For instance, in 2019, Bard College enrolled 470 incoming first-year students[36] whereas Georgia State admitted 4,600[37] and Arizona State welcomed nearly 14,000.[38] The "house" system that is so successful at Bard might not be a good fit for Arizona State since it serves nearly 30 times more students. Likewise, it's hard to imagine a small college like Bard being able to replicate the 40+ "Thinking Matters" courses at Stanford.[39] The committee should glean inspiration from these models yet consider how they can be adapted to fit the distinctive characteristics of their institution.

When conducting this investigation, the committee should attempt to discover the means by which the other institution supports, organizes, staffs, schedules, and sustains its programs. The underlying structures of higher education might seem inflexible and unchangeable, but innovation often requires us to question these underlying assumptions. When we see how another institution manages to staff its first-year programs with experienced faculty who are highly motivated to ensure their students are off to a good start in their college experience, or when they find a way to create and sustain new technologies that improve the student experience, we can learn from their examples. Therefore, the committee cannot be satisfied with a survey of publically available information about other institutions' programs. Committee members should plan to contact the persons in charge of the most promising exemplars and ask questions that go beyond surface appearances.

Key Questions:

- Which institutions most closely match our student demographics, institution type, size, focus, selectivity, etc.?
- Which of these comparable peers offers high-quality first-year programs? What can we learn from them? Which strategies or practices could we implement at our own institution?
- Which institutions, without regard for identifying characteristics, offer high-quality first-year programs? How can we learn from them and adapt their strategies to launch similar efforts appropriate to our scale and available resources?

3. **Ideate and Innovate**. Creating an outstanding first-year program need not be a matter of copying others' efforts. Rather, the investigations we've conducted should serve as fuel for ideation, informed by our knowledge of the resources available within our own institution and our identification of students' needs. Here, a bit of knowledge about User Experience Design might be useful.

   Also known as UX, User Experience Design is a branch of design that focuses on the interface between a product and the user. It's most common in the technology sector, but the creators of anything from a toothbrush to a luxury automobile must still pay attention to each facet of the user experience if they hope their product will be successful.

   UX design focuses on seven considerations about a product.

   1. Useful: does the product serve a purpose?
   2. Usable: can users effectively and efficiently use the product for themselves?
   3. Findable: can the user find the product in order to purchase it?
   4. Credible: does the user believe that the product will do what it's advertised to do?
   5. Desirable: does the product inspire the user to want to purchase it?
   6. Accessible: can the product be used by persons with disabilities?
   7. Valuable: does the product deliver value to the person who purchases it and the company that produces it?[40]

   Few institutions of higher learning focus on creating a user experience for students. Their systems and procedures aren't always designed to work well together and they may not operate from the standpoint of best serving students' needs. Let's look at those seven considerations again, recasting them for a student-centered model of higher education.

   1. **Useful: how will this ____ (course, assignment, experience) be personally useful to the student?**

      Everything students encounter in higher education has a purpose. We generally assume that students automatically understand why we're asking them to do something or that they will discover the purpose for themselves. However, when we take the time to overtly communicate *why* we're asking students to do something, they're better able to learn from that experience.
   2. **Usable: how can the student use the materials and supports available to maximize learning?**

      Instructors provide materials and supports in their classrooms. Institutions also provide support systems for students. Nevertheless, these supports are not usable unless we teach students what they are, explain how they work, and help them develop the ability to use these tools productively.
   3. **Findable: where can the student find the materials, information, or help that they need?**

Clearly, students can't use something if they can't find it. Understanding the support systems that are available through the institution, and knowing where the things they need are located in the physical or virtual environments, are necessary to their success. They also need to know how to ask their professors for help and how to seek assistance with personal difficulties.

4. **Credible: does this _____ (information, activity, requirement, etc…) make sense to the student?**

   Critical thinking is an essential life skill. This works in two directions. First, students should learn how to critique their own understanding as they learn, asking "Does this make sense to me?" If the answer is "no" then they also need to know how take action until the answer turns to "yes." Second, our students need to learn how to turn critique outwards to the topics we examine in our courses. Developing the skill of thinking critically rather than accepting every word the instructor utters as unassailable truth is the key to wisdom. Both types of critical thinking rely on the exact same principle: ask questions until we achieve understanding.

5. **Desirable: is the student inspired by the learning experience? Does the student see how their learning will help them to build a career after they graduate?**

   In everything that we ask our students to do, we need to keep the big picture in mind. Learning about Sparta and Athens in World History 101 doesn't exist in isolation – it informs students' understanding of how Western civilization grew and developed to become what it is today. Then that knowledge informs graduates' future careers, since the workplace exists within a society governed by principles that developed in ancient Greece. Some instructors help their students make these connections, but others leave it up to the student. Instructors who are dynamic and engaging communicate their excitement about their course content and facilitate connections beyond the walls of the classroom or studio. First-year programs should assist students in learning how to make these connections, teaching them how find something of value in each class period or educational experience that keeps them engaged in learning and motivated to succeed.

6. **Accessible: how can students manage the problems they face as learners?**

   About 20% of the general population has some form of disability, and most of us have areas where we're not as strong or skillful as we'd like to be. When we apply UX design to learning, we think about how we can strategically adapt processes, materials, or systems to shore up these areas of weakness. In terms of first-year experiences, we need to teach our students how to address the problems they face either academically or personally. Meeting their basic needs for food, clothing, shelter, safety, rest, and wellness must factor into our efforts because students cannot learn when they're hungry, cold, exhausted, unwell, or overwhelmed by other problems that negatively impact their quality of life. Therefore, our first-year seminars should include information on resources like the campus food pantry, options for students who have no home or transportation and cannot leave campus during breaks, or other problems common to specific institutions. For instance, students at a university in Florida might

not struggle with being unable to obtain adequate winter clothing, but the same deficit could prevent students from attending classes in Minnesota. Solutions should suit the particular challenges of the university and its specific student population.

7. **Valuable: how will the education we deliver to our students allow them to meet their goals?**

   Most students want to earn a degree because it allows them to pursue a career in a particular field. Instructors, on the other hand, don't always help students connect what they're learning in the classroom to their professional aspirations. Identifying the value of what we're teaching helps students persevere even when they don't feel engaged in a course or face personal hardships. Believing that their education is worthwhile overall can sustain students' motivation to complete activities and requirements that may not seem to be of value in the present moment.

Next, let's review the crucial experiences of the Big Six, since we know that these are essential to graduates' views about the value of the education they received.

1. Professors who made students feel excited about learning
2. Professors who cared about students as people
3. A mentor who encouraged students to pursue their goals and dreams
4. The opportunity to work on a long-term project
5. Taking part in an internship or job where they could apply what they were learning in the classroom
6. Being extremely active in extracurricular activities and organizations during college.

Gallup tells us that only 3% of those surveyed reported that they received all six. By utilizing the principles of design thinking and UX design, we can incorporate these into a first-year seminar or experience.

- Include experiences that make students feel excited about learning by recruiting the most dynamic and inspiring professors to teach first-year seminars.
- Structure the program to build personal relationships between faculty, staff, and students, ensuring that every student is known by name and need from the beginning of the academic year.
- Provide a mentor for every incoming student, making a direct connection to a person with whom the student can develop a relationship and contact for help with any problem. Mentors check up on students regularly and provide academic and emotional support as needed and appropriate.
- Utilize project-based learning in the first-year seminar curriculum to engage student interest, provide a meaningful context for acquiring academic skills and competencies, build interpersonal relationships, and begin to acquire disciplinary knowledge related to the project.

- Introduce students to internship or practicum programs they may wish to pursue later in their academic experience so they can plan for these as they develop their initial degree plans.
- Expose students to co-curricular opportunities and strongly encourage students to join these organizations. Facilitate connections by attending open house events as a cohort group, discussing the importance of participation as part of the seminar curriculum, and introducing students to the leaders of groups they might want to join.

Now, taking all of this information into account, alongside the data your first-year experience committee has gathered, it's time to brainstorm solutions specific to your particular institution. Brainstorming is at its best when we follow the principles of design as practiced at IDEO – a leading design firm associated with Stanford's d.School.[41]

- Defer judgment. Negativity is the enemy of creativity. There will be time to evaluate ideas later, but during brainstorming, a philosophy of "Yes, and…" is much more productive than, "No, but…" or (even worse), "That's stupid," or "That could never work," or, "We tried that fifteen years ago and it was a disaster."
- Encourage wild ideas. Sometimes, our craziest ideas contain the seeds of something great. To jump-start divergent thinking, it can help to ask participants, "If you could wave a magic wand to change one thing, what would it be?" and, "If we had all the money in the world to address the problem, what would you do?"
- Build on the ideas of others. It's true that two heads are better than one, although it's a cliché. Listening to others instead of focusing only on what we want to say builds on this power, allowing us to generate more powerful solutions than one person is likely to come up with on their own.
- Stay focused on the topic. Any time a group meets, the tendency to go off on a tangent or to engage in side conversations is strong. Staying focused and in-the-moment makes our discussions more productive
- Have one conversation at a time. Each person deserves to have their ideas heard. Talking over one another or engaging in multiple conversations at once makes our brainstorming less effective.
- Be visual. There is considerable power in sketching ideas, even if only as stick figures. Translating a thought to an image and then coming up with a verbal explanation for that image engages multiple brain systems, allowing us to communicate effectively. Jotting ideas on colorful Post-it notes and placing them on a whiteboard where the whole group can see them establishes parameters for the process and keeps participants from being too detailed or too wordy.
- Go for quantity. Our first few ideas are not always our best. The more ideas we generate, the greater the likelihood we'll eventually come up with something that works.

Next, sort and evaluate the ideas you've generated. Choose the most promising and break into smaller groups to sketch out strategies for how you could bring these ideas to life. Use poster board or chart paper to draw, diagram, map, and label your proposed solutions. Come back together as a group and decide which are best. Eventually, your team will come up with a workable theory ready for prototyping.

4. **Prototype and Test.** The last steps in design thinking involve creating a prototype and testing it with the target audience. In higher education, we might choose to do this by piloting a new course or program then evaluating its success upon completion, making modifications, and then launching it fully. The new program/course should have detailed, specific, and measurable student learning outcomes that allow for actionable analysis of the pilot.

   To guide our efforts, it may be helpful to consider that design innovation considers three intersecting lenses through which we evaluate our ideas.[42] Desirability asks us to clarify our motivations and consider the users' needs and wants. Why do we want to pursue this idea? Is our solution something both students and faculty will embrace? Feasibility considers practical matters. How will we bring this idea to life? Is our solution within our power to implement? Viability looks to the future as it assesses the present. Do we have the resources to bring our solution to life? Can we afford to sustain this solution in the long term? If we can determine that our proposal is desirable, feasible, and viable, we can then follow our institution's processes and procedures through to implementation.

   The institution should offer the prototype course or program to a sample population of students in the first year. This should include specific activities for collecting data through frequent surveys or interviews of faculty, staff, and student participants to monitor their impressions and reactions during the program, concluding with a detailed exit survey and analysis of student achievement of program objectives and student learning outcomes.

   Finally, all of the evidence gathered during the pilot year helps us identify areas for improvement, which we then enact in the next iteration of the program or course. This should be the pattern every time we teach, maintaining a cycle of continuous improvement.

   How will we know if our first-year programs are effective? Like all other programs, we can and should employ assessment mechanisms to identify areas of strength and weakness. This need not be overly complicated. A basic approach might look something like this:

   1. Identify desired learning outcomes.
   2. Write parallel surveys to administer on the first and last day of the program that measure students' acquisition of the desired learning outcomes. Faculty should also complete a survey at the beginning and end of the program.

3. Write a formative midterm quiz to measure student learning in progress, identifying areas where adjustments might be necessary to support student learning prior to the program's conclusion.
4. Incorporate an assignment such a one-page essay in which students reflect on their learning in the program, discussing what was most valuable to them and what they would change.

Delivering a first-year experience to all students will undoubtedly require multiple sections, each of which should utilize the same set of learning outcomes and administer the same pre-and post- surveys, midterm quiz and essay assignment. Instructors should submit the data from these assessments to the program director, who would aggregate the results and generate a report. The First-Year Experience Committee should then meet to evaluate these findings, adjusting the program as needed. This data could also serve as the basis for a "First-Year Choice" faculty award.

Finally, we should recognize that few programs or initiatives achieve perfection, which is why adopting a mindset of continuous improvement is beneficial. This parallels the principles of action research, where we determine a problem to be solved or question to be answered, take steps to solve the problem or answer the question, evaluate the success of our efforts, then make necessary changes and try again.

Additional Suggestions and Considerations

This report can only scratch the surface of the first-year programs, seminars, and experiences currently in existence and offer broad suggestions about how to go about the task of creating an effective version at your institution. There's no panacea, no one-size-fits-all approach that will work at every institution and with all students. Nevertheless, following the steps outlined here offers an opportunity to make progress and a hope for the future.

As you plan to implement first-year programing, the following considerations might help to spark ideas that shape your committee's deliberations. These are loosely organized according to their applicability to the institution, faculty and staff, courses or programs, and individual students.

Institution

1. Evaluate student services and programs to avoid duplication of effort and integrate, expand, or adapt where possible.
2. Provide for seamless communication and information sharing about students, especially those who are most in need of support, including anecdotal observations and information gathered through interaction with students. The more complete a picture we can paint of each student, the better able we are to meet their needs and facilitate their success.
3. Foster an institution-wide understanding of the importance of getting students off to a good start through the first-year program, communicating its value and benefits to all stakeholders.

Just as in the famous cliché "It takes a village to raise a child," it also takes an entire university to educate a student.

4. Extend the first-year experience through both semesters of the first year.
5. Organize all student resources in a "one-stop-shop" type of website optimized for mobile devices. The site should have intuitive navigation, clear and simple instructions, and engaging visual content. Students should be able to access any service they need with the fewest possible keystrokes.
6. Create a concierge desk located in a high-traffic area of campus where students can interact face-to-face with a friendly, knowledgeable staff member who can connect them to appropriate service personnel.
7. Establish assessment and data collection procedures from the outset of the planning process, ensuring that these are strategic, efficient, and achievable for all participants. The better the data gathered, the more straightforward the continuous improvement process will be.

Faculty/Staff

1. Build a network between and among faculty, advisors, and student services staff through a thoughtful and intentional first-year program, strengthening interpersonal connections and creating a feeling of unity behind a common purpose as the "First-Year Team."
2. Recruit and support professors who are especially well suited to teaching first-year students, communicating their passion and excitement for their discipline and for higher education.
3. Establish clear expectations for faculty, advisors, and others working with first-year students.
4. Offer professional development to faculty through training and workshops designed to improve skill in working with first-year students. Reward participation in this training and for volunteering to work with first-year students.
5. Establish recognition for outstanding faculty such as a yearly "First-Year Choice" award based on their work with students; provide financial support for enhancing courses or engaging in professional development.

Course/Program

1. Foster a "big picture" view in students – lead them to understand how the components of their education fit together and how they can apply them to their studies and to their lives after graduation.
2. Link first-year courses to disciplinary curricula. Consider paired co-taught courses joined by a common theme while also embedding the College 101-style content, to enhance student engagement and ensure all credit hours count towards general education requirements.
3. Encourage academic units to increase diversity within their curricula, publicize diversity-related events, and pair students with mentors who have similar demographic characteristics so that diverse students feel that their experiences and perspectives are valued at the institution and they are not alone on campus.
4. Build frequent informal social interactions between students, faculty, and staff into the first-year. Encourage faculty to invite students out for pizza, to hold class in an alternative location

such as a coffee shop, to take students on excursions off campus, etc. Provide faculty with a budget for such activities and with meal cards to encourage them to eat with students in the campus dining facilities.

Student

1. Create a system for advising that ensures students are in a program that's a good fit. When a change of major is necessary, create systems that ensure the transition is as seamless as possible and makes every effort to avoid prolonging the student's time to graduation.
2. Target support for first-year students with identified needs such as being first generation, low-income, international students/non-native English speakers, etc. Group students with a faculty-advisor team who possess specific experience in working with a target population. (This links to the diversity strategy in the previous section.)
3. Remain mindful of students' interpersonal interactions such as acclimating to residence hall life, building relationships with roommates, and making new friends. Provide non-judgmental support and adjust their living situations where necessary. Few students can be successful if their living situation is miserable.
4. Create, expand, and encourage peer-mentoring programs that link students in face-to-face and digital formats. First-year students should feel welcome to message their peer mentor about any question, large or small.

Sample First-Year Program

Based on all of the information, examples, and discussion presented thus far, we might construct a model of a first-year program such as the following sample. This model presumes a mid-sized regional public university as the program's location.

Component 1: Maximize Technologies

- As soon as students confirm their enrollment and submit their deposit, they receive a welcome message from the university's chatbot. Messages are delivered at least weekly until the start of the semester, increasing in frequency the nearer to the first day of class. Students always have the option to respond with questions and connect easily to pertinent information.

- All communication with students takes place through their mobile devices using apps, not email. A chatbot message sent out in the first month after enrollment links students to a site where they can install the appropriate app or apps to receive all university messaging.

    - Journey: This app facilitates students' journey to their degree, allowing them to perform a degree audit at any time, and displaying their progress in the manner of a map app. The app sends out messages when students stray off course, requiring that they

schedule a meeting with their advisor. The app automatically alerts the student's advisor about the problem and prompts the advisor to message the student.
    - Virtual Planner: the university can push notifications and alerts of important events, and faculty can push out due dates for assignments through this app, with automated reminders increasing in frequency as deadlines approach. Students can input personal calendar items such as work schedules or other dates.

- A centralized student data system provides a platform where all faculty and staff can input and access information about individual students. Absences, grades, utilization of campus resources, and anecdotal notes provide a means of sharing pertinent information allowing all those who work with an individual student to be equally informed. For example, a student might contact one of their professors about a family crisis that has affected their performance on an assignment. That professor could post a note in the student's file so that all of the faculty and advisors who work with that student know about the problem.

Component 2: Build Belonging

- One month prior to the first day of orientation, the university ships a welcome package to all incoming students' homes. It includes a t-shirt with instructions to wear it for the Welcome Rally on Day 2 of orientation and other small gifts reflecting the unique character of the institution. Our hypothetical university is located in a northern climate and its promotional materials highlight its accessibility to outdoor recreation areas, so the welcome package also includes an insulated beverage container and touch-screen gloves bearing the university's logo.
- As soon as students arrive on campus, every activity from moving in to campus housing to the first meal they eat communicates excitement for the university, conveys a warm welcome, and helps students begin to form interpersonal relationships. On Day 2, the university holds an exciting pep-rally-style gathering for all incoming students (reminded via chatbot message to wear their new t-shirts). Dynamic speakers and multimedia presentations convey the character of the institution. Students hear from the university president and other persons of note, each of whom makes it clear that every student is a valued and essential member of the university community.
- Peer mentors send a welcoming message including a link to their university profile page to all of their mentees one week prior to move-in day, and they hold a group meeting on the first day after move-in to establish a face-to-face relationship with their mentees and help connect them with other first-year students. Peer mentors check in with their mentees weekly until the first midterm, then bi-weekly thereafter throughout the remainder of the academic year.
- Advisors message their assigned students prior to move-in day, welcoming them to campus and scheduling a face-to-face meeting within the first week of classes. Advisors activate the meeting in the virtual planner app and set appropriate reminders. If the student misses the meeting, the advisor reaches out to reschedule and activates automated prompts until the student appears in person.

Component 3: Connect Through Curriculum

First Semester: Home Teams

Students select a Home Team when registering for their first semester courses: a curricular group in which their first-year experience courses will take place.

- Arts & Humanities
- STEM
- Education & Social Sciences
- Business & Management

- The Home Teams offer pairs of co-taught courses that meet general education requirements, united by a common interdisciplinary theme. Enough sections of the paired courses are available to enroll all incoming students who select that Home Team, with class sizes capped at 25 students per course. (Each course pair enrolls 50 students.) Our hypothetical university typically registers 1500 incoming freshmen. Since 20% of these students usually choose to enroll in the Education & Social Sciences group (300 students), there are six groups of paired co-taught courses. These might include:

    - History & Psychology – Theme: Citizenship and Civic Responsibility
    - Anthropology & Gender Studies – Theme: Social Activism
    - Political Science & Communication – Theme: the Spread of Democracy
    - English & Communications – Theme: Perceiving the World Through Stories
    - Education & Philosophy – Theme: How We Know What We Know, and Why
    - Psychology & Philosophy – Theme: What is Emotion?

- Course content may vary from one semester to another, subject to the interests of the partnering faculty members. Pairings between and among Home Teams are also possible, depending on faculty interest. However, all courses in all Home Teams adhere to the same set of student learning outcomes. Upon completion of the course, students will:

    - Demonstrate skills necessary to academic success including critical thinking, information literacy, proficient written communication, analysis and application of academic content, and adherence to the standards of academic integrity.
    - Develop the ability to navigate university structures and requirements, utilize appropriate campus resources, and participate in co-curricular activities.
    - Engage in activities leading to the clarification of one's values, identity, and motivations, applying this self-knowledge to setting personal and academic goals and developing capacities for leadership, wellness, personal management, and ethical behavior.
    - Contribute to the campus community through appreciation for diversity, inclusive attitudes, respectful communication, and shared responsibility for the growth and wellbeing of all community members.

  Faculty incorporate up to four additional student learning outcomes appropriate to the content of their course's fulfillment of general education requirements.

- Home Team faculty receive meal cards for student dining facilities to encourage them to share meals with their students. Faculty also have a budget sufficient to lead at least one off-campus excursion with their students, as appropriate to their course content. For example, the History & Psychology course could visit a local ethnic restaurant, sharing a meal together and speaking to the owners about their immigrant journey and pursuit of US citizenship. This experience incorporates many of the goals of the First-Year Program. It builds the relationship between faculty and students as they participate in an informal social experience, it embeds classroom learning in a real-world context, it connects students to the community outside of the university, and it exposes students to individuals from cultures other than their own, increasing their appreciation for diversity.[43]

- Faculty receive training prior to teaching Home Team courses, gaining an understanding of the student experience and how it has changed since their own first experiences in higher education. They also learn strategies for building relationships with students, co-teaching successfully, and the mechanics of teaching a course within the expected framework.

- Home Team courses utilize four types of assessment:
    - Pre- and post-course student and faculty surveys measuring their attitudes towards and knowledge of topics relevant to the student learning outcomes
    - Mid-term quiz measuring students' progress towards the learning outcomes.
    - Reflective essay assignment assessing students' writing proficiency and perceptions of growth in interpersonal skills.
    - Instructor-selected assessments of disciplinary, interdisciplinary, and thematic content
- Each Home Team course receives a graduate assistant, allowing smaller groups for guided discussions of key topics.

<u>Second Semester: Common Read</u>

- All first-year students enroll in an English course during the second semester, and all read a common book. The English course presents its normal curriculum, and the Common Read content takes place in a 1-credit-hour discussion section linked to the course, similar to requirements for science courses pairing a 3-credit lecture section with a 1-credit laboratory section.
- Students meet in the discussion section weekly, facilitated by faculty and graduate students.
- An interactive presentation by the book's author serves to deepen students' engagement with the themes and ideas in the text.
- All faculty and graduate students teaching the first-year English course participate in a training experience prior to the start of the semester, including direct instruction in linking goals of the first-year program to the text:
    - Critical thinking

- Information literacy
- Proficient written communication
- Clarification of personal values, identity, and motivations
- Building a campus community through shared responsibility

Why does this matter?

Generations of students have arrived on college campuses unprepared for what they will face, yet they adapted and moved forward on their educational journeys. Those of us who pursue careers in higher education shared in this experience. It's nearly an expected rite of passage, or so we've believed. However, in the years since we earned our degrees, the face of higher education has changed quite dramatically. Our incoming students increasingly lack the essential knowledge, skills, and personal characteristics that empowered our ability to navigate the first-year experience. Our challenge today is to see them for who they are, not to presume they're just like us and equally capable of making the transition without help.

Recap

- First-year experience programs are quite common, but not all are equally successful in preparing students for the rigors of higher education.
- Exemplars from Arizona State University, Bard College, Stanford, and Georgia State can serve as inspiration for new first-year programs at other institutions.
- Committees charged with the task of revising or creating first-year programs can utilize strategies of design thinking and user experience design, also drawing upon relevant examples at other institutions to create effective strategies to help students build relationships, gain necessary skills, and rise to the task of achieving success in higher education.

Design Connection

WHY? Empathize	HOW? Define and Ideate	WHAT? Prototype and Test
Students come to us with much different needs than in the past. Where once we presumed our students were "college ready," we must now take on the responsibility of becoming student ready, prepared to create experiences that allow our incoming students to acclimate to higher education and gain essential knowledge, skills, and competencies that support	Setting aside our preconceptions about our students, identifying students' needs, and examining successful programs at other institutions will assist our efforts to design high-quality first-year programs, applying strategies from design thinking, user experience design, and knowledge of factors that empower student success. Multi-layered first-year programs can prepare our students for	Each institution has its own identity, including available resources, priorities, challenges, and opportunities. First-year programs should remain aware of these factors if they are to be desirable, feasible, and viable. Like teaching, program development is an infinitely iterative process. We should build effective assessment mechanisms into our first-year programs that support processes

persistence, retention, and graduation. This task requires a great deal of empathy and no small measure of compassion, as well.	success while also helping them establish a sense of belonging, build relationships, and maximize their first experiences in the university.	of continuous improvement, ensuring that each of our efforts is both beneficial and sustainable.

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Part 3: How? Other High Impact Practices

High Impact Practices (HIPs) go far beyond first-year experiences. They also enhance students' entire collegiate journey, expanding and deepening their learning by building connections: person-to-person, theory-to-practice, skill-to-application, and knowledge-to-action. Moreover, a single course or program can include multiple HIPs. For example, the Home Team courses we explored in our discussion of a model first-year program are also common intellectual experiences and learning communities. We'll look more closely into HIPs in this section, focusing on how we can incorporate them into our courses and programs.

The strategies and processes we examined in our prior discussions are just as relevant to other HIPS as they are to creating first-year experiences. Teams, committees, partners, or even individual faculty members can utilize the methods of design thinking and user experience design, keeping the Big Six and students' needs in mind as they work to improve student learning through HIPS.

Common Intellectual Experiences

To a certain way of thinking, every situation in which teaching occurs from preschool to graduate school offers a common intellectual experience (CIE), since all students in a class participate in the same learning activities. It's also the purpose of core curricula or general education courses. Nevertheless, traditional instruction represents the barest minimum of what a CIE can offer. Courses or other learning activities classified as CIEs typically include five components, often following a format similar to the paired courses in the Home Team component of the model First-Year Experience program.

- Interdisciplinary theme
- Shared content between courses
- Faculty collaboration
- Co-curricular connections*
- Strategies for active learning

As an example, Michigan State University offers paired courses for incoming freshmen that share a common theme and connect this theme to activities outside the classroom. The 2017 CIE pilot program demonstrated notably positive non-cognitive outcomes among student participants including enhanced social integration, increased self-efficacy, and establishing a growth mindset. Students participating in these courses also out-performed peers enrolled in non-CIE versions of the same courses.[1]

CIEs typically incorporate at least four of the Eight Key Elements of HIPs:

- Interaction with faculty and peers about substantive matters

* Co-curricular refers to any activity occurring beyond the classroom. These include participating in or attending special events on or off campus, providing shared experiences, taking excursions off-campus, and engaging with the community through special projects, volunteering, or service learning, among others.

- Experiences with diversity, wherein students interact with people and circumstances that differ from those with which students are familiar
- Periodic, structured opportunities to reflect and integrate learning
- Opportunities to discover relevance of learning through real-world applications.[2]

CIEs take many forms. A one-time activity of significant value for a small group of students can be a CIE. A single course or pair of courses can fulfill the requirements of being a CIE. We might link courses horizontally within a major through a shared theme, or link them sequentially to provide opportunities for students and faculty to engage in long-term collaborative projects (notably one of the goals of the Big Six). CIEs could expand upon general education requirements such as writing across the curriculum or writing in a particular discipline that continue student learning from either their introductory English requirements or their first-year experience courses. At their most extensive, CIEs can unify comprehensive integrated programs for large student populations, serving to synthesize learning across general education requirements and co-curricular activities.[3]

The purpose of most courses is to build students' knowledge or skills. CIEs transcend this by integrating that learning beyond the boundaries of the classroom and leading students to think holistically about their educational experiences. Activities facilitating reflection are particularly important in this regard, helping students identify what they have learned explicitly and implicitly, and across both positive and negative experiences. For instance, students who realize they can learn from failure as well as success develop resilience and persistence – both essential to life in the rapidly changing world of the 21st century.

Common reading experiences offer an accessible entry point for institutions deciding to incorporate a CIE into the student experience. This might be limited to students within a particular department or program, or it might include all members of the institution. Implementation varies by institution, of course, but to fulfil the requirements for identification as a CIE, a common reading experience should include:

- meaningful interaction between students and faculty
- exploration of substantive themes and ideas, especially those pertaining to diversity or exposing students to people or ideas with which they are unfamiliar
- opportunities for reflection
- activities that link the reading experience to the world outside the university.

The "Common Read" in our model first-year program accomplished these goals by adding a one-credit hour discussion section to every freshman English course, facilitated by faculty and graduate students who build relationships with and among students, lead exploration of essential themes and ideas, and direct reflection and application activities based on the book's contents. The co-curricular component occurs through an interactive presentation by the author. At least one assignment in the English course incorporates the book, strengthening students' ability to apply ideas generated in the discussion section to their other learning.

Institutions or individuals seeking to build CIEs into their programs may wish to begin by asking and answer several fundamental questions.

1. Who is the target student population? (educational level, needs, interests)
2. What scale would be most appropriate to the target student population? (assignment, course, program, department, entire undergraduate curriculum)
3. What components should be included? (single shared experience or event or multiple components such as paired courses, more than two courses, courses plus co-curricular events and activities, etc.)
4. To what extent will the CIE utilize interdisciplinary connections and what form will they take? (within a single discipline, cross-disciplinary, cross-college)
5. What mechanisms of integration will the CIE employ and how will students synthesize their learning? (pedagogical methods, themes across courses, events, co-curricular activities)
6. What will be expected of faculty? (participation in faculty development activities, co-teaching, leading outside activities)
7. What will be expected of students? (assignments, participation beyond routine class attendance)
8. How will the CIE ensure equity of access and integrate experiences with diversity? (scheduling, support for additional expenses, off-campus activities)
9. To what extent will the CIE use community-based or service learning, build connections to external partners, and/or apply students' learning to real-world issues and needs?
10. How will the CIE include, reinforce, or apply co-curricular experiences?

Once these answers become clear, the next task is to mobilize design thinking and UX design to generate ideas about how best to go about creating the CIE. Finally, we should also examine our proposed solution through the three lenses of innovation.

- Desirability: Do we want this solution? Will our students want this solution?
- Feasibility: Can this solution work?
- Viability: Can we afford this solution? Can we sustain it over time?

Like other HIPs, common intellectual experiences have the potential to transform student learning if designed thoughtfully, implemented with fidelity, and supported by faculty committed to their students' success.

Recap

- CIEs go beyond a core curriculum or general education requirements by incorporating shared content, fostering meaningful relationships between students and faculty, increasing students' awareness of and appreciation for diversity, and other of the Eight Key Elements of High Impact Practices.

- CIEs can demonstrate crossover with other HIPS such as First-Year Experiences and Learning Communities in their use of co-curricular connections, paired co-taught courses, a common reading experience, and more.
- The primary benefit of CIEs is their capacity to integrate students' learning across multiple knowledge domains or topics.

Design Connection		
WHY? Empathize	HOW? Define and Ideate	WHAT? Prototype and Test
Students need our help to make connections between the subjects we expect them to learn. Common Intellectual Experiences build emotional, intellectual, and social connections that facilitate students learning of course material and enhance their educational experience.	Analysis of general education requirements, examination of how courses could be paired or grouped, identification of themes or issues that could link courses, and knowledge of existing resources or liabilities help to shape the design of common intellectual experiences.	Initial offerings of CIEs will help to gauge student and faculty interest, supplemented by high-quality assessment of pilot programs, then generating further course ideas.

Learning Communities

Alexander Mieklejohn established the first learning communities at the Experimental College of the University of Wisconsin in the late 1920s, followed by Joseph Tussman's Experimental College at the University of California at Berkeley in the mid-1960s, which quickly inspired the founding of Evergreen State College (WA) in 1970.[4] Broadly defined, learning communities enroll a common cohort of students in groups of two or more courses linked by a shared interdisciplinary theme or problem. These have been common in higher education since the 1990s. Their longevity rests in their effectiveness. Zhao and Kuh (2004) identified a significant impact of student participation in learning communities with their academic success and retention, demonstrating "enhanced academic performance, integration of academic and social experiences, gains in multiple areas of skill, competence, and knowledge, and overall satisfaction with the college experience."[5]

Similarities between learning communities and common intellectual experiences are obvious, yet the two HIPs differ in emphasis. The primary purpose of a CIE is to facilitate students' acquisition of academic content while simultaneously deepening their learning through reflection, application, and integration of knowledge and skills beyond the boundaries of the curricular structures and activities in which they exist. The primary purpose of a learning community, on the other hand, is to build a sense of community between and among students, faculty, and staff by placing them in an academic context that exhibits three distinctive characteristics.[6]

- **Shared Knowledge**: students register for a pair or group of courses organized around a central theme, designed to promote higher levels of cognitive complexity than is found in standard enrollment in disassociated courses typical of traditional approaches to higher education.
- **Shared Knowing**: all students in the learning community enroll the same courses at the same time, which helps them build relationships as they construct knowledge together. The combination of social and intellectual engagement promotes cognitive development and nurtures appreciation for others' perspectives.
- **Shared Responsibility**: coursework utilizes strategies for active learning including frequent opportunities to participate in collaborative groups. Students develop essential skills in teamwork, cooperation, problem solving, negotiation, communication, and accountability as they learn how to distribute responsibilities among participants and fulfil their obligations to the group's successful completion of a project.

Acquisition of knowledge remains a primary goal of learning communities, while also building relationships and nurturing students' personal skills and competencies. In other words, students learn content while they also learn how to build relationships and how to work with others towards a common goal.

Learning communities generally take one of four forms, although many configurations are possible.

- **Linked courses** sharing a cohort of students and organized around complementary themes, readings, skills, assignments, projects, or experiences. This practice simplifies registration and creates a supportive environment for learning.
- **Freshman Interest Groups** (also known as FIGs) supplement linked courses by incorporating co-curricular and community-building activities organized around a common interest or shared theme. Activities designed to build personal management skills, acclimate to campus living, and become familiar with the university's support systems, staff, and services comprise an important part of the curriculum. Peer mentors, graduate students, and support staff frequently serve as facilitators or instructors.
- **Meta-majors** cluster courses within a field of interest, introducing students to a broad career field and providing opportunities to explore a variety of possible majors that share a set of prerequisites. Ideally, meta-majors expose students to faculty research and professional practice, providing a roadmap for achievement that can help students chart a course through their undergraduate and perhaps even graduate education.
- **Living-learning communities** combine the residential experience with elements of FIGs or meta-majors. Students live in a campus residence with peers who share a common interest and participate in activities, events, excursions, or experiences designed to help them build relationships and acclimate to college life. Group facilitators tend to be upper-class peers, staff, or graduate students rather than fulltime faculty.

The practices listed above are quite common, but we might also consider some innovative alternatives. Drexel University's LeBow College of Business offers living-learning options focusing on business, global learning, and a combination of business and engineering, but they also have a learning community for commuter students (CLC).[7] The CLC fosters a sense of belonging on campus, helping students develop peer relationships and enhancing the learning experience. Like other learning communities, it includes instruction in time management and other essential skills. It also focuses on four areas of engagement.

1. Social opportunities on and off campus, including an annual trip to New York City, excursions around Philadelphia, and corporate site visits
2. Academic support through enrollment in a one-credit Drexel Experience course
3. Career development and opportunities to develop leadership skills
4. Civic engagement through involvement in community activities, volunteerism, and enrollment in Civics 101 as a cohort group.

Participants in the CLC demonstrate their engagement by continuing their involvement as upperclassmen and alumni. The group emphasizes balance, providing high quality opportunities for meaningful engagement scheduled to align with commuter students' responsibilities and schedules outside of the university.

Georgia State University supports learning communities, including one geared towards commuter students.[8] San Diego State University not only has a commuter learning community similar to those at Drexel or Georgia State, but established a home base, opening the Commuter Resource Center – a staffed area with access to amenities commonly found in dormitories, including a kitchen area with

refrigerator, sink, and microwaves, comfortable seating, work stations, computers and free printers. SDSU's commuter students can choose from among several Commuter Success Pathways built around the common goals of building relationships, feeling a sense of belonging on campus, becoming part of a small community of peers who share common interests, and receiving specific academic support.[9]

Despite their proven benefits to students, institutions considering how best to launch new learning communities or update existing efforts should be aware of a few known challenges. First, linked courses in which student cohort groups register concurrently should share more than just their class lists. Best practice involves genuine alignment of content, integrative assignments and assessments, and pedagogies emphasizing active learning and collaborative projects. If faculty maintain a standard approach to teaching these courses, students receive little educational benefit beyond convenient registration, although they may realize a limited social benefit simply because they attend class with the same peers throughout the week. Meta-majors must guard against disconnected or superficial approaches to the academic content of freshman courses. Students should directly experience what advanced engagement in the major could entail and see first-hand what career possibilities they might chose to pursue. Matters of staffing and student supervision are of concern across learning communities, especially FIGs and living-learning arrangements. Oftentimes, group leaders lack adequate professional development or experience. Success depends on committed leadership, engaged and experienced faculty, and a thoughtfully designed scheduled of engaging activities, or the living-learning community will be no different from any other residence hall arrangement.

Knowing the benefits and pitfalls of learning communities helps us to design solutions that fit our institution and best meet the needs of our students. The following questions are similar to those we considered with regard to common intellectual experiences.

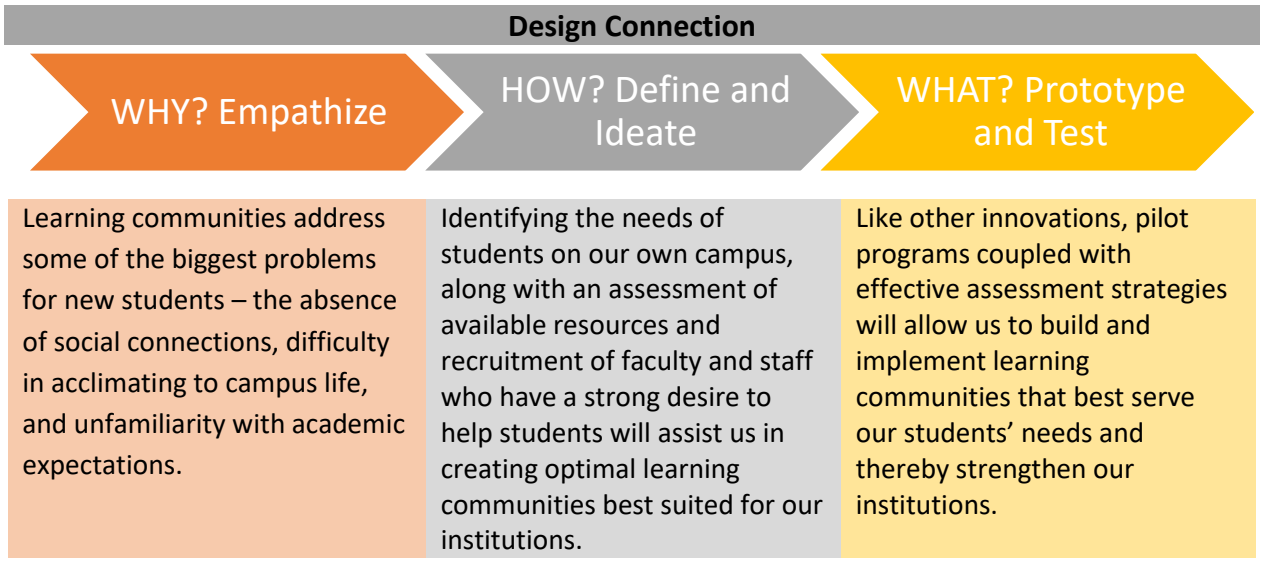
1. Who will the learning community serve? (Incoming freshmen, commuter students, transfer students, students in need of additional academic support?) Which of their needs and wants will the learning community fulfil?
2. What is the scale of the learning community we plan to create? (Within a specific program, school, college, or university-wide? Is student participation voluntary or mandatory?)
3. What form will the learning community take? (Linked courses, FIGs, meta-major, living-learning options?)
4. To what extent will the learning community engage with interdisciplinarity, and with which disciplines?
5. How will the learning community facilitate students' capacity to build lasting relationships with peers, staff, and faculty members?
6. What role will faculty play? What professional development will we provide?
7. What will be expected of students in the learning community? (participation in a specified number of activities, completion of assignments, volunteerism, meeting behavioral standards for community members?)
8. How will the learning community ensure equitable access? How will it integrate experiences with diversity?

9. To what extent will the learning community help students connect with others beyond the campus?
10. How will the learning community help students transfer their experiences to subsequent learning and activities?[†]

These answers, in combination with the design thinking process and UX design, should assist in clarifying the goal we're trying to achieve, leading to a prototype learning community that is desirable, feasible, and viable, demonstrating high potential for success.

Recap

- Learning Communities share many commonalities with First-Year Experiences and Common Intellectual Experiences but differ in their emphasis. The purpose of a learning community is to help students develop a sense of belonging by building meaningful relationships with peers, faculty, and staff through shared academic and co-curricular experiences.
- Learning Communities generally take the form of linked courses, living-learning communities, Freshman Interest Groups, or meta-majors.
- They often include social events or excursions, academic support, community engagement, and career development.



[†] NOTE: This list of considerations is similar across all HIPS and will not be repeated in every section to avoid unnecessary redundancy. A template is located in the "HIPS Summary and Resources" at the end of Part 3.

Writing-Intensive Courses

Adults are aware that we speak differently depending on our audience. The tone, style, and mannerisms we employ when chatting with a colleague tend to be different from the voice we use when lecturing, which differs yet again from the way we speak to our families at home. Students aren't as perceptive of these differences in verbal communication and are even less likely to realize that expectations for writing can be vastly different depending upon the intended recipient and the context in which the writing occurs. Freshmen become confused when a paper that would have earned an A in high school now receives a C or worse from a college professor. Likewise, students may have completed their Composition 101 and 102 requirements successfully but remain unable to write a coherent paper for a course in their major.

The failure here rests in the "generic fallacy" discussed earlier in this paper. We've long believed that college admission standards and general education requirements in English literature and composition automatically equip students with adequate skills and competencies in reading and writing. Yet we know through personal experience that this assumption isn't always true.

> When we shake our heads in bewilderment at our students' apparent lack of skill as writers, we must recognize that part of their problem arises with us. First, our own sensibilities have become so finely tuned to our own disciplinary vernacular that our students – who do not possess this same level of proficiency – seem to produce poorly written work. Second, we seldom consider that we must actively and deliberately assist our students in developing the fluency we expect, yet students rarely become skillful in these specific disciplinary norms without receiving direct instruction. We must teach them that writing is essential to all professions yet differs quite significantly between them: part of becoming a philosopher is learning how to *write like* a philosopher, just as much as learning how to be a scholar of Latin requires learning how to read and write in Latin.[10]

Writing-intensive courses address the problem of poor-quality student writing by integrating specific instruction in expectations for written communication across curricular areas, accompanied by frequent opportunities for feedback and revision. Harvard University defines a writing-intensive course as including the following characteristics, which are typical of those at many colleges and universities.[11]

1. Timely feedback on student writing, both written and spoken, during one or more conferences between the student and instructor.
2. Opportunities for revision of written work, including a sequence of draft, feedback, rethinking, rewriting. Peer feedback and evaluation may also be included.
3. Multiple or sequential writing assignments throughout the semester, or a longer paper completed in installments.
4. Small class sizes or the capacity for small sections within larger classes, ensuring students receive individual attention.

5. A significant portion of the student's grade depends on the quality of thought expressed in good writing.

Writing-intensive courses can exist in any major and pair with virtually any academic content. Of course, written assignments are ubiquitous across most courses, but the decisive factor in a writing-intensive is embedding instruction in writing coupled with individual attention to helping students become better writers. We should include specific course objectives for writing in addition to our disciplinary learning goals, and employ formative assessment of students' written work. For instance, instead of assigning one big research paper due on the last day of class, we could scaffold the task incrementally, each of which receives critique and opportunity for revision. We should also embed explicit instruction in the modes and expectations for writing in our primary discipline. Instruction could include good examples of disciplinary writing such as articles from professional journals. We should also teach students how to critique one another's work and how to use proofreading and editing software effectively. Most of all, the writing tasks we assign should be purposeful and meaningful. Writing shouldn't just be a way of generating a course grade – it should actively engage the student's curiosity, creativity, and intellect.

To convert a regular course into a writing-intensive, it might be helpful to consider these questions.[12]

- Are there any areas where you could add lessons that include writing activities?
- Can you identify any written assignments where you could schedule opportunities for individual feedback prior to students' submission of the final paper or project?
- Have you included direct instruction in the norms of written communication in your particular discipline, including key terminology, vocabulary, preferred style guides, and resource materials?
- Have you built in opportunities for students to read and analyze professional writing in your discipline?
- Could you develop your writing assignments more fully, providing resources, templates, outlines, or other scaffolding that will allow students to meet your expectations successfully?

We might also want to remember that teaching a writing-intensive course is not something best suited to all faculty. Art Young offers this wise advice:

> Assign only writing that you want to read. . . If you have little interest in reading student writing, chances are that students will have little interest in writing it. Under such conditions, we teachers create a situation in which writers who don't want to write, write for readers who don't want to read, and we do this in the name of improving communication. . . . Rather, writing across the curriculum suggests that we begin by creating assignments in a classroom environment where students and teachers are eager to read one another's work.[13]

Writing-intensive courses are a High Impact Practice because they effectively overcome the age-old problem of poor student writing. Their success has led to "parallel efforts in such areas as quantitative reasoning, oral communication, information literacy, and, on some campuses, ethical inquiry"[14] across the curriculum.

Recap

- Writing-Intensive Courses help students build proficiency in writing by embedding direct instruction in high-quality writing, timely and formative feedback, and opportunities for revision.
- Writing-Intensive Courses actively foster students' knowledge of writing for different audiences in different knowledge domains, transferring the act of writing from its former isolation in courses such as Composition 101 to disciplinary applications.
- By learning how to become proficient writers, students also learn how to identify, process, synthesize, and publish the knowledge they acquire through their studies.

Design Connection

WHY? Empathize	HOW? Define and Ideate	WHAT? Prototype and Test
Empathizing with both faculty and students is essential in creating effective writing intensive courses. What do faculty want their students to know and be able to do? How do they feel about teaching and assessing student writing? What strategies can we envision that will meet both the needs of the audience and the needs of the writers?	Writing intensive courses and efforts to teach writing-across the curriculum have existed for quite some time, so a great deal of information about their design and implementation is available to us as course and program developers. Nevertheless, the best strategies will mobilize the human, programmatic, and curricular resources available at your institution, customized for your faculty and students.	Pilot courses should assess students' achievement of learning outcomes and measure instructors' subjective perceptions of students' increasing proficiency as writers. Assessment should not be limited to the course but extend into surveys of faculty who teach these students in subsequent courses to gauge the lasting impact of the instruction they received in their writing-intensives.

Creativity-Infused Learning: the Missing HIP

Infusing creativity into students' educational experience is not among the HIPs promoted by the AAC&U, yet research into the advantages of direct engagement in making and doing reveals similar benefits. A few excerpts from *Surveying the Landscape: Arts Integration at Research Universities* (2015) serve to illustrate this point.

> Students in any major field and at every level from undergraduate students to doctoral candidates experience the benefits of hands-on participation in making, doing, creating, and performing, just as faculty members from across the university find that their personal participation in arts practice enhances their work in their major academic discipline.[15]
>
> The arts provide intrinsically engaging content, allowing students to connect with course topics on a more emotional or visceral level than lectures, textbooks, and research papers. Furthermore, making and doing activate different parts of the brain than reading and listening, providing an enhanced learning experience and greater student engagement.[16]
>
> The arts encourage risk-taking, experimentation, and exploration, but university students arrive on campus pre-trained in risk-aversion, having grown up in an academic system rewarding them for achieving 100% on an exam, not for trying an exam multiple times until they "get it right." When students enter the workforce they find no such situation exists in adulthood: life demands a high capacity for iteration, a willingness to try and try again, seeking new means of addressing challenges.[17] Integrating the arts in the university helps to address this need, involving students in participatory investigations simulating likely conditions outside academia. [18]

Of course, making and doing are not the exclusive territory of the arts. Engineering, advertising, web design, writing, product development, publishing, and education are deeply creative fields, among many others. Building our students' capacity for creativity is all the more important as we find ourselves trying stimulate their suppressed imaginations, held at bay for so long by the pressure to achieve high scores on standardized tests and their hyper-saturation in media and entertainment that leaves little room for independent thinking.

Businesses constantly cite creativity as a crucial competency, yet our schools produce just the opposite.

> We are not talking about high art, but empowering people to use their imagination. Not everyone can be Mozart, but everyone can sing. I believe everyone is born creative, but it is educated out of us at school, where we are taught literacy and numeracy. Sure, there are classes called writing and art, but what's really being taught is conformity.
>
> Young children fizz with ideas. But the moment they go to school, they begin to lose the freedom to explore, take risks and experiment.
>
> We spend our childhoods being taught the artificial skill of passing exams. We learn to give teachers what they expect. By the time we get into industry, we have been conditioned to conform. We spend our days in meetings and talk about "thinking outside the box". But rarely do we step outside it.[19]

These words, although dire, have the ring of truth. Picasso famously said, "Every child is born an artist. The problem is to remain one as he grows up."[20] We can easily see this in the wildly unconstrained creative activities of very young children, which become increasingly conventional as they progress through school. There's no hidden agenda among schoolteachers to squash creativity, but the norms and practices of public education reward conformity over originality. Once these students arrive in our college classrooms, their creative skills are rusty, at best.

> A 2010 study from the College of William and Mary examining more than 300,000 creativity tests dating back to the 1970s found that creativity has declined generally among American children. Researchers studied results of the Torrance Test of Creative Thinking, an exam often called the "gold standard" for measuring creativity in children. The test is widely trusted because of its high correlation rate between its scores and future accomplishments — high test scores on a Torrance test correlated to three times more lifetime accomplishments than child IQ tests. The findings stated that children were becoming less humorous, less imaginative and less able to generate unique ideas. While creativity is innate in humans from birth, it's a quality that has to be nurtured to be useful, like any skill.[21]

Reasons for this are many. The high-stakes testing culture of K-12 education has eased somewhat with the expiration of "No Child Left Behind" in 2015,[22] but today's college students lived with this pressure – and its impact on their schools – through the majority of their lives prior to stepping foot on our campuses. Furthermore, increasing childhood use of technology also hinders creativity.

> "Focus is the superpower of the 21st century. You need to be able to think deeply to get ideas and put them into action," said creativity researcher and UC Berkeley sociologist Christine Carter. "But a brain that's used to being highly stimulated can't do deep work. It can write a tweet, it can't write a book."
>
> The consequences of a creativity decline are dire, said Wellesley College psychology professor and creativity researcher Beth Hennessey. "Creativity is what moves civilizations forward. Creativity for its own sake is important, but it's also important for solving the world's intractable problems — how will we cure Zika or solve global warming or cancer?" Hennessey said. "Without creativity and imagination, none of those thorny problems will be solved."[23]
>
> "We tend to think nothing is happening when we're daydreaming, but the brain just totally lights up in those moments because that's when it makes connections between things it didn't see as connected," Carter said. "Technology really impacts us in that way because it basically steals all our down time. When kids might have been playing, daydreaming or just waiting for your parents to come pick you up — that's high creativity-building time that's now taken up by our devices."[24]

We adults are often guilty of the same thing, of course. It's part of the nature of today's lifestyle. However, most adults' childhoods were filled with far more unstructured non-electronic play than those of our current students, which nurtured our creative capabilities when our brains were developing. Now consider this: Kyung-Hee Kim, the principal investigator in the 2010 William & Mary study, found the sharpest declines in creativity among 5 – 10-year-olds.[25] It's not difficult to calculate that these very students are now college-age, or soon will be. Our students widely believe there is one right answer to a question, and when they find it, they move on. They believe that mistakes are bad and should be

avoided at all costs. They study only for what will be on the exam. And they are convinced that optimal workflow should proceed in a measured an orderly fashion.[26]

Those of us who teach in creative fields recognize these beliefs as the very antithesis of creativity. We know that there are many potential answers to a given question, mistakes can be cause for celebration, investigations can take us delightfully away from the beaten path, and workflow is rarely if ever predictable. The question is, how do we convince our students?

Interestingly, public libraries, children's museums, and public schools have begun to combat declining creativity by establishing "maker spaces" where students can experiment with physical materials in combination with digital technologies.[27]

> Makerspaces are zones of self-directed learning. Their hands-on character, coupled with the tools and raw materials that support invention, provide the ultimate workshop for the tinkerer and the perfect educational space for individuals who learn best by doing...they promote multidisciplinary thinking and learning, enriching the projects that are built there and the value of the makerspace as an educational venue.[28]

We can draw inspiration from these efforts and, in the spirit of HIPs, begin to infuse creativity into our students' college experiences. Any course can become a writing-intensive if it incorporates certain practices, and in this same vein, we can also develop creativity-infused courses. These should include several of the following strategies:[29]

- Write learning outcomes for increasing students' creativity and develop a means of assessment (pre- and post-course survey, reflective essay, etc.)
- Include opportunities to identify problems or discover multiple solutions to open-ended problems. Problem-finding asks students to identify missing information or apply intellectual or imaginative vision, leading students to think deeply and ask critical questions.
- Scaffold students' learning of design thinking methods including brainstorming, ideation, and prototyping, providing guided practice (ala "design thinking bootcamp") prior to expectations that students use these skills independently.
- Stock quantities of common inexpensive materials with which students can build models and prototypes (cardboard, tape, construction paper, post-it notes, markers, masking tape, yarn and twine, tempera paint and brushes, household odds-and-ends like clean empty yogurt cups, milk jugs, water bottles, etc.)[30]
- Allow students to fail. Resist the temptation to re-direct them or step in to make things right when you can see where they're going wrong.
- Debrief each project with students, encouraging them to reflect on what they learned through both success and failure.
- Ask open-ended questions as students are working. Avoid answering students' questions directly. Saying, "I don't know, what do you think?" sparks further thinking, whereas, "Here's a website with a tutorial that shows you how to make a ____" shuts it down.
- Re-organize the physical environment of the classroom to maximize workspace. If possible, large tables are preferable to individual desks.
- Incorporate both individual projects and collaborative work to meet the needs of students with different learning styles.
- Invite guest speakers who are creatives and innovators (in person or via Skype or other live online communication tools), asking them to share their experiences and ideas with students.

- Include required readings about creativity in the course syllabus. (Ex: Ed Catmull's "Creativity, Inc."; Twyla Tharp's "The Creative Habit" and more.)

Another strategy for infusing creativity into learning is by requiring students to complete coursework in fields that provide immersive experiences in making and doing. For example, students at Stanford University can choose from among dozens of courses to meet their Creative Expression requirement, many of which are interdisciplinary. They might create a portfolio of ceramic works as they explore questions of the physics of clay. They could combine computer coding, music composition, and performance as part of the Stanford Laptop Orchestra. Courses like Plein Air Painting, Acting for Non-Majors, or a multifocal music course in which students conduct a "critical and creative exploration of the performing body as captured on film" by viewing musicals, dance, opera, and music videos also meet this requirement, among dozens of other options.[31]

Example: Design Thinking for Entrepreneurs

Catalogue Description: Through their experience in this course, students will develop skills in ideation including design thinking, systems thinking, computational thinking, and more. They will apply these strategies to developing innovative entrepreneurial solutions to human problems, creating value and working towards the greater social good. No prerequisites.

This course uses a Course Pack containing readings from:

- Brown, T. (2009). Change by Design. New York: Harper Collins.
- Cabrera, D. and Cabrera, L. (2014). Systems Thinking Made Simple: New Hope for Solving Wicked Problems. Odyssean Press.
- Collins, J. (2005). Good to Great and the Social Sectors. [monograph].
- Kamoroff, B. (2013). Small Time Operator: How to Start Your Own Business, Keep Your Books, Pay Your Taxes, and Stay Out of Trouble. Lanham MD: Taylor Trade Publishing.
- Kelly, T. (2001). The Art of Innovation. New York: Doubleday.
- Liedtka, J., King, A., Bennett, K. (2014). Solving Problems with Design Thinking: 10 Stories of What Works. New York: Columbia Business School Publishing.
- Michalko, M. (2006). Thinkertoys: a handbook of creative thinking techniques. Berkeley: 10 Speed Press
- Osterwalder, A., Pigneur, Y. (2010). Business Model Generation. Hoboken NJ: John Wiley & Sons

Student Learning Outcomes and Course Objectives (emphasis added)

OUTCOMES	OBJECTIVES
Students will apply the principles and practices of entrepreneurship through critical analysis of the social and cultural contexts in which innovations occur in order to effect beneficial change within diverse populations.	Students will examine entrepreneurial principles and practices and their application to improving the quality of human life.
	Students will develop skill in multiple ideation strategies and apply them to real-world situations in group case studies.
	Students will explore the concepts of ethics and social responsibility within the cultural contexts of social problems and through their engagement in case studies.

Students will develop the ability to **create and launch a business venture or community organization**, identifying applicable strategies and utilizing effective business communications and entrepreneurial practices.	Students will apply the principles and practices of entrepreneurship to the creation of a business model addressing a social problem.
	Students will utilize effective written and verbal communication appropriate for business contexts.
	Students will create supporting documents and materials demonstrating their knowledge of applicable **strategies for innovation** and the social context of the problem.
	Students will increase their skills in **communication and collaboration** as they work in groups to complete case studies and **the course project**.
Students will integrate their skills and knowledge of entrepreneurship with multiple strategies for inquiry as they generate a potential solution to a social problem by **critically analyzing information, making value judgements, responding to challenges and demonstrating empathetic understanding** of the socio-cultural context of the target population.	Students will employ s**trategic ideation and entrepreneurial practices in the development of a group project envisioning a business venture or nonprofit organization** addressing a social problem.
	Students will investigate the problem's social, cultural, and political context as they conduct field research, interacting with the target population. They will identify issues regarding finance, taxation, regulation, risk, insurance, branding, marketing, and communication related to their proposed business or organization.
	Students will **formulate the business model for an entrepreneurial venture creating a product, service, or organization intended to address a social problem**.

Assessments and Assignments

Item	Weight
Assignment 1: The Chair Problem	25
Assignment 2: Easy Company Tea	25
Assignment 3: Case 1	100
Assignment 4: Case 2	100
Assignment 5: Case 3	100
Assignment 6: Group Project	200
Assignment 7: Peer Critique of Group Projects	50
Quizzes (50 points each) Quiz 1: Design Thinking Quiz 2: Strategies for Ideation Quiz 3: Business Basics	150
Final Exam	50
Attendance and Participation	200
Total points	1000

Design Thinking for Entrepreneurs relies on active learning and front-loads skills through a design thinking bootcamp experience, exploration of strategies for ideation, and teambuilding through short-term design challenges. Every assignment involves creativity as students work independently and

cooperatively to meet design challenges. Students then work in teams to generate design thinking solutions to three case studies involving social problems. Finally, they demonstrate their learning as they design a creative entrepreneurial solution to a "wicked" social problem. Students learn about entrepreneurship through their lectures and readings, then put that knowledge into practice as they engage in the design thinking process through the point of prototyping (an actual launch of the business or organization they envision is not within the course parameters), sharing their work in a final presentation.

Therefore, the course includes several of the Eight Key Elements of HIPs.

- Performance expectations set at appropriately high levels – *clear grading standards are presented at the onset of each project or assignment.*
- Interactions with faculty and peers about significant matters – *students' projects involve real-world problems, which shape their discussions with faculty and peers.*
- Experiences with diversity, wherein students are exposed to and must contend with people and circumstances that differ from those with which students are familiar – *students must interact with the population for whom they are designing their entrepreneurial solution.*
- Periodic, structured opportunities to reflect and integrate learning – *group discussions of case studies and projects, both final and in progress, are shaped by reflective questioning.*
- Opportunities to discover relevance of learning through real-world applications – *these factors are inherent in the process of attempting to solve a real-world "wicked" problem.*
- Public demonstration of competence – *the final presentation and subsequent discussion serve as a public demonstration of competence.*

Integrating creativity-infused learning, like writing-intensive courses and many other HIPs can occur at the level of an individual course or as an institution-wide initiative. Our goals, resources, and eventual choices of what we will do and how we will do it will vary widely, but our motivation across all the design criteria remains the same: to help students unlock their innate creativity by whatever means are within our reach.

Recap

- Creativity-Infused Learning is not an official HIP but bears many similar characteristics, sharing several of the Eight Key Elements of HIPs.
- Its purpose is to address students' declining creative skills and competencies, which has become increasingly problematic in both higher education and in the workforce.
- Creativity can be built into courses in the same manner as a writing-intensive focus, students could meet creativity requirements through existing courses in the arts or other creative fields, or new courses, exemplified by Design Thinking for Entrepreneurs, could take an interdisciplinary approach to fostering students' creativity.

Design Connection

WHY? Empathize	HOW? Define and Ideate	WHAT? Prototype and Test
Our students' K-12 years were vastly different from our own. Faculty need to understand how this has affected them, especially as research shows that creativity has been on the decline for decades. This has become increasingly problematic as the result of digital immersion, the lack of exposure to free play in non-digital environments, and academic pressure associated with the culture of in high-stakes testing prevalent until the late 2010s. If our graduates are to be able to meet the demands of a robust creative economy, they need focused opportunities to build their creative muscles.	We can begin with our existing resources as we define and ideate around infusing creativity into our curriculum. All institutions of higher learning presently offer courses in creative fields, whether the arts, writing, advertising, engineering, etc. We can consider how to adjust degree requirements to include a making-and-doing component, we can develop new courses that feature creativity among their learning outcomes, or we can add creativity to existing courses in the manner of a writing-intensive course.	Whatever we choose to pilot or prototype, infusing creativity into the curriculum should be as flexible and innovative as its name – we can find novel approaches to our curriculum and degree programs whereby we can address prior deficits in students' experiences, igniting their imaginations and rekindling their innate capacity to be creative. Traditional engagement in the arts is a time-honored pathway, but so are interdisciplinary approaches and novel solutions we have not yet imagined. Assessment mechanisms may be innovative, but we should identify ways to measure the impact of students' engagement in creativity-infused learning, such as pre- and post-experiential surveys.

Collaborative Assignments and Projects

The 21st-century workplace is inherently collaborative, despite lingering tendencies to valorize individuals. "Many innovations that seem to have been the work of a lone genius were actually group efforts. Thomas Edison, for instance, built a team of dozens of inventors in his Menlo Park lab, allowing him to work on numerous innovations simultaneously. Indeed, some historians have said Edison's greatest invention was not the light bulb, the phonograph, or motion pictures but the research and development laboratory."[32] We place Edison on a pedestal as a penultimate innovator, but we seldom recall the team that made his achievements possible. The same phenomenon occurs with star athletes, actors, and musicians: their achievements are laudable but they also depend on the equally impressive team with which they performed.

Our cultural preoccupation with individual achievement doesn't prepare students well for the necessity to become effective team members once they join the workforce, nor to work with others in civic organizations or social situations. This is where collaborative assignments and projects can help to bridge this gap. This might be seen as a HIP that crosses between and among other HIPs. At its most basic, collaborative learning means that students must work together to complete a given task, which can be of any duration. To rise to the level of a HIP, however, a bit more is required than simply placing students in groups by structuring tasks so that they utilize some of the Eight Key Elements of HIPs.

- Set group and individual performance expectations at appropriately high levels
- Expect students to invest a significant amount of time and effort
- Structure tasks to include interactions with faculty and peers about significant matters
- Provide opportunity to experience diversity as students are exposed to unfamiliar people and circumstances
- Build purposeful opportunities to reflect and integrate learning into the project
- Utilize problems or challenges that lead students to discover the relevance of their learning through real-world applications
- If possible, end the project with a public presentation demonstrating students learning and competence

Well-planned collaborative learning has many benefits to students.[‡33]

> Students who work in teams develop better oral communication, self-management, and leadership skills. Team-based or cooperative learning increases the quality of student-faculty interactions, bolsters students' self-confidence, and allows them to gain a greater understanding of peers from diverse backgrounds or perspectives.[34] Collaborative learning methods are "based on the assumption that learning is an active, integrated, and constructive process influenced by social and contextual factors"[35] – an idea supported by research such as a 2015 study at the

[‡] Higher Education by Design: Best Practices for Curricular Planning and Instruction (Mackh, 2018) offers an in-depth discussion of strategies for collaborative learning. The material included in this section is only a short excerpt from the book.

University of Haifa revealing that emotions occurring during social behavior directly influence the brain's processes of learning and memory.[36]

Collaborative assignments and projects exist at all scales and at all levels, from study groups to team projects lasting an entire semester or more. However, merely instituting a requirement that students work in groups does not automatically result in the benefits of collaboration. Just as we need to adjust our pedagogical practices to teach writing within our disciplines if we expect students to produce good written work, we also need to teach students how to function as a group. They tend to approach a group task from a "divide and conquer" perspective, divvying up the work and simply assembling the pieces just before the due date, with little attempt at synthesis or integration.[37] Although understandable, such an approach subverts the purpose of collaborative learning. Students also remain wary of working with peers who might not shoulder their fair share of responsibilities, or those who exert too much pressure on their teammates. These are genuine concerns, but they appear in the workplace, too. Learning how to work with challenging people is an important life skill, so we might want to think carefully before stepping in to smooth interpersonal frictions unless they become intractable.

Several design characteristics and group process strategies can enhance students' experiences with collaborative learning.[38]

1. Groups should be kept small (3 to 5 students) to foster meaningful interactions.
2. Mixed-ability groups tend to support the success of low-performing students.
3. Equal participation increases the likelihood that students will fully utilize one another's knowledge and skills.
4. Heterogeneous groupings support students' acceptance of diversity and increase learning, especially when tasks require creativity.
5. Open or loosely-structured tasks promote higher-level interactions, improve reasoning, and develop students' skills in application and evaluative thinking. Complex tasks produce deeper-level interactions than simpler tasks.

When Scager, et. al. (2016) conducted an investigation into collaborative learning in the sciences they found that the kind and quality of students' relationships has a sizeable impact on their learning. In relationships characterized by positive interdependence, group members experienced enhanced collaboration, occurring when students perceive each member's efforts to be essential to the group's achievement. It also resulted in individual accountability – feelings of responsibility for completing one's own work and helping other group members. Relationships demonstrating reward-based interdependence occurred when students' individual grades depended on the achievement of the whole team. The task stimulated students' interest, while the reward of a good grade promoted motivation. A third type of relationship, structured task-based interdependence, occurred when individuals were assigned different roles, resources, or tasks, generally accompanied by a set of rules by which the process should occur. However, researchers found this high degree of instructor-imposed direction to detract from the high-quality learning experience that tool place under more open or loose structures.

Researchers found that the greater the degree of autonomy the group held over their actions, the stronger their feelings of ownership and the more positively participants viewed their experience. Complex or dense tasks cause group members to depend on one another, strengthening their learning. Likewise, participating in meaningful or relevant tasks led to higher motivation and engagement: when students knew that their work had intrinsic value and would lead to a published article, research proposal, book, or other product beyond merely earning a grade, they took their work more seriously. [39] The same was true if they could see that their work would have a positive impact on others.

It's worth repeating that the ability to work on a long-term project is among the Big Six experiences that strongly correlate with students' quality of life and career satisfaction. Likewise, we might recall a well-known IBM CEO study (2012), which revealed that, "CEOs regard interpersonal skills of collaboration (75 percent), communication (67 percent), creativity (61 percent) and flexibility (61 percent) as key drivers of employee success to operate in a more complex, interconnected environment"[40] – all skills that can develop through collaborative learning.

Since we can implement collaborative projects and assignments into a wide array of courses, we'll consider our design elements from the perspective of what one faculty member might consider when building this HIP into a course.

1. Into which of my courses will I add a collaborative project?
2. What scale would be most appropriate for this project? (How long should it last? How heavily should it be weighted in the course grade?)
3. What components should be included? (Evidence of group planning, mid-term progress-check, written documentation, peer evaluations, final presentation, other?)
4. To what extent will students utilize interdisciplinary connections and how will they do this (if relevant to their investigation)?
5. What actions will I take as an instructor to help students integrate their learning in and through this project and how will I know what they have learned as the result of this experience?
6. What role will I play as students are working with their teammates?
7. What do I expect of students individually? What do I expect of the groups?
8. How will the projects ensure equity of access and integrate experiences with diversity? (Structure of group membership, provision of needed resources, clear expectations for participation and procedures to follow if conflict resolution assistance is needed.)
9. How will I facilitate students' experiential learning, build connections to the topic and discipline of my course, and/or apply students' learning to real-world issues and needs?
10. How will the project include, reinforce, or apply co-curricular experiences? (What must students do outside of class and how will I hold them accountable?)

These questions can begin the ideation process but answers will probably be much more extensive by the time the project is ready to launch as a prototype. Action research methods would be very helpful,

too, allow the faculty member to collect observational data and use it to test and refine the project prior to trying it again with a new class.

Altering our preferences for familiar pedagogies is challenging, particularly for those of us who have grown accustomed to direct instruction. Nevertheless, well-designed collaborative learning experiences may be one of the best things we can do for our students since they support so many of the best aspects of HIPs and can be applied in such a limitless array of contexts and settings.

Recap

- Collaborative Assignments and Projects build essential 21st-century competencies in teamwork and cooperation as well as fostering a sense of responsibility, appreciation for the perspectives of others, and proficiency in written and verbal communication.
- Collaborative Assignments and Projects are among the most flexible of the HIPS, existing as university-wide initiatives and at every level down to single class periods. For the greatest impact on learning, faculty should plan student groups strategically and set forth open-ended tasks requiring students to take responsibility for the outcome of the project or task at hand.
- Long-term projects have proven benefits to students, both as learners and in their future lives and careers.

Design Connection

WHY? Empathize	HOW? Define and Ideate	WHAT? Prototype and Test
Whether our students realize it or not, collaborative learning is essential to their personal and professional futures. It helps them develop essential life skills, deepens their learning, and assists them in making connections across their studies.	Faculty development is crucial to collaborative learning, since we can implement it at every scale from a single class period to an entire degree program. As we define how we want to utilize collaborative learning, we may also want to ideate around our longstanding reliance on evaluative practices emphasizing individual achievement. It may be quite worthwhile to find ways to accommodate systems of evaluation – for faculty and students – that recognize excellence in collaborative activities.	Prototyping should encompass several dimensions pertaining to collaborative learning. How will we train faculty in this instructional method? How will those faculty implement collaborate learning in their classrooms? How will we assess student learning if achievement rests with the group rather than the individual? Testing these questions as we consider the results of our evaluation can lead to stronger programs that balance group and individual achievement.

Undergraduate Research

Not so long ago, hands-on participation in faculty research seemed to be the sole province of graduate students, while undergraduates remained in the classroom to acquire prerequisite skills and knowledge within a research discipline. However, undergraduate participation in faculty-led research and creative activities has grown in prevalence over the past three decades, moving outward from the sciences through the full range of research-based and creative fields.

> Undergraduate research and creative scholarship activities represent one of the stronger examples of a high-impact learning practice that can advance the key characteristics of the university's mission. Mentored research, in which students and faculty work together to discover new knowledge, apply it to their discipline, and share it locally, nationally, and globally, is instrumental in helping individuals think analytically, question critically, and discover the enduring joy of inquiry. Undergraduate research simultaneously strengthens undergraduate education; provides additional outlets for faculty to teach, research, and serve; and fosters the creation of a community of scholars that is essential to the intellectual health of the university.[41]

Students reap a number of benefits through participation in mentored research.[42] [43]

- Increased persistence and gains in skills such as gathering and analyzing data or speaking effectively.
- Understanding that learning can be active and their knowledge transferrable to other situations.
- Discovering that they can take responsibility for creating new knowledge and can answer meaningful questions and help to solve real-world problems.
- Developing core competencies including responsibility, persistence, synthesis, analysis, attention to detail, teamwork, leadership, commitment, patience, and ethical behaviors.
- Clarifying students' choice of major; developing a stronger sense of connection to an academic discipline.
- Connecting students to a community of practice including faculty and external practitioners, allowing students to develop a professional identity.
- Encouraging persistence when faced with setbacks.
- Stimulating interest in graduate study and predicting graduate school success.
- Fostering self-confidence, self-efficacy, deep thinking, and intercultural competence.
- Experiencing personal satisfaction with their undergraduate education.

According to the Council on Undergraduate Research, two primary varieties of undergraduate research exist. Course-based research, as the name implies, embeds student research participation in a course that includes an emphasis on teaching students the norms and practices of research through a combination of instruction and direct experience.[44] The other common practice places undergraduate research into experiential learning settings such as summer seminars, where students and faculty work together on long-term, meaningful projects. Students actively engage in the research process rather than passively observing it, working alongside a mentor who guides the student through the experience,

often in an apprenticeship model. The mentor is usually a faculty member but could also be a graduate student, post-doctoral researcher, or upper-class peer. [45]

Undergraduate research aligns with four of the Eight Key Elements of HIPs:

- Significant investment of time and effort by students over an extended period of time
- Interactions with faculty and peers about significant matters
- Opportunities to discover relevance of learning through real-world applications
- Public demonstration of competence

It also meets elements of the Big Six in the opportunity to work on a long-term project, and in developing a mentoring relationship with a faculty member who encourages the student to pursue their goals and dreams.

The strengths and advantages of student involvement in research and creative practice are many, yet those planning to establish opportunities for undergraduate research at their institutions should be aware of common issues and concerns that can affect the success of our efforts. Let's look at this through the three lenses of innovation.

> **Desirability**: Although the student benefits of undergraduate research may be persuasive enough to convince us to take action, the most crucial factor in successful implementation is garnering the engaged and enthusiastic participation of faculty. As we begin to design around our intentions, how can we encourage faculty to become part of these efforts and make space to include undergraduates in their research and creative activities? How will we prepare them for their role as mentors? How will we support their scholarship and their contributions to their professional communities through the work they do with student researchers?
>
> **Feasibility**: Our institution's infrastructures and resources must be sufficient to meet the needs of student and faculty researchers. If not, where can we find funding or establish relationships with external partners that could provide needed support? How can we integrate undergraduate research into students' degree plans and incorporate it within our curriculum? How can we compensate faculty for their participation? Furthermore, research in many fields takes place off campus, which introduces yet another set of questions and variables. Sending students on site-based research means we must plan for their travel, food, and accommodations and be prepared to handle matters of adequate supervision and support while they're in our charge outside of the normal academic environment. How do we prepare them for the experience they will receive? What are our emergency and contingency plans while we're far from campus? What issues of ethics or liability will shape the programs we are attempting to design?
>
> **Viability**: After planning for this work, we should look beyond the first implementation of our efforts to how we can sustain our undergraduate research programs in the long term. How will we continue to inspire faculty to participate? How can we market these opportunities to

students to ensure their participation will be sufficient to keep the programs we establish operating at optimal capacity? If we base our budgets on grants or partnerships, how will we ensure that such funding will remain stable in years to come, not just for the present? And, how will we assess our efforts' success and make room for continuous improvement?

The following considerations may help to clarify the issues we've discovered. Given the vast differences that exist between institutions, a comprehensive list is not possible, but perhaps these suggestions will aid in planning and implementation.[46]

- The campus mission and culture should support undergraduate research as a high impact practice. This reflects a student-centered mindset that values the experience and education students receive via their direct participation in research, not just the inherent value of research, or its centrality to faculty members' job descriptions and professional identities.
- Administrative structures including adequate budgets, graduate assistantships, or postdoctoral teaching fellows are necessary to success, as are research infrastructures including labs, studios, equipment, and workspaces sufficient for projects' needs.
- Policies and practices for faculty retention, promotion, and tenure should recognize faculty involvement in undergraduate research, including consideration for ensuing publications, embedded student mentoring, and related issues. Likewise, summer research positions should extend to non-tenure-track faculty who do not have research among their responsibilities during the regular academic year.
- Awards for Excellence in Research given to both students and faculty can help to encourage participation, as well.
- The university should help faculty secure external funding or sponsors, assist with grant writing, and provide other support, as needed.
- The university should also establish channels for disseminating research and creative activity produced through mentored scholarship and create incentives for faculty to seek presentation opportunities at conferences or publication in professional literature.
- A common assessment tool should extend across undergraduate research activities occurring within the institution, gathering feedback from all participants and guiding subsequent program improvements.
- Equitable procedures for faculty assignments should consider the time commitment involved in undergraduate research activities, including curricular development, compiling grant proposals, and writing manuscripts.
- Financial incentives such as faculty mini-grants and travel funds help to motivate faculty participation. Compensation for summer participation could include stipends, course credit, credit towards research leaves, and budget allocation for research supplies.
- Some institutions compensate students for their participation in summer research with a stipend and/or academic credit.

Of course, most institutions maintain expectations that faculty will engage in research or creative practice as part of their contractual duties, based on a presumption that they will bring their scholarship

into their classrooms, laboratories and studios for the benefit of their students' learning. Mentored research expands the efficacy and importance of this expectation. When faculty allow students to work side-by-side with them on meaningful projects, routine expectations blossom into high impact practices, benefitting all participants.

Recap

- Undergraduate research affords valuable opportunities for students to participate in their professors' research or creative activity, to receive personal mentoring, and to solidify their choice of major.
- It provides authentic learning, often in contexts outside of the classroom, allowing students to make connections between the abstract and concrete domains of higher education. Faculty serve as mentors to their undergraduate research assistants, involving them in all aspects of their professional practice so that students can see first-hand where their major could lead them.
- Although undergraduate research builds on longstanding expectations for faculty research and creative practice, careful planning, implementation, and maintenance are needed for success.

Design Connection		
WHY? Empathize	HOW? Define and Ideate	WHAT? Prototype and Test
Undergraduate research lets students experience the excitement of the fields they hope to pursue, stimulating engagement and persistence more effectively than traditional approaches that delay direct participation until graduate school. It also provides opportunities to develop mentoring relationships with faculty and to engage in meaningful and relevant activities related to their aspirations.	Our efforts to establish undergraduate research should encompass professional development as we prepare faculty to engage students in their research or creative activities. We must also define the scope of our efforts and clarify how we can meet our goals, whether through changes to standard curricula or structural innovation such as the addition of summer research intensives. Matters of funding and sustainability are crucial, as are administrative and structural considerations that can either help or hinder the success of our efforts.	Initial efforts in undergraduate research, like other pilot programs, should be accompanied by assessment mechanisms allowing us to gauge the success of our efforts. We should also recognize that student participation in research and creative activity not only benefits students but supports the continuation of our disciplines as we identify and develop future practitioners. Pilot programs should include both short-term and longitudinal assessment to determine success factors at the conclusion of the program and their lasting impact on students' academic achievements and subsequent involvement in graduate programs and careers.

Diversity/Global Learning

The importance of developing students' appreciation for diversity and their ability to work with diverse individuals runs throughout HIPs. It also undergirds the AAC&U's support of "inclusive excellence" which institutions achieve when they "integrate diversity, equity, and educational quality efforts into their missions and institutional operations."[47] This rests on three practices:

- Increasing the diversity of the student body through equitable admissions policies and practices.
- Providing all students with a clear path towards educational opportunities.
- Embedding diversity in the institution's mission to produce and transmit new knowledge.[48]

"Students often come to college from incredibly segregated residential patterns and K-12 schools. So they don't have a whole lot of preparation for interacting with people different from themselves," (Shaun R. Harper, Executive Director of the USC Race and Equity Center).[49] College might also be the first time students confront a variety of perspectives on a given issue, or experience a disruption in the attitudes and beliefs they absorbed from their families.

> The more interaction one has with others who hold different views, or the more one learns about various aspects of human diversity, the more likely it is that one will be challenged to think and respond in novel ways. For example, people who interact with more complex social structures exhibit a heightened sense of individuality while simultaneously showing a more complex attentiveness to the social world.[50]

Despite our better intentions or public statements of our institutional support of diversity, equity, and inclusion, the character of our campuses may still cause diverse students to feel that they do not belong. Shaun Harper explains:

> When in every class you enter, you are the only one or among only a few of your racial group in that class, it might signal to you that you don't belong. Or if in every class, all your professors are white, it might signal to you that smart people of color don't belong here. Or when the only people who look like you are cutting the grass, emptying the trash or frying French fries in the food court, that might suggest to you that my people are not thought of as professorial or professional. Not that custodians, grounds keepers and food service employees are not professional; but they are not located at the power epicenter of the campus. That signals to a young Latina that Latinas like her are not highly valued at the institution.

This quote exemplifies structural diversity, or the institution's demographic profile. Identities of race and gender tend to receive the most attention in our institution's demographic profiles, but other dimensions of diversity such as age, disability, socioeconomic status, ethnicity, religion, sexual preference, gender identity also have a profound impact on students' collegiate experiences.

Classroom diversity involves instruction about cultural practices and issues relating to marginalized, underrepresented, or minority groups.[51] However, merely studying "the other" does little to change

students' attitudes towards diverse individuals. Instead, we build classroom diversity when we teach students how to learn *in collaboration with* others rather than learning *about* others.

Classrooms can become incubators for cognitive diversity. Individuals bring different tools to solving problems as a group, including ways of representing situations and problems, generating solutions to problems, categorizing perspectives, and inferring cause and effect. These perspectival differences underlie the value of interdisciplinarity: since each of us is steeped in the particular ontologies, epistemologies, and methodologies of our disciplines, we bring different strengths to collaborative work. Cognitively diverse groups can demonstrate superadditivity, meaning that the solutions they generate are greater than the sum of their parts.[52]

Just as universities establish writing-intensives in disciplinary courses, they also provide intensives in diversity and global learning. Such courses often include features such as:

- Diversity content focusing on historically disenfranchised social groups in the US, national identity groups external to the US, or both.
- Assignments and course activities that instigate deep reflection and increased self-awareness of one's own social identity/identities.
- Co-curricular activities involving interactions with peers or groups from different backgrounds, explore unfamiliar places, or apply new perspectives.
- Infusion of diversity- or globally-connected topics across the entire course.
- Facilitated discussions that invite students to share reflections and experiences to improve their communication skills and deepen their knowledge and understanding.[53]

Every course can support diversity by creating a safe space for difficult conversations and ensuring that all voices are heard and all perspectives are valued. Employing critical theory allows students and instructors to examine common disciplinary norms and practices to identify implicit bias and exclusionary practices. We can also analyze the history and practices of our disciplines. How have they affected civilization? Do they empower or oppress various groups? Are they intrinsically or intentionally inclusive or exclusive? Such conversations can open our minds to aspects of our disciplinary identities we have long taken for granted.[54]

We might differentiate between diversity and global learning in their tendency to focus on the composition of our immediate culture and our interactions in a globally connected world. In both cases, critical thinking plays a significant role. Teaching students to think critically is among the goals of our first-year programs, but we often stop at criticizing the ideas of others. Critical thinking is also a tool for reflecting on one's own assumptions and strengthening one's own understanding.

> Engaging with civic knowledge and diversity should mean applying critical thinking to learn about "the other" and to learn about oneself. Students should understand how gender, race, ethnicity, class, and religion affect those who are different from themselves, but they should also understand how these forces affect them. Just as in a democracy, students should analyze and critique the other's and their own positions.

> In this context, the parallels between interdisciplinary and intercultural engagement abound, with deep implications for the way we teach and learn. Like diverse groups in society, each academic discipline (and each person within each discipline) provides unique perspectives on significant questions. Likewise, the boundaries of each discipline support faculty identities. Faculty who succeed in interdisciplinary teaching are able to stretch beyond their disciplinary training, taking delight with others in the mutual enrichment of their disciplines and encouraging students to appreciate connections among diverse approaches to knowledge. Interdisciplinary teaching and scholarship provide an opportunity to reflect on, test, and strengthen one's own ideas and assumptions while working with colleagues from diverse disciplines toward mutual understanding and achievement. These benefits are very similar to the benefits of engagement with diversity in a pluralist democracy.[55]

Teaching for global learning should include emphases on shifting one's perspective.[56]

- Problem framing: purposeful examination of the ways in which different people define and experience local, intercultural, international, and global challenges to human and environmental well-being and problem solving.
- Perspective consciousness: insight into one's own beliefs, values, and assumptions and the ways in which these are similar to and distinct from those held by others at home and abroad.
- Global perspective: the ability to construct an analysis of a complex trans-border problem that takes into account multiple interpretations of its causes, consequences, and proposed solutions.

> Global learning also helps groups capitalize on their diversity to formulate more innovative, equitable, and sustainable solutions for the world's interconnected human and natural communities. In this way, global learning advances personal well-being and a sense of civic purpose by providing circumstances that push individuals to engage with diverse others in order to develop a unique sense of self and perceive the value of participating in collective decision making at local, national, intercultural, international, and global scales.[57]

The most powerful tool for opening our students' hearts and minds to diversity lies in helping them build relationships.

> When we develop personal relationships with people who are not like ourselves, we grow to care about them, to respect them, reducing our previous fears and insecurities. We begin to experience pity, sympathy, empathy, and even compassion. . . . John Steinbeck wrote, "It means very little to know that a million Chinese are starving unless you know one Chinese who is starving."[58] When we build relationships with individuals from groups different from our own, they cease to be abstract and "other" and become our friends, our co-workers, or our neighbors. I can speak only for myself in this, but I know that my life has been immensely enriched by the relationships I've built and friendships I've made with people from Palestine, Iraq, Iran, Pakistan, India, the Bahamas, and China (among others), as well as friends who are female, Black, Hispanic, LGBTQQIP2SAA, and many combinations of these identities. . . . The

> more each of us builds relationships that transcend social boundaries, the more we open our hearts and minds to the simple truth that we are all one race – the human race – despite how cliché it admittedly sounds.[59]

This is why experiential learning strategies, particularly service learning, community-based learning, and study abroad can be so powerful. They take students out of their comfortable and familiar surroundings and place them in proximity to individuals within environments they've never confronted before. It's one thing to read about otherness, yet entirely another to experience it for oneself.

Taking all of these factors into account, how can we build diversity and global learning into our courses and programs?

- Reflectively and honestly, examine our own attitudes towards diversity.
- Teach students to think critically and reflectively, not just examining others' ideas but developing awareness of their own biases and preconceptions.
- Foster cognitive diversity by incorporating opportunities for students to work in diverse groups.
- Create and promote opportunities to participate in experiential learning (service learning, community-based learning, study abroad) that place students in proximity to others who are different from themselves or in unfamiliar cultures and environments.

As a final thought:

> We have made significant progress as a society over the past 100+ years, from the establishment of the 19th Amendment to the US Constitution finally granting women the right to vote (1919), to the Civil Rights Act (1964), to the Marriage Equality Act (2015). These are important steps along the journey, and deserving of recognition and celebration. Nevertheless, we cannot merely rest on these achievements. We must continue pressing on towards a truly equitable society in which all diversity is embraced and all people are included regardless of differences in any dimension of their identity. Our influence may be limited to our own classrooms and neighborhoods, or we may someday find ourselves in positions of authority where we have greater power to enact our ideals more broadly. If we each do what is within our ability and in accordance with our values, we can look forward to a day when all people are free to live their potential without fear of discrimination and prejudice.[60]

Recap

- Diversity and Global Learning are both a High Impact Practice and one of the Eight Key Elements of High Impact Practices because one of the most crucial aspects of higher education is to open students' minds to consider the viewpoints of others and to question their own preconceptions and biases. We become a more open-minded and accepting society the more we are able to move beyond the perception that someone different from ourselves is "the other" and to see them as someone like ourselves.

- Experiential learning offers opportunities for students to encounter diverse individuals in settings or environments with which they are not familiar, such as community service or study abroad, which deepens their understanding of diversity near our campuses and globally.

Design Connection		
WHY? Empathize	HOW? Define and Ideate	WHAT? Prototype and Test
Empathy for our students is the single most important quality we can possess if we are to support diversity, equity, and inclusion. These descriptors are present in most college and university mission statements and are among the primary goals of HIPs. We live in a globally connected world filled with individuals unlike ourselves. Helping our students develop an appreciation and respect for others and begin to identify their implicit biases doesn't only help them as individuals – it makes the world a better place. But it begins with us – right now – in our classrooms, labs, offices, or studios. Public support for these efforts takes a distant second place to our demonstration of empathy towards our diverse students.	Diversity and global learning are both a HIP and a theme running throughout all of the HIPs. To design high quality student experiences, we need to heighten our awareness of opportunities to interject diversity into our courses and programs, to become more aware of our own attitudes towards others, and design activities such as community-based learning or study abroad that connect students with individuals and environments that broaden their minds and open their hearts.	Individual faculty efforts to increase diversity and global learning in their courses should receive support and recognition to encourage their participation. We should likewise establish, promote, and sustain experiential learning opportunities for students, including service learning, community-based learning, and study abroad, administering surveys and assessments that allow us to evaluate our efforts and re-cast them on a broad scale to allow (or perhaps require) all students to participate.

ePortfolios

The AAC&U initially championed HIPs in 2008, expanding the original list of 10 practices to 11 with the addition of ePortfolios in 2016. "The warrant for declaring ePortfolio practice a high-impact activity is that, on average, students who have a well-structured ePortfolio experience exhibit a similar desirable pattern of positive benefits associated with other HIPs."[61]

> As described in the research, HIPs effect enhanced student learning and success by bringing to the teaching and learning process the intentional and integrative characteristics associated with how humans learn; not just in the moment but for sustained use and transferability from one instance to different instances of practice and application. In short, all of the HIPs are HIPs not because they carry the label but because, when done well and with considered thought and implementation, they lead to deeper student learning, especially for traditionally under-served populations of learners.[62]

ePortfolios are both a product and a process. As a product, they represent a curated collection of evidence of students' learning as they construct a digital showcase for their achievements and accomplishments. Academic transcripts are limited to bare-bones evidence of courses completed and grades earned. ePortfolios, on the other hand, can include artifacts from coursework and from co-curricular activities, work experiences, volunteering, and more. As a process, ePortfolios provide opportunities for students to reflect on their learning but go beyond the simple acquisition of knowledge and skill to incorporate affective, personal, and self-identity dimensions.[63] Such metacognitive engagement serves as a force-multiplier for student learning, particularly when employed in conjunction with other HIPs because it amplifies the reflective and integrative activities characteristic of these practices. Furthermore, ePortfolios foster student agency because they allow the student free rein to select which artifacts to include and how they want to express their thinking about these items, fostering engagement and motivation.[64]

Despite the perception that ePortfolios are faddish or trendy, their use rests on sound learning theory.

> ePortfolios fall within a learning theory known as social constructivism, which proposes, in part, that learning happens most effectively when students construct systems of knowledge for themselves, rather than simply having information presented. Social constructivism also proposes that another determinant of effective learning is that it happens in a social context – that is, we construct our knowledge through dialogue and interactions with others. With ePortfolios, the process of reflection originates as a solo activity, but becomes social through a feedback loop, as the student's instructor, peers, mentors, and even family members respond to and provide commentary on those reflections. Making and then sharing an ePortfolio with others is somewhat like telling a story: the story of one's learning journey.[65]

Some institutions adopt ePortfolio platforms, sometimes linked to their Learning Management System (LMS). This allows faculty to have access to students' sites for grading and provision of feedback. Effective utilization requires broad buy-in, often facilitated by personnel in the institution's Center for

Teaching and Learning or similar organization. Faculty development is crucial in preparing to incorporate ePortfolios into the curriculum and embed them in student learning outcomes. However, one of the benefits of ePortfolios is their usefulness in job-seeking and career development, so institutions must plan for continued access to portfolios even though graduates generally lose their electronic access to university resources within a few months. Access will vary depending on the platform selected. For example, Brightspace allows users to transfer their portfolio by establishing an account with myDesire2learn.com, but it offers less functionality and storage capacity.[66] Platforms such as Portfolium and Pathbrite offer LMS integration and free user access for life, but costs incurred by the institution will vary.[67]

If an institution-wide approach to ePortfolios is infeasible, another option is for faculty or departments to facilitate students' creation of ePortfolios through a free or low-cost web hosting service like Weebly, SquareSpace, Wix, Behance, or Google Sites[68] -- a strategy long employed by the visual arts, among other disciplines. Professional networking sites like LinkedIn host portfolios, as well. Whatever approach we take towards ePortfolios, whether institution-wide or limited to a department, faculty can take the following actions to support students' use of this tool.[69]

1. Instruct students about the benefits of ePortfolios and their use in interacting with prospective employers.
2. Set clear expectations for the use of ePortfolios in your course.
3. Teach the processes for collection, selection, organization, and reflection and explain your criteria for evaluating the items students choose to place into their portfolios.[70]
4. Share examples of high-quality ePortfolios created by other students; create and share your own ePortfolio.
5. Incorporate the ePortfolio into the course's outcomes and tie assessments of students' portfolios to their course grade, using a rubric for grading as well as providing formative verbal or written feedback during the semester.
6. Include viewing and commenting on fellow students' ePortfolios in assignment requirements.

ePortfolios can be of benefit to learners, faculty, and institutions.[71]

Students	Faculty	Institutions
▪ Deepen learning by making connections across collegiate activities and achievements ▪ Integrate knowledge ▪ Increase ownership and engagement ▪ Foster goal-setting ▪ Create a portable evolving record of accomplishments	▪ Build connections with students ▪ Increase student engagement ▪ Improve student performance ▪ Provide tools for holistic assessment	▪ Improve student attainment of learning outcomes ▪ Provide documentation of student learning ▪ Enhance program focus ▪ Support program assessment ▪ Meet accreditation standards

Employers see value in ePortfolios, as well. "According to a survey of 318 employers, 83% said that e-portfolios are useful in ensuring job applicants have the knowledge and skills needed to succeed in their company."[72]

The role of faculty is crucial to the success of ePortfolio implementation. Left to their own devices, students' portfolios tend to be "glorified electronic filing cabinets" but when implemented in conjunction with purposeful instruction, portfolios can grow into meaningful and relevant tools for professional success and support students' learning.[73] A study conducted at California State University, Monterey Bay, examined students' ePortfolios created during a summer undergraduate research experience. Researchers' analysis of student work showed growth in four key areas.[74]

- **Reflection**: students' journey through higher education takes them through shifting identities as learners, researchers, writers, and scholars. Students in the study reflected on these questions in blog posts that required them to articulate their research to meet the informational needs of a non-academic audience.
- **Communication**: the same blog requirement strengthened students' written work as well as providing a means to share in one another's experiences during the summer project as they read their classmates' posts. Knowing that their writing would be available to the public motivated students to produce a higher-quality written product and to take greater care with editing before posting their work.
- **Professional Identity**: the act of developing an ePortfolio helped students shape their identity as scholars and researchers, strengthening their sense of belonging to an academic community.
- **Demonstrated Learning**: students' writing during and after their research projects demonstrated their growth as researchers and their thought processes tying their learning to experience.

An ePortfolio generally includes the following components, but this certainly varies based on individual preferences, disciplinary norms, and the field in which the portfolio owner works or hopes to work.[75]

- **Biography**: a condensed, narrative summary of accomplishments and experiences, usually written in a third-person voice. This section should include contact information and a photograph of the portfolio owner demonstrating a professional appearance. The portfolio owner's resume or CV should be downloadable from this area of the ePortfolio.
- **Educational Background**: a list of degrees earned or other academic achievements in reverse chronological order, detailing institutions attended, honors or awards, certificates, publications, professional licenses, internships, conferences or workshops, study abroad or other experiential learning, scholarships, and so on. This may also include a description of projects, coursework, transcripts, presentations, and student affiliations with professional organizations.
- **Professional Experience**: an explanation of how the portfolio owner's skills and experiences are suited to their professional goals and career aspirations. This can include specific information about jobs held and details about locations, job titles, dates of employment, duties and responsibilities. This section of the portfolio can also include certificates of additional training,

workshops, awards and honors, copies of the portfolio owner's resume and transcripts, volunteer work and community service, public speaking, publications, and other accomplishments occurring since graduation. Letters of recommendation and contact information for individuals willing to provide references could be included here, as well.

- **Performance, Skills, and Competencies**: evidence of the portfolio owner's skills and competencies, organized by skill area. This can include volunteer work, technical skills, proficiency in languages other than English, military service, participation in clubs or other co-curricular organizations. Evidence might include publications, electronic presentations, projects, assignments, research papers, writing samples, or other artifacts that represent knowledge or exhibit proof of proficiency.

Students should organize their portfolios logically, present their ideas clearly, and format their sites to align with their professional aspirations. A prospective pre-school teacher's portfolio should offer a significantly different impression than a biochemical researcher, for example. Furthermore, the portfolio's contents should meet the informational needs of a general, non-expert audience, avoiding jargon and maintaining a professional appearance. Items of a personal nature such as hobbies, family, or recreational activities should not be included unless directly relevant to the student's career aspirations and accompanied by an explanation. Likewise, personal beliefs, likes and dislikes, and political views should not be present in the portfolio. Students accustomed to active social media use may benefit from coaching on separating their professional and personal online presences and the reasoning behind these choices. The ePortfolio should never contain:[76]

- Criticism, complaints, or negative commentary about former employers, institutions, or any person, group, organization, product, or service.
- Inappropriate or potentially offensive content.
- Political or religious messaging.
- Photos portraying the portfolio owner as anything other than mature and professional.
- Errors in spelling, grammar, or language usage.
- Confidential or proprietary information about former employers.
- Private details about the portfolio owner or any other person.

Building a portfolio of any type is an inherently reflective task, involving complex decision-making about the items to be included, the order and sequence of these items, explanations that might help contextualize those items, and formatting, among many other factors. As students make these choices, they gain an appreciation for their accomplishments, seeing how far they've come and what they've achieved. They also make connections between what they've learned and the career they hope to pursue.

Although ePortfolios may not be as widespread as other HIPS such as Learning Communities, they have the potential to expand upon the best aspects of what we are attempting to achieve through these efforts. ePortfolios empower students to integrate their learning across each dimension of their

educational journey, supporting their ability to apply their skills, knowledge, and competencies to the successful completion of their degree programs and in their lives after graduation.

Recap

- ePortfolios deepen students learning as they collect, organize, and reflect upon evidence of their personal, academic, and professional achievements.
- ePortfolios are helpful tools in graduates' job search but are also useful in program-level assessment and as a tool for gathering evidence of students' learning.
- ePortfolios are scalable from institution-wide implementation to use by programs or departments.

Design Connection		
WHY? Empathize	HOW? Define and Ideate	WHAT? Prototype and Test
Most of our students will need help creating a high-quality ePortfolio that will serve as a tool for learning and reflection while also becoming a useful resource in their job hunt after graduation. Our efforts should keep their informational and instructional needs in mind while also persuading them to take the portfolio seriously and create a professional presence through the items they choose to include and how they choose to present them.	The institution should conduct thorough research of available ePortfolio platforms before committing to and implementing their selection. This must be accompanied by sufficient training to ensure that faculty and staff can use the system with proficiency and support students in their use of ePortfolios enthusiastically. Specific instruction in how to utilize the system as well as how to make reflective choices of what should be included are essential.	A pilot program can help to identify areas for improvement before launching an ePortfolio system across the entire university. Student, staff, and faculty input will be crucial in identifying areas for improvement and strategies for broad implementation.

Experiential Education

Service Learning and Community-Based Learning technically exist as a separate HIP than Internships and other workplace experiences. However, all three are forms of experiential education and are rooted in shared educational theories.

Experiential education builds on the work of scholars such as John Dewey (1938),[77] David Kolb (1984),[78] and Carl Rogers (1969, 1994).[79] It differs from cognitive learning, such as rote memorization of technical terminology or mathematical formulas, by addressing the needs and wants of the learner, resting on the central tenet that "learning is the process whereby knowledge is created through the transformation of experience. Knowledge results from a combination of grasping and transforming experience" (Kolb). Experiential learning places students in contexts where they can take initiative, make decisions, learn from natural consequences, and be accountable for the results of their choices. A well-designed experiential learning program embeds frequent opportunities for reflection, critical analysis, and synthesis to facilitate the cycle of learning by experience as students encounter genuine social, practical, personal, or research problems.

According to Kolb, experiential learning is a cyclical process in which learners:

(1) **Act**: participate in an experience
(2) **Reflect**: think about that experience
(3) **Learn**: form new ideas based on these reflections
(4) **Apply**: test their new ideas in a different situation, beginning the cycle once more.

Unlike the typical passivity of a classroom, students participate completely in the learning process and exercise control over its nature and direction. Students are the primary evaluators of their own learning, as well as assessing their own progress and success. The instructor acts as a facilitator who establishes a positive climate for learning, clarifies the purpose for the learner, organizes learning resources and makes them available to students, balances the emotional and intellectual aspects of the learning experience, and shares thoughts and feelings with students without dominating their learning experience.

Experiential learning differs from instructional strategies for active learning within a classroom or studio setting. Even where students engage in problem-based, project-based, or other pedagogies for active learning, classroom learning cannot substitute for the types of experience acquired in a real-world environment. For example, psychology students might listen to a lecture about domestic violence, but it's entirely different from volunteering in a local shelter for abused women and children. Likewise, some academic fields such as graphic design are inherently experiential because most learning occurs through doing rather than passive listening. Nevertheless, the experience of designing something in response to a class assignment is fundamentally different from working with a nonprofit agency to design a new logo that allows them to raise their visibility among their target audience.

Although professions requiring licensure such as healthcare or Pre-K-12 education maintain practicum requirements, many academic fields uphold a tacit belief that the responsibility to apply knowledge in practical settings rests with our graduates. Nevertheless, confining learning to the classroom is a far less effective pedagogical method than we've long believed. Educational psychologists such as Jean Piaget (1936)[80] and Jerome Bruner (1957)[81] and cognitive neuroscientists (Kandel, 2012[82]; Eagleman, 2015[83]) explain that the human brain learns by making connections between new knowledge and prior learning. The stronger those connections, the deeper our learning. Practice and repetition may be a key to learning, but the more we conduct this practice within authentic settings, the more effective and satisfying learning becomes. The human brain not only connects new learning to prior factual knowledge but to emotions, experiences, sensory input, and actions.

Experiential education provides invaluable opportunities for students to develop, reflect upon, apply, and transfer knowledge in real-world settings while remaining under the instructor's guidance, embedding learning in real-world contexts, and increasing student engagement with the topics they're studying. It allows us to deliver an educational experience that empowers students' academic achievement while also strengthening their ability to form their own connections between their education and their lives after graduation.

Service Learning and Community-Based Learning

Most institutions of higher learning maintain that their mission, at least in part, is to prepare their graduates to become contributing citizens who lead lives of service to their communities. The purpose of service learning and community-based learning is to place students in off-campus situations where they have opportunities to experience the social issues they are studying in the classroom as they interact with community members through activities that allow them to make a difference in the world, albeit on a small scale.

Preparing for experiential learning requires a significant investment of time and effort in advanced planning. The following is a partial list of actions that can help in planning service learning or community-based learning requirements.[84]

1. Identify and establish a relationship with community partners, discussing how your students can best serve the organization.
2. Write student learning outcomes contingent upon involvement in the planned experience.
3. Address any ethical issues that may pertain to the experience, ensuring the just and benevolent treatment of all persons involved. You may need to work with your institution's IRB to be certain that requirements have been satisfied.
4. Determine how you will handle any logistical issues such as
    a. transportation of students or project materials to and from the work site
    b. liability concerns, including drivers' licenses or insurance for those providing transportation
    c. media coverage, either by informing the local media of the project, creating posts to social media, or publicizing the project through campus communication channels

    d. clarifying the roles of all participants and providing for student supervision and oversight
    e. scheduling the project, creating a master calendar and agendas for each meeting, maximizing participants' time while at the job site
    f. training or orientation that might be required by the partner organization before students can engage in the project
    g. establishing contingency plans for when things don't go as expected, and also ensuring that proper procedures for handling emergencies are in place
5. Express any expectations and assumptions so that students, community partners, and the instructor all understand what each party hopes to gain from the project. Participants should also verbalize any concerns so that these can be addressed before they become problematic.
6. Compile all necessary information, documentation, and written materials, providing them to all participants. This may encompass:
    a. Information about required training, the work to be performed, what will occur after the completion of the project
    b. Broad issues related to the project such as the demographics and histories of the target population, including contextualization such as discussions of power and inequality
    c. All planned activities related to the project, calendars, schedules, and logistical information
    d. Incorporate instruction in problem solving, critical thinking, analysis, application, theorization, and reflection
    e. Plan for how you will assess student learning and how you will assign grades for students' involvement in the project
7. Communicate regularly with the partnering organization, visiting the project site, monitoring progress, and ensuring that students are functioning appropriately within the project setting.
8. Incorporate separate opportunities for debriefing and reflection for students and for participants in the partnering organization, allowing each person to think critically about their experience, relate it to larger social contexts and issues, recognize their involvement in the project's challenges and successes, and prepare for future engagement if possible.

Internships

Many fields require practical experience as a standard part of student learning. For example, education majors conduct student teaching or nursing students complete clinical hours. Schools of business have practiced this strategy for decades, sometimes with impressive results. For instance, 99% of the of the graduates of Babson College, a small business school in Massachusetts, acquire full time jobs within six months of commencement, as do 98.6% of graduates of the University of Pennsylvania's Wharton School of Business, and 98% of graduates of Emory University's Goizueta Business School.[85] If these results merely indicated that there are more jobs available in the business sector, we could expect to see similarly stellar job placement rates at all schools of business, but this is not the case. Students who major in business management experience an unemployment rate of 3.7% overall, on par with the average for all majors of 3.9%.[86] Rather, these institutions attain exemplary alumni outcomes by integrating preparation for the workplace in their curriculum and by establishing industry partnerships.

Practical student experiences can exist in many different configurations including but not limited to internships. Although we may use the following terms somewhat interchangeably, differences between them exist in practice. Each may be of benefit when we plan to add practical experience requirements to our degree programs.

- Internships involve a short-term, usually part-time, position with a company or organization related to a student's field of study. These can last from two or three months to an entire semester or even a full academic year. Interns usually function as employees of the organization, with designated duties and some level of responsibility. They may or may not receive pay or a stipend. Internships may lead to permanent employment, since employers are able to observe the student's work ethic and job-related skills first-hand.
- Externships are shorter in duration than internships, lasting anywhere from a day to a week, or occurring during scheduled breaks. Externships are typically unpaid and often consist of workplace observations or job-shadowing rather than authentic work experience. Nevertheless, externships can still help students begin building a network of professional relationships and may lead to later internships with the same organization. Faculty might choose to incorporate practical work experience into their students' course of study by requiring students to shadow a disciplinary professional over Spring Break, or organizing similar short-term opportunities with a partner organization near campus, rotating students throughout the semester.
- Co-operative education (co-op) is a specialized type of internship that provides career training, sometimes with pay, as students work alongside professionals in their major field of study. Depending on the field, a co-op placement may necessitate that the student take a semester or more away from their studies, especially if it is a full-time paid position. Co-op students have more opportunity to become an integral part of an organization, to work on important projects, and to receive an authentic work experience. Co-op is most common in technology and engineering but it also exists in other fields such as business and the liberal arts.[87]
- Volunteer work related to a student's field of study can also provide practical experience. Most organizations on or off campus are eager for volunteers. A student majoring in marketing could help design publicity for an upcoming campus event, or a physics major could volunteer to tutor high school students.

Planning for internships and other practical work-based experiences is similar to planning for service learning or community-based learning.

1. Identify and establish a relationship with businesses, government agencies, educational institutions, or other organizations, discussing the potential of work opportunities for your students.
2. Write student learning outcomes contingent upon involvement in the planned experience.
3. Address any ethical issues that may pertain to the experience, ensuring the just and benevolent treatment of all persons involved. You may need to work with your institution's IRB to be certain that requirements have been satisfied.
4. Identify issues related to scheduling, transportation, liability, required training or orientation, and employer expectations of student participants (dress code, professionalism, restrictions, etc.)

5. Express any expectations and assumptions so that all parties reach a common understanding. Participants should also verbalize any concerns so that these can be addressed before they become problematic.
6. Compile all necessary information, documentation, and written materials, providing them to all participants. This may encompass:
    a. Information about required training, the work to be performed, what will occur after the completion of the experience
    b. Broad issues related to the experience such as a profile of the partnering organization, description of students' activities or work expectations, or limitations of the experience
    c. How the work experience will incorporate problem solving, critical thinking, decision-making, analysis, application, theorization, and reflection
    d. Plan for how student learning will be assessed and how grades for students' involvement in the project will be determined
7. Communicate regularly with the partnering organization, visiting the workplace, monitoring students' progress, and ensuring that students are functioning appropriately within the project setting.
8. Incorporate separate opportunities for debriefing and reflection for students and for participants in the partnering organization, allowing each person to think critically about their experience, relate it to larger contexts and issues, identify challenges and successes, and prepare for future engagement if possible.

Despite the labor-intensive nature of planning for experiential learning, it is among the most interesting, most rewarding, and most beneficial actions we can take as educators. A well-planned and successfully executed service-learning, community-engaged, or workplace-based experience can be transformative as students see the theory of the classroom made tangible through their work with the partner organization.

Recap

- Experiential education rests on the theory that we learn best by doing, not merely listening, reading, and writing. Although all education is an "experience" – to a certain way of thinking - experiential education is distinct in that it occurs in authentic settings outside of the classroom.
- Taking part in activities such as service-learning, community-based learning, or workplace-based opportunities such as internships allows students to make connections between the abstract learning of the classroom and practical application of their skills and knowledge.
- Experiential education requires thorough planning and oversight by faculty and administrators, who manage the logistical details, communicate with site-based partners, and facilitate students' learning through the experience.

Design Connection		
WHY? Empathize	HOW? Define and Ideate	WHAT? Prototype and Test
Experiential learning can transform students' entire educational journey, allowing them to perceive the value and meaning of their prior coursework as they apply it in authentic settings. It can literally bring their learning to life, making abstract concepts concrete and transforming theoretical knowledge through practical application.	The strategies we've examined will be helpful in establishing opportunities for experiential learning. Most importantly, faculty must be trained in how to facilitate non-classroom activities and how to establish and maintain productive relationships with external partners.	As with other initiatives, thoughtful pilot programs help to clarify strengths and weaknesses and to identify opportunities for improvement. When well-designed and thoughtfully implemented, experiential education can be an extraordinarily transformative force in students' personal, academic, and career success. Assessment of our efforts should include surveys of faculty and students, but perhaps even most importantly, alumni outcome data, correlating their participation in experiential learning with their subsequent career choices.

Capstone Courses and Projects

Just as HIPs begin with support of First-Year Experiences, they extend through the culmination of students' educational journeys in capstone courses or projects. In general, academic departments incorporate capstone courses or projects into the requirements for a major. This requirement is far from new. For centuries, doctoral students have written dissertations as evidence of their ability to produce new knowledge in a given field of study, and students earning master's degrees have written a thesis or completed a research project. Students of the arts present an exhibition or performance demonstrating their proficiency. For example, a student earning a Bachelor of Fine Arts must showcase their artworks in a final exhibition. A student majoring in violin performance would present a senior recital.

Brown University provides this description of capstone requirements.[88]

> The overarching goal of the capstone is to provide students with a culminating learning experience through which they demonstrate proficiency and facility with key learning objectives articulated at the level of the concentration as well as the broader general educational goals of their institution. As culminating learning experiences, capstones are integrative, reflective, and transitional.[89] They are integrative in that they require students to synthesize across discipline-specific content and research methods, apply knowledge to novel problems and contexts, and often experiment with different forms of scholarly and public presentation. They are reflective in that they prompt students to think about and account for the developmental trajectory of their learning within the concentration and discipline. They are transitional in that they frame, with varying degrees of explicitness, opportunities and pathways in post-college life: graduate school, professional career, public service, etc.

The National Survey of Senior Capstone Experiences[90] identifies several options.

- Capstone course
  - Department or discipline-based course
  - General education-focused course / campus-wide capstone requirement
  - Other capstones
- Exam
  - Comprehensive exam
  - Exam leading to certification or professional licensure
- Arts performance or exhibition in performing, musical, or visual arts
- Project
  - Senior integrative portfolio
  - Senior integrative or applied learning project
  - Senior thesis or research paper
- Experiential learning
  - Service-learning or community-based learning project
  - Internship
  - Student teaching
  - Other supervised practice

These examples are not mutually exclusive. Combination or hybrid options also exist. Their common thread, however, exists in their inclusion of high impact practices such as reflection and integration of learning through research, community-based learning, collaborative assignments, internships, and so

on. Capstones involving more intensive faculty supervision and feedback correlated with the greatest gains for students.[91] Furthermore, the learning outcomes supported by capstone experiences demonstrate a high degree of correlation with skills and competencies valued by prospective employers. A survey by AAC&U found that employers place the greatest priority on five knowledge areas and skill sets (out of 17 types):

- oral and written communications (85% and 82%)
- teamwork skills (83%)
- ethical decision-making (82%)
- critical thinking and analytical reasoning (81%)
- applying knowledge and skills in real-world settings (80%).[92]

Capstones provide an opportunity to demonstrate that individual students have achieved program learning outcomes and developed proficiency in their major. They have an additional benefit in providing useful data for assessment of program quality, based on the logical assumption that an outstanding program produces students who demonstrate excellence.

Some academic fields have required capstone experiences for a very long time, even if these bear other names like "senior recital" or "student teaching." For those who wish to update, revise, or establish new capstone requirements, a few suggestions may help shape the process.

- Begin by asking clarifying questions: why do we want a capstone? How will we implement this within our department? What will best meet our students' needs and serve our department or program's goals?
- Establish learning outcomes and assessment mechanisms; determine how the capstone will factor into degree plans and requirements.
- Ensure that students understand expectations surrounding capstone requirements, providing written instructions including assessment criteria.
- Provide faculty support and guidance throughout the capstone, facilitating the integrative, reflective, and transitional aspects of the experience.
- Determine how to apply the capstone to program assessment and create rubrics or other assessment tools to facilitate this process.

No matter how we choose to implement capstone requirements, we should approach the process by keeping the heart of HIPs in mind: enhancing student learning and success through intentional and integrative approaches that lead students to understand what they have learned, how it can apply beyond the classroom, and how it relates to their lives after graduation.

Recap

- Capstone courses or experiences provide opportunities for students to contemplate the cumulative body of skills, competencies, and knowledge they've acquired during their journey towards their degree. They also meet the Key Element of "public demonstration of learning."
- Capstone courses or experiences vary by discipline, ranging from standardized exams to public exhibitions or performances to professional presentations and more.
- They also support students' acquisition of crucial skills and competencies valued in the 21st-century workplace.

Design Connection		
WHY? Empathize	HOW? Define and Ideate	WHAT? Prototype and Test
Each of us has a deep desire to know that our work has meaning and value. Capstone courses and experiences provide a means for students to seek feedback from an authentic audience and validation of their efforts over the duration of their studies. They also help bridge the difficult transition from the environment of higher education to the professional workplace.	Each academic field will have differing expectations for student achievement and professional preparation. Unlike HIPs such as first-year experiences, Capstones should involve teams of faculty within a given discipline to determine best practices suited for the ontologies, epistemologies, and methodologies of their field.	Assessment details will vary, but a universal mechanism for evaluating students' cumulative learning and employing that data to program assessment and continuous improvement will help to ensure that our students and our programs each become as successful as it is within our ability to support.

HIPs: Summary and Resources

The following table presents a comparison of the eleven HIPs with the Eight Key Elements based on the information and ideas presented in this text. An X indicates that the element is usually associated with the HIP at left.

	Performance expectations	Student time investment	Interaction with faculty and peers	Experiences with diversity	Constructive feedback	Opportunities for reflection and integration of learning	Real-world application	Public demonstration of competence
First-year experiences	X	X	X	X	X	X	X	
Common intellectual experiences	X	X	X	X	X	X	X	
Learning communities	X	X	X	X	X	X	X	
Writing-Intensive courses	X	X	X		X	X	X	
Collaborative projects	X	X	X	X	X	X	X	
Undergraduate research	X	X	X		X	X	X	X
Diversity and global learning			X	X		X	X	
ePortfolios	X	X	X		X	X	X	X
Service- and community-based learning	X	X	X	X		X	X	
Internships	X	X	X			X	X	
Capstone courses and projects	X	X	X		X	X	X	X

Notably, interaction with faculty and peers, opportunities for reflection and integration of learning, and real-world application span all eleven HIPs. This is because true impact arises when we embed learning in high-quality human interactions, we deliberately engage in metacognitive processing of what we've learned, and we apply our learning beyond the walls of the classroom in authentic contexts.

As we plan to design and implement HIPs, it may be helpful to consider a list of the open-ended questions regarding qualities or practices that could be included in our work.

1. For which target student population is the ____ intended? (educational level, needs, interests)
2. What scale would be most appropriate to the target student population? (assignment, course, program, department, entire undergraduate curriculum)
3. What components should be included? (single shared experience or event or multiple components such as paired courses, more than two courses, courses plus co-curricular events and activities, etc.)
4. To what extent will the _____ utilize interdisciplinary connections and what form will they take? (within a single discipline, transdisciplinary, cross-college)
5. What mechanisms of integration will the _____ employ and how will students synthesize their learning? (pedagogical methods, themes across courses, events, co-curricular activities)
6. What will be expected of faculty? (participation in faculty development activities, co-teaching, leading outside activities)
7. What will be expected of students? (assignments, participation beyond routine class attendance)

8. How will the _____ ensure equity of access and integrate experiences with diversity? (scheduling, support for additional expenses, off-campus activities)
9. To what extent will the _____ use experiential learning, build connections to _____ , and/or apply students' learning to real-world issues and needs?
10. How will the _____ include, reinforce, or apply co-curricular experiences?

Finally, we should understand how each of our efforts to build HIPs into our programs compare to the three lenses of innovation:

- **Is it desirable?**
  - Who wants to make this happen?
  - Who will participate?
  - Who stands to gain the most from it?
  - What result are we seeking?
- **Is it feasible?**
  - How will we make this happen?
  - Do we have everything we need to make this happen? If not, what do we need and where can we get it?
- **Is it viable?**
  - Can we sustain this new effort over time?
  - Is there sufficient interest to make it work?
  - What challenges or opposition do we expect and how will we respond?

If we can answer "yes" to each of these bold questions, we are poised to achieve success for our students, our programs, and our institutions.

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[24] ibid
[25] https://www.wm.edu/research/news/social-sciences/smart-yes-creative-not-so-much.php
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Part 4: What? The Future of Higher Education

In Part 1, we identified why high impact practices are worthwhile – they have proven benefits to students' learning. Our overview in Parts 2 and 3 provided a more detailed description of high impact practices and suggestions for how we might incorporate these into our institutions, programs, curricula, and classrooms by applying the principles and practices of design thinking, UX design, and the three lenses of innovation. If we've thoroughly explored and contemplated these issues, then our work here in Part 4 will be quite brief as we examine the final question of what. What do high impact practices mean for the future of higher education?

Higher education tends to be quite averse to change. We all have colleagues who deeply want to maintain the histories and traditions that define their identities, seeing little reason to upset the comfortable norms they've enjoyed for decades. Nevertheless, we cannot continue ignoring the evidence the surrounds us. Our students need more from us today than in the past. The world they face after graduation is not at all the same as when their grandparents went to college or when we were students ourselves – back when we could believe our incoming students were "college -ready" and earning a degree in any field was sufficient to prepare new graduates for careers they pursued until retirement. We could rest assured that all we had to do was teach our subjects, trusting that our students could figure out for themselves how to apply their classroom learning to the real world. We shared tacit identities with our students, who – like us – were mainly middle-to upper-class, white, and grew up with parents who had also earned college degrees.

Demographics vary from one institution to the next, of course, yet today a large percentage of our students no longer look like us or share our backgrounds. They are the first in their families to attend college, did not receive the same quality of K-12 education that we did, exhibit extremely diverse identities, are older than traditional undergraduates, pursue their studies part-time as they hold down full-time jobs, and more. High impact practices benefit all students, but those who reap the greatest reward from participation in HIPs are whose who formerly fell through the cracks of our imperfect systems. They give all students a better chance at the kind of success formerly achieved by traditionally college-ready students.

In the spirit of critical thinking, each of us would do well to pause and consider why we're reading this document before we embark upon the task of designing and implementing HIPs at our institutions. Hopefully, it's because we care about our students, which motivates us to support their academic achievement through the proven strategies of high impact practices. It's true that high impact practices support institutional goals like improving our rates of student persistence, time-to-degree, and graduation, among others. But the heart of HIPs exists in our willingness to treat our students as though they matter to us, to build relationships with them through our first-year programs, learning communities, undergraduate research, and more. As we do this, we undergo a transformation of our own, becoming high impact educators who no longer simply teach our *subjects* but teach our *students* by going beyond standard pedagogies to incorporating the Eight Key Elements of HIPs.

In so doing, we also achieve the fundamental elements of the Big Six: we generate excitement about learning, care about our students as people, mentor them and encourage them to pursue their goals and dreams. We work alongside them on long-term projects, provide opportunities for them to engage in experiential learning such as internships, and support their active participation in co-curricular activities. Few of these actions align with standard faculty job descriptions, but all of them demonstrate our character as caring and dedicated educators.

Innovation isn't easy. In fact, it's particularly difficult in higher education, where a sizeable population of our colleagues can be counted upon to oppose any effort they perceive as threatening the status quo. Visionaries need thick skins and steadfast hearts, fueled by our unwavering compassion for our students and our belief that, in serving their needs, we assure the continuation of our disciplines.

The future of higher education will resemble neither the past nor the present. Our students will keep changing, bringing identities very different from our own onto our campuses. Our society will also evolve as we attempt to keep pace with the relentless acceleration of technology, which will alter what we teach and how we teach it. Nevertheless, the foundation of all education is reducible to a single timeless factor: educators who care about their students as people and are dedicated to supporting their achievement. High Impact Practices are valuable tools proven to help achieve this goal. Will employing them mean we must change what we do as educators? Yes. Will it be worthwhile? Absolutely. That is, if we find reward in helping students achieve their goals and dreams. For many of us, that's all the incentive we need.

I'd like to express my thanks to the reader for taking this journey with me. I am confident that together we have the ability to change the face of higher education and move forward into a future that cherishes our histories, legacies, and traditions but is not held back by them – a future where we have both the desire and ability to ensure that higher education fulfils its promises to our students.

With every good wish,

Bruce M. Mackh