Five to Finish: Pathways Initiative

Concrete Action to Increase Student Retention and Completion through High-Impact Practices, Linked Learning, and Career Pathways

Prepared for Wright State University
Office of Academic Affairs

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Introduction: Five to Finish Pathways Initiative

Institutions of higher learning face a seemingly intractable problem with student retention. Despite years of strategic planning and implementation, the National Student Clearinghouse finds that 24.3% of incoming students leave higher education by the end of their first year,[1] and 37.7% of students who begin a degree program never graduate.[2] Moreover, these rates have been stalled since 2016, showing no signs of improvement.

Retention and completion rates for specific institutions vary, of course. Wright State University's 6-year completion rate is just 43.93%, or 18.37 percentage points below the national average of 62.3%. Similarly, Wright State University's retention rate is 65% compared to the national average of 75.7%. The cost to students in lost opportunities is considerable, as is the reality that they must repay student loans without the benefits of having earned a degree, leaving them in a worse position than if they'd never begun. Furthermore, each student who leaves without finishing their degree program represents a cost to the university of approximately $12,500 for each year they do not complete. Low persistence and graduation rates, especially in comparison to other Ohio public universities, also problematize student recruitment, which is all the more troubling given the pattern of declining enrollment in recent years. Why would prospective students choose Wright State University if more than half of its students do not complete their educations successfully?

This evidence could not be more compelling; our university faces a significant challenge that we must meet by doing everything in our power to increase student success.

Therefore, we are launching the Five to Finish Pathways Initiative, which asks each of Wright State University's colleges to choose five High-Impact Practices (HIPs) that could help increase persistence and completion rates and incorporate these practices into their programs, courses, and teaching. The HIPs selected should support the colleges' creation of career pathways and incorporate strategies for linked learning.

This document was created to provide clarification and instruction in HIPs, linked learning, career pathways, and experiential education. It represents a culmination of previously published content from *Higher Education by Design: Best Practices in Curricular Planning and Instruction* (Mackh, 2018) and *Pivoting Your Instruction: A Guide to Instructional Design for Faculty* (Mackh, 2021), and the forthcoming book A Reason to Stay: Teaching for Retention, coupled with additional information.

When our students are successful, our university is successful. Although implementing new instructional strategies to help more of our students persist in their degree programs and reach commencement successfully will not be quick or easy, we are confident in our ability to reach this goal through the dedication and professionalism of our faculty, staff, and administration.

We can do hard things and will confidently meet this challenge. To paraphrase Margaret Mead,[3] we should never doubt that a small group of thoughtful, committed educators and administrators can change the world.

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[1] National Student Clearinghouse https://nscresearchcenter.org/persistence-retention/

[2] National Student Clearinghouse. https://nscresearchcenter.org/completing-college/?hilite=college+graduation+rate

[3] Mead, Margaret, in *Earth at Omega: Passage to Planetization* by Donald Keys, (Epigraph of Chapter VI: The Politics of Consciousness), Quote Page 79, Published by Branden Press, Boston, Massachusetts

Part One:
Centering Student Success

Central Questions:

How have students changed, and what does this mean for faculty today?

What does it mean to be student centered?

Why should we meet students where they are?

Centering Student Success

Higher education's tenacity in maintaining its legacies despite shifting cultural norms outside its gated grounds can be an admirable quality. Traditions abound, such as the University of Chicago's annual scavenger hunt, Purdue University's go-cart Grand Prix, Iowa State's VEISHEA festival, Michigan Technological University's Winter Carnival, and countless campus-wide Halloween or St. Patrick's Day parties are the stuff of legend at many institutions (not to mention my personal favorite, Crawfest at Tulane University).[1] These traditions give character to our institutions, build a feeling of community, and even attract prospective students. Nevertheless, over-dependence on tradition can become a liability when these practices prevent us from achieving our purpose.

Every institution of higher learning exists to educate students, but the world around us has changed markedly in the past 50 years, no more so than in the identities of our students. In the 1970s, most students were 18 to 22 years old, came from relatively affluent families, and had achieved a strong academic record during high school, demonstrating that they were prepared to undertake the rigors of a college education. The were, as the saying goes, "college material." Furthermore, just 10% of the US population in 1970 had earned a college degree, rising to 16% by 1980.[2] Steadily increasing population rates meant that institutions could depend on a virtually unlimited supply of prospective students, especially as an ever-greater share of new high school graduates chose to seek a degree each year, so institutions could be selective about whom they admitted and were unconcerned with student retention. Indeed, student attrition was taken as a sign of admirable rigor since only "the best" students made it through to graduation successfully.

Changes wrought over the past half-century have altered these norms dramatically. Today's institutions experience increasing scrutiny for their poor retention and graduation rates amid questions about the rising cost of a degree and students' return on investment. Now, the average student is over age 22, does not enter higher education with a stellar high school record, and is more likely to be from a low- to

[1] https://campusgrotto.com/the-100-greatest-college-traditions.html
[2] https://www.statista.com/statistics/184260/educational-attainment-in-the-us/

lower-income family than previous generations.[3] Instructional norms suited to the homogenous, young, academically strong students of the 1970s do not fit the diverse students who enter our institutions today.

Faculty attitudes toward students naturally reflected the norms and conditions of the past century, either because this was when we earned our degrees or because we were taught by individuals who earned their degrees during this time. Therefore, we absorbed the belief that teaching means delivering the same instruction to all students and placing responsibility on students to learn what was taught. We accepted the core assumption that strong students continued with their studies. Weak students washed out because they didn't have what it took to succeed. This simplistic view dominated higher education for decades if not centuries. With an unlimited supply of prospective students, what did it matter if some of them dropped out? The ones who couldn't make it through didn't belong in college anyway, or so it was believed.

Faculty are aware that students have changed. We know that many (if not most) of our students do not possess the background knowledge or academic competencies we've always expected of the kind of students we'd considered to be "college-ready." Indeed, it's clear they are ***not*** ready, especially in comparison to traditional expectations.

However, for both practical and ethical reasons, these attitudes cannot continue. At the most basic level, we must remember that our institutional budgets are built on tuition dollars. And, because enrollment is declining due to a shrinking population of available students,[4] every admitted and enrolled student is extremely important to the institution's stability and sustainability. We simply cannot afford to lose them.

Next, we now know that the Darwin-esque "survival of the fittest" model masks prejudicial attitudes favoring students from privileged backgrounds[5] whose parents earned college degrees and who graduated from high schools that equipped them with an excellent education. It also favors students who meet traditional expectations: 18-22 years old, single, childless, and still supported by their parents – in other words, students who fit the traditional model. These descriptors do not apply to most of the students we now serve. They have grown beyond the one-size-fits-all model of higher education and come to us with multiple identities our previous model was never designed to accommodate. Higher education should focus on what students will learn and who they will become by the time they graduate, not what they already know or who they are when they enroll. Our job as educators is to meet them where they are and lead them forward by providing the best possible education it is within our power to deliver.

Furthermore, the traditional view that students either do or do not possess the skills and knowledge required for academic success is rooted in false (yet sadly persistent) assumptions about learning and

[3] Mackh. (2021). Pivoting Your Instruction.
[4] Grawe, N.
[5] Rudman, L. A., & Saud, L. H. (2020). Justifying social inequalities: The role of social Darwinism. *Personality and Social Psychology Bulletin*, *46*(7), 1139-1155.

human potential. Nobody is born a good reader or writer. Mathematical fluency is not foreordained. Students might not enter our institutions with the same foundational skillset we would prefer, but whatever gaps might exist between their skills and our expectations can be bridged in at least two ways. One is to bring students up to the expected level with supplementary instruction or additional resources. Two is to adjust expectations to match the students' level. We rarely consider that our expectations, not the students' entry-level skills, might be the real problem. Holding high standards may be admirable, but those standards cannot be so high as to become unobtainable by our current students, nor should they be used to justify preventing students from pursuing an education. Realistically reassessing the validity of expectations designed to suit a population we no longer serve does not represent "lowering" standards appropriate to the last century but creating new standards suitable for the population we now serve.

Perhaps most importantly, maintaining traditional attitudes toward student success is morally questionable. Admitted students enter into a social contract with the institution in which they pay tuition in exchange for an education that prepares them for fulfilling lives and productive careers. Certainly, students must uphold their end of the bargain by attending class, completing assignments, and passing exams. However, faculty have no authority to negate this social contract by passively allowing students to fail or actively seeking to "weed out" underperforming students. Everyone on the university's payroll has a moral duty to help the university uphold its end of the bargain by supporting students' success, including retention. Standing idly by when students fail or withdraw is as objectionable as watching someone drown without bothering to throw them a life ring. Worse, actively seeking to "weed out" students as the result of judging them to be unworthy of participation in higher education usurps the university's authority in admitting them, actively damages the university by depriving it of necessary revenue, and, worst of all, inflicts considerable harm upon the students themselves. Therefore, the practices and attitudes that shaped many faculty members' experiences during the last decades of the 20th century are as unacceptable and inappropriate in the 2020s as other archaic attitudes, such as barring women from leadership positions or excluding students of color.

Perhaps it would help to clarify these changes by organizing them into a "Then and Now" Table.

Then	Now
Institutions could count on a virtually unlimited supply of incoming students and expected continually increasing enrollment.	Enrollment is declining, especially among students fitting the traditional profile (18-22, affluent, academically prepared)
Higher education was built on a standardized, one-size-fits-all model.	Higher education is moving to a one-size-fits-one model that serves individual students' needs.

Institutions took pride in being exclusive, admitting only individuals who were a "good fit" for the institution.	Institutions seek to be inclusive, welcoming all prospective learners.
Students were 18-22 years old, relatively affluent, and had received a high-quality high school education.	Students are over 22, relatively impoverished, and have received a lower-quality high school education.
Students were expected to be prepared for the rigors of a college education ("college-ready") or to possess intrinsic strengths suitable for college study (to be "college material").	Institutions must be ready to serve every student – to meet their needs where they are and help them rise with the challenges of higher education to complete their degrees successfully.
Faculty delivered instruction. Learning was solely the students' responsibility.	Faculty facilitate student learning and support student success.
Faculty ignored underperforming students and could weed out students they felt were unsuitable for higher education.	Faculty help underperforming students so that they remain enrolled at the institution and complete their degree programs.

We might understand these ideas better by considering the concept of "fit." Decades ago, institutions could recruit and admit only those students determined to be a "good fit" for the institution. As an illustration, the idea of "fit" also applies to our everyday experiences with clothing. When shopping for new pants, for example, do we change our bodies to fit the garment we want to purchase? No, we expect the retailer to offer different sizes of pants so we can find a pair that fits. Higher education offered one "garment" for decades. If it didn't fit a student, we discarded the student. We didn't consider altering the garment to fit. Like other pejorative attitudes that flourished in past generations, the concept of "fit" was equally wrong. The Disney+ streaming service provides a role model in this regard by placing an un-skippable disclaimer in front of older films containing racist imagery, stating in part, "These stereotypes were wrong then and are wrong now. Rather than remove this content, we want to acknowledge its harmful impact, learn from it, and spark conversation to create a more inclusive future together."[6] Higher education faces a similar proposition. We, too, must learn from our past and create a more inclusive future for all students that focuses on fostering their success, not discarding some of them as weeds in the beautiful garden of our institutions.

[6] https://www.nytimes.com/2020/10/18/business/media/disney-plus-disclaimers.html

These paradigm shifts are reflected in the following core principles inspired by some of the "Big Ideas" Valencia College employed to re-shape its approach to educating students. These ideas can also serve us well as we redesign our programs for the Five to Finish initiative.

1. **Anyone can learn anything under the right conditions.**

   The persistent belief that some people are inherently incapable of learning certain things is reflected in statements like "I'm just not a math person," "I'm not very creative," or "I don't have an ear for music." The belief that ability is intrinsic rather than learned provides cover for longstanding practices of rationing higher education by excluding students not believed to have "the right stuff" to learn in a particular field and employing ineffective instructional methods that fail to meet students' needs as learners. "Deficit thinking" that blames students for gaps in their skills or knowledge also perpetuates bias and negative stereotypes, casting entire population groups as lacking in fundamental ability to learn or perform certain tasks.[7] Although commonplace and pervasive, these attitudes have no scientific basis. There is no genetic propensity precluding a students' development of athletic, artistic, linguistic, mathematical, or musical proficiency. If a student has not yet acquired certain skills or knowledge, it does not mean they cannot do so. Deficits do not exist in students themselves but in the instructional practices and systemic inequities that grant advantages to individuals from certain demographic groups while placing others at a pronounced disadvantage. Our task as educators is to partner with students, assess their learning needs, and deliver instruction that supports their learning of our course content. Doing so means abandoning the one-size-fits-all model of instruction, considering, instead, how we treat each student as an individual worthy of our respect and equally deserving of an education.

2. **Every student's college experience, every semester, and every course should "Start Right."** First impressions matter. Students' first impressions of a course and the professor teaching it shape the entire semester,[8] as do their initial experiences within the institution. Successful completion of the first five courses on the first attempt is a strong predictor of students' subsequent academic success and likelihood of graduation.[9] Nevertheless, traditional approaches to scheduling often overload students with the most difficult "gateway" courses and general education requirements in their first semester, many of which have long histories of intentionally weeding-out students based on pejorative beliefs that entry-level skills accurately reflect academic capability. Starting right means curating students' early experiences to foster success, instill academic competencies, and impart foundational knowledge supporting subsequent learning. Starting right also means ensuring that "the first minute of the first

[7] Ash, A. N., Hill, R., Risdon, S., & Jun, A. (2020). Anti-racism in higher education: A model for change. *Race and Pedagogy Journal: Teaching and Learning for Justice*, *4*(3), 2.
[8] Lane, A. K., Meaders, C. L., Shuman, J. K., Stetzer, M. R., Vinson, E. L., Couch, B. A., ... & Stains, M. (2021). Making a first impression: Exploring what instructors do and say on the first day of introductory stem courses. *CBE—Life Sciences Education*, 20(1), ar7.
[9] Valencia

meeting, of the first class [is] a learning minute."[10] Syllabus day has become a tradition for the first day of class each semester, but it does not utilize valuable class time to make a positive first impression or to stimulate students' excitement for learning in the course. Starting right offers a priceless opportunity to build rapport with students, letting them see that their professor is personable, approachable, and genuinely cares about their learning in the course. Administering a First Day Survey is a good way to gather information about students and preview the areas where they may need supplementary instruction or support.

3. **Students need to make meaningful connections with people they trust and identify a clear direction for their studies at the beginning of their college experience**.
   Most students enter higher education for the purpose of preparing themselves for fulfilling careers that will allow them to lead a better life than they could without a degree. However, few arrive knowing how to navigate their college experience to achieve this goal, especially those whose parents did not earn a degree. Developing a connection with someone on campus who "has their back" and can be trusted to provide wise guidance is crucial to success, whether a staff member, advisor, or faculty member. Students also lack sufficient knowledge of higher education to chart a course toward graduation all by themselves, and without a clear direction, they can quickly get off-track. HIPs like First-Year Seminars, Learning Communities, or Common Intellectual Experiences can be quite beneficial, as can strategies such as Meta-Majors and mentoring. Students might change their minds about their destination several times during their undergraduate experience, but formulating a plan that requires later revision is preferable to having no plan at all. Furthermore, the student's trajectory does not end at commencement. If we understand that our job is to prepare them for career success, the directions we provide should be more than degree plans but Pathways, which also include other steps students can take to ensure they reach their goals, such as earning a minor, certificate, or micro-credentials, participating in relevant co-curricular activities, and experiential learning options like internships, externships, co-op, study abroad, volunteering, or community service. Helping students identify and begin pursuing these career pathways early in their undergraduate experience mitigates the possibility of losing their way or missing out on key opportunities. It also allows students to perceive the relevance of the various components of their educational experience, knowing that each of them is a step in the right direction.

4. **College is how the students experience us, not how we experience them**.
   Students are temporary members of the institutional community. We faculty and staff remain for many years, but students come and go. Given this ephemeral status, it's easy to dismiss their importance, especially as any reforms we undertake in higher education require such a long time to achieve that the students who inspired our efforts have left before any reform takes root. Echoing the point about connection, Valencia College offers an excellent rationale. When a researcher asked successful students what had made a difference for them in their college experience,

[10] valenciacollege.edu/big-ideas-trustees.pdf

> *… each gave essentially the same answer- a person's name. No one named the college's great technology, the programs of instruction, the learning resources, or the tutoring programs, where in fact they had met the persons they named. They all named people who had taken a strong interest in their learning and supported them in some way. We learned from seeing the college as the students experience it that our programs are merely vessels, the persons who work in them are the wine. This principle seems true for all students, but especially true for students of color, of alternate language, and of other conditions that may make the college seem a foreign and unwelcoming place.*[11]

Those of us who work in higher education tend to organize our efforts around what's best for the institution, department, college, program, or even what's best for ourselves. However, we must remember that every one of these entities is here for just one purpose: to educate students. Their experiences are the paramount consideration in every decision we make because students are the heart of what we do.

These principles uphold the value of becoming a student-centered institution and living by this philosophy as educators. More than just a catchy slogan or catchphrase, being student-centered means understanding and embracing the "Now" column in the "Then and Now" table and utilizing that knowledge to provide an excellent education to every student. The following excerpt from Chapter 2 of *Pivoting Your instruction*, "Student-Centered by Design," may help to explain this philosophy.

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Student-Centered Curricula and Pedagogies

McNair, Albertine, Cooper, McDonald, and Major (*Becoming a Student-Ready College*, 2016, p. 89)[4] suggest that a student-centered institution should "prepare students for the kinds of challenges they will confront in work, in life, and as citizens, both US and global, and to help them integrate and apply their knowledge and skills to complex and unscripted problems." I'll call this Priority One. We can measure students' academic achievement by assessing learning outcomes that reflect this central purpose. However, neither the institution nor its students will be successful if Priority One is nothing but attractive verbiage in a mission statement – it has to become the lived reality of every member of the institution, beginning with faculty.

Indeed, it's impossible to underestimate the importance of faculty in students' learning experience. Let's consider this comparison. The only thing that connects a vehicle to the road is a small area of each tire called the "contact patch." A parked car has a contact patch that's roughly a six-inch by six-inch square.[5] However, when the vehicle is in motion, multiple forces act on the tire that cause the contact patch to become even smaller. The car's performance depends on the contact patch, which is affected

[11] Valencia

by the amount of force the vehicle's engine generates, the resiliency of the material the tire is made of, the tire's inflation, tread depth, the weight of the vehicle, the weather and road conditions, the driver's handling of the vehicle, and more. When we step into a vehicle weighing between 3000 and 5000 pounds and propel it down the highway at speeds of 55-75 miles per hour, we're trusting our very lives to that tiny contact patch where the tires meet the pavement.

Just so, faculty are the "contact patch" between students and their educational experience. The most renowned university probably won't keep its reputation long if its faculty are not comparably excellent. A beautiful campus and championship athletics program may increase the institution's public recognition, but its true worth depends far more on the tone and quality of daily interactions occurring between faculty and students.

The Big Six

The importance of faculty is borne out by the 2014 Gallup-Purdue Index,[6] which concluded 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. Researchers 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."[7] 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. Gallup-Purdue dubbed these factors the "Big Six."

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

Each of these factors is well within faculty members' capacity to provide. Furthermore, all are aspects of a student-centered approach to higher education. The first three speak to students' relationships with faculty, and the last three reflect their participation in educational opportunities faculty can facilitate or encourage. Let's look at each of these more closely.

First, we should never underestimate the impact that **instructors' attitudes and demeanors** have on their students' experience.[8] Our passion for our discipline is contagious – the more excited we are about what we teach, the greater the positive effect 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, or demonstrating enthusiasm for our course content can dramatically affect students' perceptions of the instructor and the course.

Next, no matter how upbeat or enthusiastic we might be with the whole group, our **connections with individual students** can make or break their learning experience.[9] Students need to know that we care about them individually.[10] 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 respond with empathy and kindness. We might be within our rights to insist that a penalty will apply, but compassion has a much more positive effect on the student and their subsequent views of their experience in our classrooms.

Mentoring relationships often develop formally or informally between faculty and students, especially those who major in our department. Students should feel that someone on the faculty understands their hopes and dreams and is willing 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. Mentoring need not involve a formal commitment, however. Even casual, non-classroom interactions between students and faculty produce a markedly positive effect on students' motivation and academic achievement, promoting cognitive gains, raising students' academic self-concept, and increasing their engagement.[11]

Long-term projects (those lasting for a semester or more) allow students to engage deeply with a topic of investigation.[12] Projects are even more impactful when they can mobilize the "Four Cs":

- 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

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 – it requires a deliberate effort to do so. We should not underestimate the importance of these so-called "soft" skills, either. Google conducted a study titled Project Aristotle that examined their most innovative and productive teams. Google's A-teams were comprised of top scientists, most of whom were graduates of elite universities with highly specialized technical knowledge and proven abilities to engage in cutting-edge innovation. Contrary to the company's expectations, the study revealed that the A-teams underperformed compared to its B-teams, whose members exhibited skills such as equality, generosity,

curiosity about teammates' ideas, empathy, emotional intelligence, and most importantly, psychological and emotional safety. They felt empowered to speak freely, knew their ideas would be heard, and felt safe taking risks and making mistakes. As a result, Google changed its hiring practices, seeking employees with backgrounds in humanities, arts, and business as well as STEM – a notable departure from their previous approach to staffing. Reporting on this study for the *Washington Post*, author Valerie Strauss concluded, "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."[13]

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 build the student's professional network, broaden their understanding of career options, and introduce them to workplace norms, all of which are essential to professional success.[14]

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.[15]

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 do they reflect the missions of our institutions? Do they tell us about our graduates' quality of life? Narrowing our considerations to employment and salary leads to the results 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 counterintuitive 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."[16] What matters is whether they received the experiences of the Big Six, which correlate with a student-centered perspective. Faculty have the greatest potential to enact these student-centered strategies. We care about our students, make them feel excited about learning, and serve as formal or informal mentors. We build long-term projects and experiential learning into our courses. We encourage students to deepen their educational experience through participation in internships, extra-curricular, and co-curricular activities. If we had to distill the Big Six into a single statement, it would be this: no single factor is more important to students' futures than working with student-centered faculty who provide these core experiences.

Characteristics of Student-Centered Teaching and Learning

Author Sabine Holden, in *Student-Centered Learning Environments in Higher Education Classrooms* (2017), explains that student-centered learning depends on a constructivist philosophy of education that facilitates knowledge building and construction of meaning, demonstrated by five key characteristics.

1. The instructor communicates subject area knowledge through learning activities that foster higher-order thinking rather than rote memorization.
2. Learning activities accommodate students' differences as learners, allowing for student choice, which increases motivation, engagement, and participation in the learning process.
3. The instructor establishes the classroom environment as a community of learners that supports all members, fosters collaboration, respect for others' perspectives, exploration, and reflection.
4. The instructor provides ongoing formative assessment and constructive feedback on students' work. Criteria for assessments are clear and align with the course's objectives and outcomes.
5. The instructor adapts instruction to meet students' needs, both for the whole group and for individual students. Instructors remain flexible in their approaches to instruction and engage in continuous reflection and improvement of their curricula and pedagogies.

A student-ready educator or institution is prepared to meet all students' needs, not just the ones who fit our implicit assumptions or expectations. Maintaining a student-centered perspective goes hand-in-hand with this goal. McNair et al. rightly state that "without clearly defined action steps, becoming a student-ready college will quickly become one of the many catchphrases in higher education that everyone agrees with but no one really understands."[17] These action steps include:

1. **Making excellence inclusive** by delivering courses designed to accommodate learners' differences. Access to higher education is no less than a social justice issue. It is incumbent upon all educators to take this matter seriously and to address systemic inequities by making their classrooms a welcoming and supportive environment in which all students can learn.
2. **Remaining deeply committed to learning about our students as individuals** and supporting their success through whatever means are within our reach. The impact of a caring adult on students' learning is well-documented, not only by Gallup-Purdue but in the work of Harvey, 2007; Kramer & Gardner, 2007; Lerner & Brand, 2006; McClure, Yonezawa, & Jones, 2010.[18] Not every instructor can be a mentor or counselor for every student. Rather, we have a choice in every interaction to be kind, empathetic, and supportive towards our students. What if we stopped to consider that our students' problems might not arise from deficits in the students themselves, but from problems in our institution, our society, or perhaps even in ourselves. Becoming a student-centered, student-ready educator means that each of us makes a personal decision to take responsibility and ownership for student success – the polar opposite of longstanding faculty-centered attitudes that take responsibility only for "setting the table," leaving students to succeed or fail by themselves.
3. **Engaging in continuous reflection** about our instruction's efficacy, particularly about meeting the needs of our most diverse students or those with the greatest levels of need. We reject deficit-minded perspectives that see problems as residing in the student, recognizing them,

instead, as an outgrowth of implicit biases such as believing that certain groups of students lack the intellectual capacity for advanced study or that people who live in poverty have little to no income because they are lazy or financially illiterate. "Deficit-minded thinking involves blaming the students for being underprepared, rather than blaming the social systems that perpetuate inequities in education."[19]

4. **Measuring students' success** by assessing the level to which they meet course objectives and outcomes. These should align with the institution's mission, which itself reflects Priority One. Even if only the instructor upholds Priority One, we can still make a positive difference to our students' academic achievement and career success by aligning instruction with objectives and outcomes supporting this key goal. Faculty and students should understand that success is not defined as earning a passing grade for the course but *learning* what the course was designed to teach. Assessment criteria should explain how students could demonstrate their achievement of the course objectives and outcomes. A student-centered instructor provides a rationale for those objectives and outcomes and makes explicit connections to students' lives outside the classroom, resulting in a transparent and clearly-defined assessment process.
5. **Incorporating High Impact Practices** (HIPs) into their instruction, including first-year experiences, common intellectual experiences, learning communities, writing-intensive courses, collaborative assignments and projects, undergraduate research, diversity/global learning, service-learning, community-based learning, internships, capstone courses, and projects, all of which can increase students' persistence and raise grade point averages.[20] Although some HIPS appear to be institution-level strategies, we can scale them to our individual classrooms.

The Gallup-Purdue study, Holden's recommendations for creating student-centered learning environments, and the characteristics of being student-ready noted by McNair et al. share many commonalities. All emphasize the importance of caring faculty who are committed to their students' success. They also promote teaching approaches that prioritize students' learning through transparency in assessment, and strategies including internships, long-term projects, and other practices known to support students' success.

* * * *

TILT

In addition to these strategies for student-centered teaching, we should also consider adding TILT (Transparency in Learning and Teaching)[12] to our teaching repertoire. Briefly, TILT supports student learning and achievement by providing all the information they need to be successful in the course.

- The **purpose** of each learning task (assignment, activity) is explicit and tied overtly to the course's objectives and outcomes.

[12] Winkelmes, M. A., Boye, A., & Tapp, S. (Eds.). (2019, 2023). *Transparent design in higher education teaching and leadership: A guide to implementing the transparency framework institution-wide to improve learning and retention*. Taylor & Francis.

- Task **instructions** are detailed and clear so that students understand what they must do, how to do it, and when it must be done.
- **Criteria** for success are clearly spelled out, including explanations of how students' work will be graded, including examples of successful student work.

TILT departs from traditional faculty practices such as presuming students "should just know" what to do when completing assignments, automatically understand how an assignment will be graded or will meet the professor's expectations with minimal instruction. Instead, faculty anticipate students' informational needs by rejecting assumptions about their prior knowledge and experience. Every requirement is spelled out in detail.

Importantly, TILT makes explicit connections between the course's objectives and outcomes and each course activity, especially those leading to a grade. The professor communicates why students are asked to learn something, how the activity will support their achievement of the objectives and outcomes, and what they must do to be successful. Faculty also make room in their instruction to clearly explain each objective and outcome and regularly refer to them when introducing concepts the students will be held accountable for learning.

Beyond instructions and information, faculty using TILT incorporate additional strategies into their teaching practice.[13]

- Explain assignments' learning goals and design rationale before students begin working on the assignment.
- Monitor students' understanding during class, in peer work, and on discussion questions that require students to apply concepts that have been taught, making adjustments to planned instruction where needed.
- Invite students to share suggestions or questions they want to include in future class sessions, especially in areas where students need additional instruction or want to pursue relevant topics of interest.
- Incorporate supplementary instruction in learning strategies or processes related to areas where students typically struggle in the course or discipline.
- Encourage students to assess their own work according to the criteria that will be used to grade the assignments.
- Debrief assignments and assessments after grading and returning them to students, talking about what students did well, and re-teaching content where students demonstrated gaps in their learning.

Meeting Students Where They Are

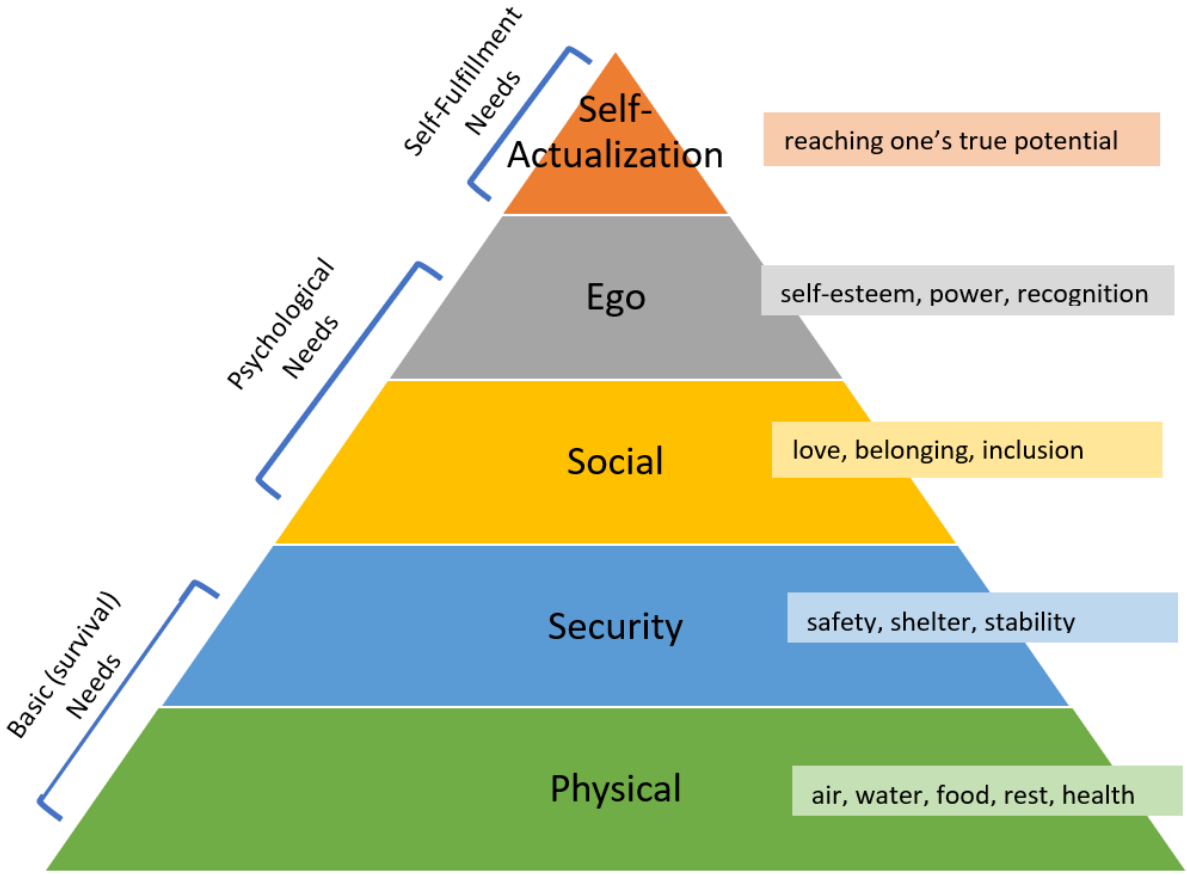
The phrase "meeting students where they are" implies a level of dedication to student success beyond the norms of faculty conduct that were prevalent in the last century. Then, students had to come to us

[13] Winkelmes, 2019, p. 5.

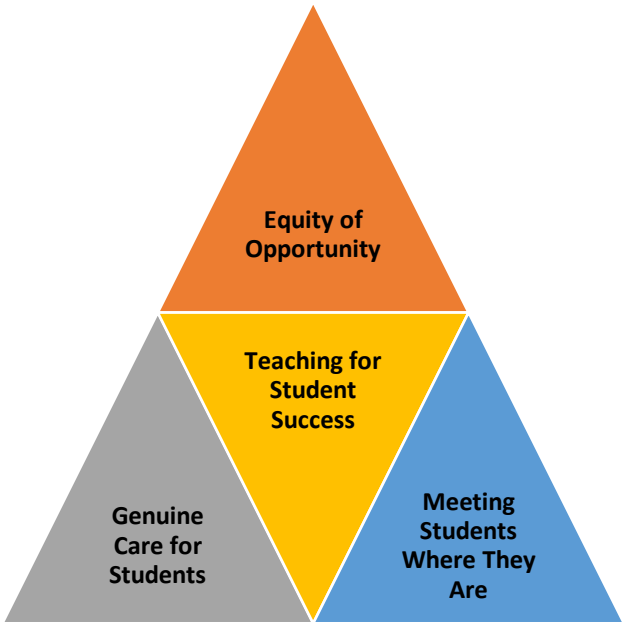
and conform to our expectations. Higher education later evolved to promote "equal opportunity" without understanding that it was another attempt at standardization: everyone receives the same education and, therefore, has the same opportunities. "Same," as we now know, is not "equal" when participants begin from different starting points, receive different equipment, and demonstrate different levels of health or physical fitness. Age, wealth, the quality of one's K-12 education, and cumulative life experiences bring students to us at vastly different starting points. Equity, not equality, demands that we recognize these differences and provide everything necessary to help students achieve their goals and dreams.

Consider Maslow's Hierarchy of Needs[14] for a moment. Maslow proposed that human needs must be met in order of importance for a person to achieve true self-actualization, as seen in the following graphic. Unmet basic survival needs can prevent someone from meeting their social or ego needs. For example, a student who is tired, cold, or hungry will not be able to focus during class. A student with an anxiety disorder might not be able to engage in group activities or interact with fellow students during projects. Later in life, graduates must earn sufficient income to meet their basic needs before they achieve sufficient empowerment to improve their communities, advance in their careers, and reach their true potential. Although certain individuals have been known to leapfrog over the steps in Maslow's model, achieving self-actualization despite daunting deficits, most students cannot achieve the same feat.

[14] Maslow, A., & Lewis, K. J. (1987). Maslow's hierarchy of needs. *Salenger Incorporated*, *14*(17), 987-990.



If we tie these ideas together, we can begin to form a more complete understanding of how they support each other and work together to promote student success.



In the next section, we will examine strategies for implementing High-Impact Practices in our curriculum and programs to support students' academic achievement and increase persistence and graduation rates. These proven strategies are the heart of the Five to Finish initiative. Textboxes of "Key Ideas" offer a short summary of these strategies and maintain the overall emphasis on increasing student success.

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[7] Gallup-Purdue Index. (2014).Great Jobs, Great Lives: The 2014 Gallup-Purdue Index Report. https://www.gallup.com/services/176768/2014-gallup-purdue-index-report.aspx

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[10] Carrell, S., Kurlaender, M. (2020). My Professor Cares: Experimental Evidence on the Role of Faculty Engagement. National Bureau of Economic Research Working Paper No. 27312. doi 10.3386/w27312; see also Miller, A., Mills, B. (2019). 'If they don't care, I don't care': Mllennial and Generation Z students and the impact of faculty caring. Journal of the Scholarship of Teaching and learning, Vol. 19, no. 4, pp. 78-89. Doi: 10.14434/josotlv19i4.24167.

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[16] Gallup-Purdue Index. (2014).Great Jobs, Great Lives: The 2014 Gallup-Purdue Index Report. https://www.gallup.com/services/176768/2014-gallup-purdue-index-report.aspx

[17] McNair, T., Albertine, S., Cooper, M., McDonald, N., Major, T. (2022). Becoming a Student-Ready College. Association of American Colleges and Universities. San Francisco, CA: Jossey-Bass. P. 185.

[18] Harvey, 2007; Kramer & Gardner, 2007; Lerner & Brand, 2006; McClure, Yonezawa, & Jones,

[19] Ibid, p. 83

[20] Ibid, p. 92. See also Kuh, 2008; Kuh & O'Donnell, 2013; Finley & McNair, 2013.

Part Two:
High-Impact Practices

Central Questions:

What are High-Impact Practices?

How can we scale them to the level of our courses and instruction?

High-Impact Practices

Many institutions have implemented High-Impact Practices and their Eight Key Elements to support student success, achieving especially notable results among low-income, first-generation, and non-traditional learners and students from underrepresented minority groups. These solutions tend to be institution-level efforts, but they can also be scaled to colleges, schools, departments, programs, and individual courses, as this section will explain.

This section is excerpted from "Chapter 5: Adapting High-impact Practices across Instructional Models" in *Pivoting Your Instruction: A Guide to Comprehensive Instructional Design for Faculty* (Mackh, 2021, Routledge), originally published as the whitepaper *High-impact Practices by Design* (Mackh, 2020). It also contains supplementary information from *A Reason to Stay: Teaching for Retention in Higher Education* (Mackh, 2023, new manuscript). Slight modifications were made to the original text to facilitate its inclusion in the current document.

High-impact Practices, or HIPs, are proven strategies for supporting students' success. Across higher education, faculty and administrators often encounter conversations about HIPs. The topic crops up in committee meetings when someone (often a dean or provost) says, "We need to start incorporating high-impact practices," causing faculty members to nod in agreement. The trouble is, we don't really know how to do this or even what HIPs would look like if we tried to take them from theory to practice. The purpose of this chapter is to synthesize this admonition into practical advice that any faculty member could use to make their courses better, stronger, and more effective than ever before.

. . . .

A Short Definition

For more than a dozen years, 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, AAC&U). Extensive research supports the efficacy of high-impact practices (HIPs) to increase student engagement and facilitate 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?*** HIPs tend to be large-scale efforts or university-wide initiatives, so our task is to determine how we can adapt high-impact practices for implementation in our classrooms.

High-impact Practices include:

1. First-Year Seminars and Experiences
2. Common Intellectual Experiences
3. Learning Communities
4. Writing-Intensive Courses
5. Collaborative Assignments and Projects
6. Undergraduate Research
7. Diversity/Global Learning
8. ePortfolios
9. Service-learning, Community-Based Learning
10. Internships
11. Capstone Courses and Projects

The Association of American Colleges and Universities (AAC&U) supports a national initiative known by its acronym "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."[21] 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."[22]

HIPs share a set of Eight Key Elements.[23] Not every HIP will demonstrate all eight, but they frequently include four or more. These elements also describe high-quality teaching and learning.[24]

Key Idea

The Eight Key Elements of HIPs describe high-quality teaching and learning even when no other high-impact practices are being implemented, supporting student success across all learning environments.

1. Performance expectations set at appropriately high levels:

Students should clearly understand what we expect them to do, how they should do it, and what "success" looks like for each task we require of them.[25] Our standards should reflect appropriate rigor, neither so high as to be unobtainable nor so low as to be ineffective.[26] Assessment criteria should reflect a clear connection to student learning outcomes and measurable evidence of students' achievement.[27]

2. A significant investment of time and effort by students over an extended period:

Long-term projects allow students to delve more deeply into course content, learn relevant workplace skills such as time management, and more closely replicate professional contexts.[28] The opportunity to participate in long-term projects can notably impact students' academic achievement, which is why they are a high-impact practice.

3. Interactions with faculty and peers about significant matters:

Students need to feel that they are learning matters of substance and significance – that what they're learning really *matters*.[29] Purposeful interactions with others around meaningful real-world issues help students transfer their learning from the classroom to their lives after graduation.[30] Meaningful and relevant interactions around significant concepts support brain-based teaching and learning. All learning occurs by connecting new information to existing knowledge. Without meaning or relevance, new knowledge is much more difficult to learn, much like memorizing a string of random numbers. Faculty who make learning meaningful and relevant enhance their students' learning and their engagement in the learning process.[31]

4. Experiences with diversity, wherein students are exposed to and must contend with people and circumstances that differ from those with which students are familiar:

People grow in their acceptance of diversity when they interact meaningfully with people who are different from themselves.[32] Collaborative learning, community-based learning, service-learning, practicum, and internship experiences can create opportunities to expose students to people and settings that broaden their understanding of humanity.[33] College may be the first or only time some students encounter people significantly different from their friends and families. Interacting with peers who hold diverse worldviews, beliefs, and life experiences can expand students' thinking and broaden their minds to new ideas and perspectives.[34]

5. Frequent, timely, and constructive feedback:

Feedback is a routine aspect of assessment, but it often occurs only after it's too late for students to act upon the professor's suggestions to improve their work. Structuring assignments with check-in points and allowing students to re-do assignments based on constructive feedback enhances their learning and encourages their growth as scholars. Feedback should be positive and constructive, informing the student of what was good about their work as well as pointing to areas for improvement. Negative feedback can distort learning and performance, so faculty whose goal is teaching for retention should take care to deliver feedback that is actionable and encouraging rather than disheartening or overly critical.[35] Feedback can offer an honest assessment of students' learning relative to a given task, but it need not be harsh or discouraging. Beginning on a positive note sets a constructive tone for what follows, commenting on the most positive aspects of the student's work. Aspects that do not meet quality expectations should receive suggestions for improvement, not just a list of errors or shortcomings. Timely and constructive feedback allows students to act upon those suggestions, resulting in improved performance and demonstration of learning.[36]

6. Periodic, structured opportunities to reflect and integrate learning:

Reflection deepens students' learning because it allows them to contemplate the relative success of their efforts, identify what they learned, and articulate how they will apply their learning in the future.[37] This metacognitive practice promotes deeper learning as students make sense of what they have heard, read, or done and consider its application to their lives or future learning. It also promotes the development of skills like self-awareness, self-regulation, and goal-setting, which are fundamental to lifelong learning.[38] Blogging, journaling, portfolios, mind-maps, data visualizations, or reflective essays can foster this key practice. Students' written reflections might also serve as feedback on the efficacy of the professor's teaching.

7. Opportunities to discover the relevance of learning through real-world applications:

Real-world application of learning is crucial to students' success and is integral to applied, linked, and experiential learning. However, learning that connects students to the world outside the classroom doesn't necessarily have to be career-related. Every discipline has an existence and purpose beyond academia, which we can share with students to help them understand why it's important for them to learn what we're teaching. Student teaching, practicums, internships, service-learning, community-based learning, study abroad, and other experiential learning opportunities can enhance students' educational experience and career preparation. However, even sharing information or illustrations of how classroom learning is meaningful and relevant beyond academia can deepen students' understanding of course content.[39]

8. Public demonstration of competence:

Work that's worth doing is worth sharing with others. Public performances and exhibitions have served as culminating experiences for students in the arts for generations, and other disciplines utilize the publication of student theses (online or in print), website creation, e-portfolios or standard portfolios, final presentations, mock conferences, critiques, poster sessions, or learning

fairs. Creating an artifact or performance for public presentation requires students to synthesize their learning and communicate about it with others, utilizing a range of higher-order thinking skills.[40] Capstone projects or courses and ePortfolios are included among High-impact Practices because they leverage this strategy's power, but faculty can also include a culminating assignment to be shared with others as part of each course they teach, albeit on a smaller scale.

So, why are HIPs important? At their core, HIPs are 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 facilitates their ability to form connections between their education and their lives after graduation.

Educational psychologists such as Jean Piaget (1936)[41] and Jerome Bruner (1957)[42] and neuroscientists (Kandel, 2012[43]; Eagleman, 2015[44]) explain that the human brain learns by making connections between new knowledge and prior learning. The more we strengthen those connections, the deeper our learning. We know that practice and repetition help students learn, but the more they conduct this practice within authentic settings, the more effective and satisfying their learning will be. The human brain connects new learning to prior factual knowledge and to emotions, experiences, sensory input, and actions. Conversely, it's far less effective to learn by rote (simple memorization) or in isolation because new knowledge lacks connection to anything other than itself.

. . . . George Kuh may have conceived High-impact Practices with a model of traditional face-to-face instruction in mind, but they are also adaptable to online learning, as seen in works by authors such as Kathryn Linder and Chrysanthemum Hayes' *High-impact Practices in Online Education* (2018),[45] aligning with many of the ideas presented in this chapter. Technological tools can add beneficial elements to HIPs, such as facilitating communication across multiple modalities of instruction. They require alignment and planning (which is true of any instructional practice), but adding HIPs to our online instruction extends their impact to students across higher education.[46]

In the next sections, we'll examine each of the HIPs in succession, ending these explanations with **Action Steps** that faculty can take to integrate the principles of the HIP in their classrooms and **Pivot Points** that clarify how we might adapt or adjust each HIP [to a] range of instructional models.

First-Year Experiences

The transition from high school to college marks an exciting personal milestone, but it's also a monumental change for which some students are ill-prepared. K-12 public education remains a highly structured environment in which students have little 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.

Key Idea

First-year experiences help bridge the gap between students' high school and college, and they help students who are returning to the classroom after spending time in the workforce reacclimate to student life. Preparation leads to success.

We expect college students to leap from a very structured, highly-supervised environment into a setting where they must be self-directed, independent, and responsible, yet we may not provide much by way of personal development or pre-transitional mentoring. 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.

First-year seminars or experiences arose from institutions' recognition of these problems, beginning at the University of South Carolina in the 1970s.[47] As of 2010, 95% of four-year institutions offered a first-year seminar,[48] 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 experience, but research by Hickinbottom et al. shows that these programs tend to share the goal of increasing retention by strengthening student engagement and fostering academic success. First-year programs usually seek to help students: (1) develop a connection with the institution; (2) become familiar with the campus's resources and services; and (3) develop academic skills.[49]

An effective first-year seminar helps students understand *why* the topic or skill we want them to acquire is important, *how* to acquire this skill or knowledge, and *what* it looks like outside of the course. For instance, we know that 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 students' collegiate experiences and their future professions
- 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.

This instructional practice deliberately connects new learning to students' prior knowledge, embeds it within a social and emotional context, and ensures opportunities to receive and develop new skills and knowledge through active learning strategies and practical application. As a result, students are much more likely to perceive the value of instruction, remember what they've learned beyond the final exam, and apply their learning in other contexts.

Generations of students have arrived on college campuses unprepared for what they will face, yet they adapted and moved forward on their educational journeys. Nevertheless, our incoming students, especially (and somewhat surprisingly) those who fit the traditional profile, lack the essential knowledge, skills, and personal characteristics that gave their instructors the ability to navigate the first-year experience. We must also consider that half of our students might be adult learners whose adjustment to college differs from students who just graduated from high school.[50] Online learning presents yet another hurdle, requiring more advanced competencies in time management and self-discipline to keep up with asynchronous course requirements.

Even if you don't teach introductory courses, the strategies and principles of first-year experiences can improve your students' learning.

Action Steps

- Clearly explain the connection between your course content and students' subsequent coursework or its application to their lives or careers after graduation.
- Provide information about campus services or resources that could help students meet course requirements, such as the Writing Center. Even if you included this information in your syllabus already, mentioning it again during a lecture increases the likelihood that students will take advantage of available support.
- Incorporate direct instruction of academic skills crucial to your courses, such as critical inquiry, writing, information literacy, collaboration, and teamwork. We'd like to think students possessed these skills before they enrolled in our course, but this is often a false assumption on our part. If there's something students must know or be able to do in your course, you have to teach it to them because complaining that they don't know it just doesn't work. Plan supplementary lessons to provide your students with the competencies they need for success.
- Address personal competencies or abilities such as time management, attendance, study skills, and so on. This information need not always be part of your lectures, but weekly email and course announcements offer good coaching opportunities in an asynchronous environment, as do the moments at the beginning and end of a face-to-face class session. For example, we know that students tend to procrastinate. If a major project's due date is approaching, you could say (or write, depending on the model of your course), "I know that the deadline for our course project seems like it's far in the future, but three weeks will pass very quickly. Here's a sample timeline that will help you get the project done in plenty of time. By the end of next week, you should…."

- Make a point of establishing a personal connection with each student by sending an email or asking them to stay for a moment after class to check-in with you. A simple inquiry about their wellbeing or asking an open-ended question like, "What has been the greatest challenge you've faced in this course so far?" can build rapport and let the student know that you care about their success.

Pivot Points

- Communicate important information to your students across multiple platforms, including email, announcements posted to the LMS, and verbally in the face-to-face classroom or synchronous class sessions. It's better to over-communicate even though students might receive a message in more than one modality than to under-communicate and cause some students to miss out on crucial information.
- Treat each student as an individual and invite them to contact you to discuss challenges they may face in assimilating into the classroom environment, even if their concerns are unrelated to your course content. Some online students may need assistance using the video conferencing service, for instance. Face-to-face commuter students may have difficulty finding parking close to the building where your class meets.
- Consider adding activities that build relationships and increase engagement. You could begin a synchronous or face-to-face class session with a short poll asking an icebreaker question, for example, or build a discussion board where students can help one another by responding to a quick "question of the week" like, "What advice would you give to someone new to online learning?" awarding extra credit points to students who respond or comment on peers' posts.

Common Intellectual Experiences

To a certain way of thinking, every learning environment from preschool to graduate school offers a common intellectual experience (CIE) since all students in a class participate in the same educational 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.

- Interdisciplinary theme
- Shared content between courses
- Faculty collaboration
- Co-curricular connections[51]
- Strategies for active learning

Key Idea

Common Intellectual Experiences are fundamental to higher education even when they are not labeled as such. Our general education requirements serve this purpose to a certain extent, but CIEs go beyond shared knowledge to build interpersonal connections and help students understand linkages between the topics they study in different courses. Connections support success.

As an example, Michigan State University offers paired courses for first-year students 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.[52]

Although this high-impact practice is geared towards institutions or programs rather than individual instructors, we can draw inspiration from CIEs as we learn more about how they work. CIEs typically incorporate at least four of the Eight Key Elements of HIPs, all of which could be part of our courses.

- Interaction with faculty and peers about substantive matters
- 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 the relevance of learning through real-world applications.[53]

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. CIEs could expand upon general education requirements such as writing across the curriculum or writing in a particular discipline that continues student learning from 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.[54]

The primary benefit of CIEs is their capacity to integrate students' learning across multiple knowledge domains or topics, leading students to think holistically about their educational experiences. Activities facilitating reflection (a hallmark of all HIPs) 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 and success develop resilience and persistence – both essential to life in the rapidly changing world of the 21st century.

CIEs present challenges for online learning environments, however. Online or blended models rely on flexibility, student choice, and asynchronous interaction, so students' learning can be more fragmented, limiting common experiences.[55] Nevertheless, we can find common areas to explore even with an increasingly diverse student body and geographical distancing by using the action steps and pivot points that follow.

Action Steps

- Include an activity that builds meaningful interaction between students and the instructor. Reading an impactful book and holding subsequent discussions – a "common read" – is a well-known CIE, but other options are also possible.

- Explore substantive themes and ideas through your course, especially connections to diversity or exposing students to people or ideas with which they are unfamiliar. Make a point of using diverse examples or resources in your instruction, addressing the intersection of diversity and your academic field, or acknowledging how your field needs to improve in this regard. Diversity does not always involve race: the underrepresentation of women in computer science or men in nursing exemplify inequalities in those fields. Every field has room to grow when it comes to diversity, so fostering open conversations about these matters helps all students expand their thinking.
- Build opportunities for reflection into your course through the discussion board or face-to-face discussion, small group interactions, or written assignments such as reflective essays. Requiring students to pause and reflect on their learning helps them transfer their knowledge from short-term to long-term memory by linking it to meaning and emotion.
- Include activities that link your course content to the world outside the university, such as case studies, community-based learning, service-learning, job shadowing, or other experiential learning. Students could interview a family member, community member, or professional in your discipline. You could invite a guest speaker who is a professional in your discipline to talk about how they applied their education in the workplace. There are many options for helping students connect what they are learning in your class and its application beyond the real or virtual classroom.
- The "common read" strategy is as applicable online as it is on campus, and discussions about an impactful text can easily be held through video conferencing or discussion boards.

Pivot Points

- In a face-to-face course, a common intellectual experience could involve an outing or field trip – something that takes everyone outside of their normal instructional context to participate in a shared experience. Online, students might watch an impactful film asynchronously and discuss it afterward (being careful, of course, to obtain necessary permissions or clearances so as not to violate copyright or fair use laws.). An online guest speaker could also provide a common intellectual experience.
- Students may not be able to participate in learning activities at the same time and in the same place, but they can independently conduct variations on the same activity and then discuss the experience through video conferencing or a discussion board. For example, a course on educational history might ask students to interview a person over age 70, asking questions about their elementary school experience. Students could share their findings to form a more comprehensive view of what school was like decades ago. They would have the common experience of conducting an interview while retaining the flexibility and distancing of online learning.

Learning Communities

Alexander Meiklejohn 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.[56] 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. Learning communities 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 on 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."[57]

Key Idea

Like Common Intellectual Experiences, Learning Communities build interpersonal connections between students and infuse meaning and relevance into classroom learning. Student success depends on meeting two fundamental needs: connections to other people and meaningful, relevant activities.

Similarities between learning communities and common intellectual experiences are obvious. However, the primary purpose of a CIE is to deepen students' learning through reflection, application, and integration of knowledge and skills beyond the boundaries of courses or 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.[58]

- **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 taking unrelated courses.
- **Shared Knowing**: because all students in the learning community enroll in the same courses at the same time, they build relationships as they construct knowledge together. Shared knowing fosters social and intellectual engagement, promotes cognitive development, and nurtures an appreciation for others' perspectives.
- **Shared Responsibility**: coursework offers frequent opportunities to participate in collaborative groups. Students develop essential skills in teamwork, cooperation, problem-solving, negotiation, communication, and accountability.

In other words, learning communities provide academic content while also teaching students how to build relationships and how to work with others toward a common goal.

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

- **Linked courses** share a cohort of students and are organized around complementary themes, readings, skills, assignments, projects, or experiences.

- **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.
- **Meta-majors** cluster courses within a field of interest, introducing students to a broad career field and providing opportunities to explore various possible majors that share a set of prerequisites.
- **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.

The practices listed above are quite common, but we might also consider some innovative alternatives that show how the idea of a learning community can be adapted to suit different student populations. For example, commuter students tend to be left out of learning communities simply because they don't live on campus, which places them at a disadvantage when building peer relationships. Drexel University's LeBow College of Business offers a learning community for commuter students (CLC)[59] that fosters a sense of belonging on campus, helps students develop peer relationships, and enhances the learning experience. The group emphasizes balance, providing high-quality opportunities for meaningful engagement scheduled to align with commuter students' responsibilities and schedules outside of the university. Like other learning communities, it includes instruction in time management and other essential skills, but students also participate in off-campus excursions, corporate site visits, career development, and civic engagement. Participants in the CLC are so enthusiastic about this program that they choose to remain part of the group as upperclassmen and alumni.

Like Drexel University, Georgia State University supports learning communities, including one geared towards commuter students.[60] San Diego State University not only has a commuter learning community similar to those at Drexel or Georgia State but established a home base for these students - 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.[61] (Having been a commuter student during my undergraduate years, I can attest to the fact that this would be extremely helpful. Many commuters have no space to call their own other than their cars, and for those who commute via public transportation, lack of a "home base" is even more of a problem.)

Instructional models in which students never meet face-to-face present another level of challenge to building community, but this is not impossible. Online, we need to be more strategic and deliberate, but we can still achieve positive outcomes.[62]

Because we are considering how individual instructors can scale this HIP to their classrooms, our action steps will mirror the three distinctive characteristics of Learning Communities. After all, each course we teach is a self-contained temporary community, even if we never meet in person (as in the fully online and fully asynchronous models). By taking steps to build a sense of community among the class members, we enhance our students' collegiate experience and deepen their learning.

Action Steps:

- **Shared Knowledge**: structure your course around a central theme or topic to create a cohesive, comprehensible, and engaging body of knowledge.
- **Shared Knowing**: build opportunities for peer-to-peer interaction through small group discussions or collaborative projects that allow students to discover and construct knowledge together. The combination of social and intellectual engagement promotes cognitive development and nurtures an appreciation for others' perspectives.
- **Shared Responsibility**: utilize strategies for active learning such as discussion groups, partner activities, or collaborative projects to help students develop essential skills in teamwork, cooperation, problem-solving, negotiation, communication, and accountability as they learn how to distribute responsibilities among participants and fulfill their obligations to the group's successful completion of a project.

Pivot Points:

- Incorporate video responses in discussion boards to help students get to know one another.
- Use the chat function in video conferencing, if available. For example, Zoom and Microsoft Teams allow participants to use a text-based chat feature to communicate with one participant or the entire group. During synchronous discussions, allow students to chat a response to a classmate of their choice, or assign students a "chat partner" to whom they respond to the instructor's questions. In a face-to-face class, this might be called a "turn and talk" response, but we can adapt it to online settings with the chat function.
- Encourage students to use a few minutes before or after synchronous class sessions for conversations about topics other than the day's lecture. Casual interactions happen quite naturally in face-to-face settings, but an instructor teaching online will need to inform students that the class session will open a few minutes early and encourage students to use that time to talk to one another.
- Place students into discussion groups that meet in a breakout room during a synchronous class session, meet virtually using video conferencing, or conduct asynchronous conversations through a discussion board. (Blackboard Collaborate and Zoom both offer breakout rooms, as just two examples.)

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. First-year students are baffled 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 Composition 101 and 102 successfully but cannot write a coherent paper for a course in their major.

Key Idea

Gaining proficiency in written communication is crucial to academic achievement and career attainment. Writing intensive courses build on basic writing instruction to teach students how to communicate effectively in the discipline they have chosen to pursue professionally, enhancing their ability to succeed.

Writing-intensive courses address 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, similar to those at many colleges and universities.[63]

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
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 don't just assign a paper – we tell them how to write it, give them feedback on their writing at least once during the writing process, and allow them to re-write and improve the paper before it receives a final grade.

We may be wise to consider that teaching a writing-intensive course is not something best suited to all faculty. Art Young (2006) offers this wise advice:

> *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.[64]

The success of writing-intensive courses has led to "parallel efforts in such areas as quantitative reasoning, oral communication, information literacy, and, on some campuses, ethical inquiry"[65] across the curriculum. Not every course must become a writing-intensive course. However, we can incorporate some of these strategies into every course, especially those in which writing serves as a major component of students' final grades. Writing extends across all instructional models, so we can employ these strategies no matter where our course falls on the spectrum between fully online to fully face-to-face. By learning how to become proficient writers, students also learn how to identify, process, synthesize, and publish the knowledge they acquire through their studies. In short, making an intentional effort to teach students how to become better writers, even in courses that are not "about" writing, per se, has multiple benefits.

Action Steps

- Include specific course objectives for writing in addition to your 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, you could scaffold the task incrementally, providing critique and an opportunity for revision at each stage.
- Identify areas of your course where you could include writing activities. Even courses that generally do not require writing could incorporate a written response. For instance, students in an acting course could attend a play and write a critique of an actor's performance.
- 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 effectively use proofreading and editing software.
- Assign only purposeful and meaningful writing tasks. Writing shouldn't only generate a course grade – it should actively engage students' curiosity, creativity, and intellect.
- Provide direct instruction in your discipline's norms for written communication, including key terminology, vocabulary, preferred style guides, and resource materials.
- Choose assignments where you will provide students with formative and actionable feedback before submitting the final paper or project.[66]
- Embed opportunities for students to read and analyze professional writing in your discipline.
- Create resources, templates, outlines, or other scaffolding for your writing assignments that will allow students to meet your expectations successfully.

Pivot Points

- Fully online and fully asynchronous courses naturally require more writing than instructional models where some or all interaction occurs synchronously or face-to-face. Instructors should consider the *entire* writing load – not only written assignments but also requirements such as participation in discussion boards – modifying the writing workload if necessary. Rigor should never mean piling on more work than the student can manage.

- Consider how to use technology to your students' advantage as writers. For example, students could engage in peer editing using Google Docs, allowing multiple users to work on the same document.
- Ask students to read and respond to professional literature in your discipline by posting a PDF or link to an article in a professional journal to a discussion board and asking students to post a reflection about the article and three questions that occurred to them as they were reading.

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)[67] 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.*[68]

> *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.*[69]

> *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, and seeking new means of addressing challenges.*[70] *Integrating the arts in the university helps to address this need, involving students in participatory investigations simulating likely conditions outside academia.*[71]

Key Idea

In an increasingly automated and technological world, human creativity is a quality to be nurtured. We depend on computers to do many things, but they cannot be truly creative. Students who develop the capacity for creative thinking have an edge academically that also enhances their capacity for career success.

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 to stimulate their suppressed imaginations, held at bay for so long by the pressure to achieve high

scores on standardized tests, or subsumed by 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. In an article for *The Guardian*, Tham Khai Meng commented:[72]

> *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.*

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."[73] We can easily see this in the delightfully 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 public education's norms and practices reward conformity over originality. Once these students arrive in our college classrooms, their creative skills are rusty, at best. In "How Digital Media Has Changed Creativity" (2016), Chandra Johnson reported:

> *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.*[74]

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,[75] but today's college students lived with this pressure – and its impact on their schools – through their formative years, long before stepping foot on our campuses. Furthermore, increasing childhood use of technology also hinders creativity. Johnson also reported:

> *"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. . . Without creativity and imagination, none of those thorny problems will be solved."*[76]
>
> *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."*[77]

We adults are often guilty of the same thing, of course. It's the nature of today's lifestyle. However, most adults' childhoods were filled with far more unstructured non-electronic play than our current students experienced, 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 to 10-year-olds.[78] 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 what will be on the exam. And they are convinced that optimal workflow should proceed in a measured and orderly fashion.[79]

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 beyond the beaten path, and workflow is rarely, if ever, predictable. The question is, how do we convince our students of these truths?

Interestingly, public libraries, children's museums, and public schools have begun to combat declining creativity by establishing "makerspaces" where students can experiment with physical materials combined with digital technologies.[80]

> *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.*[81]

We can draw inspiration from these efforts and, in the spirit of HIPs, begin to infuse creativity into our students' college experiences. Some institutions require 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 about 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.[82]

Creativity fits just as easily into online and blended learning. Students in my Design Thinking course engage in a "crash course in design thinking" activity with a partner, conducted through video conferencing. However, the activity itself requires that the students create physical prototypes and sketches to design a solution for their partner. They can show their partner these artifacts through the video conference, but I also require them to photograph their sketches, prototypes, and handwritten notes and submit the images with a short written reflection at the conclusion of the assignment. The assignment doesn't just increase students' knowledge of design thinking. It also builds a peer-to-peer relationship while enhancing their creativity and communication skills and providing an opportunity to reflect on their learning experience – all components of HIPs and all conducted online.

Just as any course can become a writing-intensive if it incorporates certain practices, we can also develop creativity-infused courses across all instructional modalities, modifying our curriculum by incorporating one or more of the following action steps.[83]

Action Steps

- Write learning outcomes for increasing students' creativity and develop a means of assessment (pre- and post-course survey, reflective essay, creative project, 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.
- Provide scaffolding for students' learning of design thinking through guided practice, including brainstorming, ideation, and prototyping (ala Stanford University's "Design Thinking Bootcamp"[84]) before expecting students to use these skills independently.
- 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.
- 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 video conferencing), asking them to share their experiences and ideas with students.
- Include required readings about creativity. (Ex: Ed Catmull's *Creativity, Inc*.; Twyla Tharp's *The Creative Habit* and more.)

Pivot Points

- Allow students to respond to discussions or assignments creatively, using tools such as digital photography, drawing programs, or multimedia to present their work.
- Ask open-ended questions on discussion boards or in synchronous discussions that spark divergent thinking. Questions beginning with "What if …?" work well for this purpose.
- Rotate the role of instructor among students, asking them to develop a lesson that includes visuals such as infographics, timelines, videos, images, or multimedia. One of the best ways to learn something is to teach it, and the process of planning and preparing the lesson is inherently creative. You could allow the student to teach the lesson through video conferencing by sharing their computer screen, or the student could pre-record a video of their lesson, post it to YouTube, and share the link with their classmates through a discussion board where students could ask or answer questions in the presentation.[85]
- Consider allowing students to respond to an assignment with a creative project or presentation instead of writing a paper. Be sure to state your expectations and grading criteria very clearly before offering this option.
- Case studies or scenarios prompting students to identify an innovative solution to a real-world problem build creativity and foster communication, critical thinking, and collaboration. Students could work in pairs or small groups, in breakout rooms or independently through video conferencing, or they could work together through mobile apps like Skype, Google Hangouts, or Discord.

Collaborative Assignments and Projects

Key Idea

Collaboration is essential to today's workplace, where teaming is ubiquitous. Students to develop skills in teamwork and collaboration have an edge academically and professionally.

The 21st-century workplace is inherently collaborative, despite our society's lingering tendencies to valorize individual achievement. "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" (Belis, 2016).[86] We place Edison on a pedestal as an ultimate 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 praiseworthy but would not have occurred without the backing of an equally impressive team.

Our cultural preoccupation with individual achievement doesn't fully prepare us to become effective team members once we join the workforce, nor to work with others in civic organizations or social situations. Collaborative assignments and projects can help to bridge the gap. 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 quality level of a HIP, however, we must structure collaborative tasks so that they utilize some of the Key Elements.

- 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 opportunities 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 for students.[8788]

> *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.[89] Collaborative learning methods are "based on the assumption that learning is an active, integrated, and constructive process influenced by social and contextual factors"[90] – an idea supported by research such as a 2015 study at the University of Haifa revealing that emotions occurring during social behavior directly influence the brain's processes of learning and memory.[91]*

Collaborative assignments and projects exist at all scales and 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. [92] 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.[93]

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' application and evaluative thinking skills. Complex tasks produce deeper-level interactions than simpler tasks.

Scager et al. (2016) found that the kind and quality of students' relationships have a sizeable impact on their learning. Collaborative projects enhance peer-to-peer interaction, interdependence, accountability, ownership, motivation, and engagement.[94] It's worth repeating that the ability to work on a long-term project strongly correlates 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"[95] – all skills that can develop through collaborative learning.

Collaborative learning is certainly not limited to face-to-face settings. As I've mentioned earlier, students can work together across all learning models, whether they meet in a breakout room during a synchronous class session, communicate with each other through a tool such as Discord, Google Hangouts, or MS Teams, or use text messaging and asynchronous access to a collaborative workspace or project area in the LMS.

Since we can implement collaborative projects and assignments into a wide array of disciplines (all of which have different emphases and purposes), the following action steps ask faculty to consider how they might include a collaborative project in their course.

Action Steps

- Identify an area of your course where you could add a collaborative project.
- Determine the scale that would be most appropriate for this project. (How long should it last? How heavily should it be weighted in the course grade?)
- Choose the components you will include. (Evidence of group planning, mid-term progress-check, written documentation, peer evaluations, final presentation, other)
- Articulate the extent to which students could utilize interdisciplinary connections and how they might do this (if relevant to their investigation).
- Anticipate the actions you will take as an instructor to help students integrate their learning in and through this project and how you will assess their learning as the result of this experience. (Will you provide additional input, instruction, or resources? Will you include questions about the project on your final exam?)

- Decide what role you will play as students are working with their teammates. (Will you be available as a resource? Will you join their synchronous online meetings?)
- Clarify and articulate your expectations for groups' and individual student's participation or achievement. (What criteria must students meet, and how will you integrate this into the course grade?)
- Ensure equity of access and integrate experiences with diversity to the extent possible in your course. (How will you structure group membership, provide needed resources, ensure clear expectations for participation, and outline procedures to follow if conflict resolution assistance is needed?)
- Plan how you will facilitate students' experiential learning, build connections to the course's topic and discipline, and apply students' learning to real-world issues and needs through the project. (How does the project intersect with professional practice in your discipline or the course's relevance to students' lives or careers?)
- Identify how the project will include, reinforce, or apply co-curricular experiences by articulating what students must do outside of class and how you will hold them accountable. (Note: "co-curricular" in this instance means any learning activities occurring outside of the class's normal parameters.)

Pivot Points

- Allow students to choose how they will meet to work on their collaborative projects: video conferencing, mobile video app, face-to-face, or a combination of these, depending on the group members' needs and preferences.
- Post clear instructions for the activity or project to the LMS.
- Create options for how students will submit their group's work: live presentation via video conferencing, recorded video with a link to the presentation on YouTube, a written document submitted to the assignment area on the LMS, and so on.

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 become more prevalent over the past three decades, moving outward from the sciences through the full range of research-based and creative fields. The University of Oregon offers this explanation: [96]

Key Idea

Participating in Undergraduate Research strengthens students' perceptions of the meaning and relevance of classroom learning, connecting theory to real-world application and enhancing their capacity for academic and career success.

> *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.

Students reap several benefits through participation in mentored research. [97] [98]

- Increased persistence and gains in skills such as gathering and analyzing data or speaking effectively.
- Understanding that learning can be active and 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 undergraduate education.

According to the Council on Undergraduate Research, two primary types of undergraduate research exist. Course-based research 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.[99] Undergraduate research also occurs in 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. [100]

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

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

Of course, most institutions maintain expectations that full-time 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.

Like most HIPs, undergraduate research tends to be an institutional initiative rather than a choice made by individual instructors, but we can scale this to the level of our classrooms when appropriate. For example, the January 2019 First-Year Experience Seminar "Citizen Science" at Bard College focused on water. All 450 participants collected water samples from their hometowns over winter break, and their investigations with these samples 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.[101]

We can also incorporate undergraduate research into online learning environments, although Faulconer and Gruss (2019)[102] point to significant barriers for online students to participate in undergraduate research, including reduced awareness of and access to opportunities, financial limitations, and lack of time. Access to faculty who engage in research is also limited in online programs since part-time, non-tenure-track, and contingent faculty outnumber full-time faculty teaching online courses.[103] Since they may not have the same research obligations as their tenure-track and full-time colleagues, faculty in online programs may not have the ability to involve students in research. Nevertheless, online students can contribute to faculty research through professional and technical writing, data analysis, project management, data visualization, and tasks conducted through specialized software appropriate to a given investigation.[104] It's up to individual instructors to expand their thinking to create opportunities for students to participate across all learning models whenever possible and appropriate.

Action Steps

- Identify aspects of your research or creative practice that intersect with the content or topic of your course.
- Share your research or creative practice with students, explaining these areas of intersection.
- Include students in your research or creative practice, even if on a small scale.

Pivot Points

- Consider how you could involve your online students in your research or creative practice by delegating tasks such as technical writing, data analysis, or visualization.
- Investigate online research opportunities in your department and share these with your students.
- Encourage colleagues conducting research, especially those working with undergraduate students on campus, to consider how they might also include online students in their activities.

Diversity and Global Learning

The importance of developing students' appreciation for diversity and their ability to work with diverse individuals spans all 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."[105] The "Diversity and Global Learning" HIP rests on three practices:

- Increasing the diversity of the student body through equitable admissions policies and practices.
- Providing all students with a clear path toward educational opportunities.
- Embedding diversity in the institution's mission to produce and transmit new knowledge.[106]

Key Idea

Some of our students have had few experiences with others who are unlike themselves Diversity and Global Learning can open new horizons, enhance their intercultural competence, and help them understand the human condition from new perspectives. When we help students break free from their assumptions about others, we prepare them for success in today's global society.

"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).[107] College might also be the first time students confront various 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.*[108]

Despite their good intentions or public statements of support for diversity, equity, and inclusion, our institutions 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, groundskeepers 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 this regard, but other dimensions of diversity such as

age, disability, socioeconomic status, ethnicity, religion, sexual preference, and 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.[109] However, merely studying "the other" does little to change students' attitudes toward 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, 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 super-additivity, meaning that the solutions they generate are greater than the sum of their parts.[110]

Just as universities establish writing-intensives in disciplinary courses, they also provide intensives in diversity and global learning. Courses might 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 provoke deep reflection and increased self-awareness of one's own social identity or identities.
- Co-curricular activities involving interactions with peers or groups from different backgrounds, exploring unfamiliar places, or applying 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.[111]

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.[112]

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 our goals as educators, but we often stop at criticizing others' ideas. Critical thinking is also a tool for reflecting on one's own assumptions and strengthening one's own understanding. According to the AAC&U: [113]

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.

Teaching for global learning should include emphases on shifting one's perspective.[114]

- **Problem framing**: a purposeful examination of how 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 how 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 considers multiple interpretations of its causes, consequences, and proposed solutions.

The most powerful tool for opening our students' hearts and minds to diversity lies in building relationships with people who are different from themselves. As I said in *Higher Education by Design*:[115]

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."[116] 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.

Experiential learning strategies, particularly service-learning, community-based learning, and study-abroad, are 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.

Regarding online learning environments, the Reinert Center for Transformative Teaching and Learning at Saint Louis University explains, "Online courses often attract an intergenerational and geographically diverse student enrollment, which also intersect with differences in gender, race, class, sexuality, ability, and so forth. It is important to be mindful of how these student demographics matter differently in an online learning environment (e.g., Boyd, 2016[117]; Dominique, 2016[118])."[119] Because of their appeal to students who need the flexibility and affordability that an online learning environment can provide, our online and blended courses can offer valuable opportunities to engage in this HIP as students work and learn together. Nevertheless, we also must keep the needs of these diverse learners in mind, considering that those from lower-income households or those with work or family responsibilities may have difficulty attending synchronous meetings. Diverse students may also face language barriers or have accommodations that must be met if they are to participate optimally. Instructors should keep these factors in mind, especially when forming collaborative groups or establishing expectations for participation during class activities.

Action Steps

- Reflectively and honestly examine your 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.

Pivot Points

- Consider how you identify and meet the needs of diverse learners in your classroom, remembering that diversity is not only about race and gender but students with special needs, differing ability levels, and extenuating life circumstances such as being employed full time, being a parent, being much older than their peers, and so on.
- Provide readings and multimedia that expose students to the points of view of persons different from themselves, holding a follow-up discussion synchronously through virtual conferencing or asynchronously in a discussion board.
- Create an activity in which student partners interview one another over video conferencing or a mobile video communication app, asking one another to talk about a common experience and structuring interview questions to elicit points of connection and moments of realization. During a subsequent synchronous class session, each partner could share the most significant

thing they learned about their partner, or students could post the same idea to an asynchronous discussion board.

ePortfolios

The AAC&U expanded the original list of 10 HIPs 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."[120]

Key Idea

ePortfolios provide students with two important advantages: 1) they incorporate structured reflection on students' learning, and 2) they are a tool to showcase students' achievements to prospective employers, supporting academic and career success.

> *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.*[121]

Despite the perception that ePortfolios are faddish or trendy, their use rests on sound learning theory based on social constructivism, or the knowledge that learning is most effective when students construct systems of knowledge within a social context through dialog and interactions with others.[122] 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 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.[123] Such metacognitive engagement enhances student learning, particularly when employed in conjunction with other HIPs because it amplifies these practices' reflective and integrative activities. 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.[124]

Some institutions adopt ePortfolio platforms, which may be linked to their LMS and allow faculty to access students' sites for grading and feedback. Faculty or departments can also facilitate students' creation of ePortfolios through a free or low-cost web hosting service like Weebly, Squarespace, Wix, Behance, or Google Sites[125] - a strategy long employed by the visual arts, among other disciplines. Professional networking sites like LinkedIn host portfolios, too. Whatever approach we take towards

ePortfolios, whether institution-wide or limited to a department, faculty can support students' use of this tool.

Students need faculty support when creating their ePortfolios. When left to their own devices, students' portfolios tend to become "glorified electronic filing cabinets," but when implemented in conjunction with purposeful instruction, portfolios can grow into meaningful and relevant tools for professional success and can support students' learning.[126] An ePortfolio generally includes the following components, but this varies based on individual preferences, disciplinary norms, and the field in which the portfolio owner works or hopes to work.[127]

- **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 section may 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 section can include specific information about jobs held and details about locations, job titles, employment dates, 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. Activities could include volunteer work, technical skills, proficiency in languages other than English, military service, and participation in clubs or other co-curricular organizations. Evidence might include publications, electronic presentations, projects, assignments, research papers, writing samples, or other artifacts demonstrating knowledge or exhibiting proof of proficiency.

For example, the Professional Practices course I designed and taught online required students to create a professional website meeting a specific set of criteria and uploading a series of items. Students then shared the link to their site through a discussion board, and all students were required to visit at least three peers' sites and provide a critique.

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 site 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. Furthermore, ePortfolios seamlessly integrate with online learning since both are digitally-based activities.

Action Steps

- Incorporate the ePortfolio into the course's outcomes and tie assessments of students' portfolios to their course grades, using a rubric for grading and providing formative verbal or written feedback during the semester.[128]
- Share examples of high-quality ePortfolios created by other students; create and share your own ePortfolio.
- Include viewing and commenting on fellow students' ePortfolios in assignment requirements.
- Encourage students to collect artifacts of their learning throughout your course.

Pivot Points

- Post information to the LMS about which assignments will result in items students could use in their ePortfolio.
- In addition to the Action Steps suggestions, provide an area where students can link their ePortfolio to share with their classmates and hold a "virtual open house" event where students can explore one another's work.

Experiential Learning

Service-learning and Community-Based Learning technically exist as a separate HIP from Internships or other workplace experiences. However, all are forms of experiential education, which is rooted in a set of shared educational theories, including those of John Dewey (1938),[129] David Kolb (1984),[130] and Carl Rogers (1969, 1994).[131] Experiential learning 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" (Kolb). Experiential learning places students in contexts where they can take the 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.

Key Idea

Learning is not a spectator sport. Students are most successful when they have opportunities to engage in hands-on, practical, meaningful, and relevant activities that connect theory to practice.

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.

The instructor acts as a facilitator who establishes a positive climate for learning, clarifies the learner's purpose, organizes learning resources, and makes them available to students. The instructor also balances the learning experience's emotional and intellectual aspects and shares thoughts and feelings with students without dominating their learning experience. Moreover, students participate completely in the learning process, are the primary evaluators of their own learning, and assess their own progress and success.

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. Some might argue that academic fields like graphic design are inherently experiential because most learning occurs through doing rather than passive listening. However, the experience of designing something for a class assignment is fundamentally different than working with a nonprofit agency to design a new logo that allows them to raise their visibility among their target audience.

Experiential education provides invaluable opportunities for students to develop, reflect upon, apply, and transfer knowledge in real-world settings, increasing student engagement with the topics they're studying. Service-learning, community-based learning, internships, and other methods of experiential education presume a face-to-face campus setting in which the instructor directly facilitates the student experience. Under conditions where this is not possible, such as a fully online and fully asynchronous instructional model, we must adapt the procedure by placing greater responsibility on the student for identifying opportunities for experiential learning where they live. We will discuss this option after the explanation of the following models.

Service-learning and Community-Based Learning

Most colleges and universities 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.

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 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.[132] If these results merely indicated that more jobs are available in the business sector, we could expect to see similarly stellar job placement rates at all business schools, 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%.[133] Rather, these institutions attain exemplary alumni outcomes by integrating preparation for the workplace in their curriculum and 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 can directly observe the student's work ethic and job-related skills.
- **Externships** are shorter 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 to build 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. Depending on the field, a co-op placement may require the student to take a semester or more away from their studies, especially if it is a full-time paid position. Co-op students have more opportunities to become an integral part of an organization, work on important projects, and receive 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.[134]
- **Volunteer work** related to a student's field of study can also provide practical experience. Many 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.

Advance planning for experiential learning requires a significant investment of time and effort. The following is a partial list of actions that can help instructors prepare for these activities.[135] As with anything else, though, these steps will vary depending on your institution, your course structure, departmental norms or requirements, and especially your disciplinary field.

Action Steps

1. Identify and establish a relationship with the partner organization (or organizations) with which your students will work.
2. Write student learning objectives and 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 worksite
    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 on 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 any training or orientation that might be required by the partner organization before students can participate
    f. 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 hold a shared understanding of 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:
    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 the demographics and histories of the target population, including contextualization, such as discussions of power and inequality
    c. All planned activities related to the experience, including calendars, schedules, and logistical information, where applicable
    d. Incorporate instruction in problem-solving, critical thinking, analysis, application, theorization, and reflection as it pertains to the experience
    e. Plan for how you will assess student learning and how you will assign grades for students' involvement in the experience

7. Communicate regularly with the partnering organization, visit the site, monitor progress, and ensure that students are functioning appropriately.
8. Incorporate separate opportunities for debriefing and reflection for students and 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.

Pivot Points

When a course is held fully or partially online, it might be impossible for the instructor to be as directly involved in the process as in the previous models, especially if students are geographically distant from campus. However, experiential education is still possible by involving students in identifying their own opportunities. Obviously, these factors will vary depending on the disciplinary orientation and content of your course. Volunteering with a county forest preserve for an environmental ethics course will be a vastly different experience than serving at a food pantry for a sociology course, which will also differ greatly from an unpaid internship in a corporate marketing department for a public relations course. Furthermore, some kinds of formal experiences like student teaching will be subject to additional conditions, possibly requiring more participation by the instructor.

1. Instruct students on how to identify experiential learning opportunities (as appropriate to your course) in the community where they live.
2. Ensure that the experiential learning requirement is reflected in your course objectives.
3. Communicate with students about 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. Therefore, the student's selected opportunity must be contingent on your approval to ensure all conditions have been met.
4. Consult with students on how they will handle matters related to scheduling, transportation, liability, required training or orientation, and employer expectations of student participants (dress code, professionalism, restrictions, etc.)
5. Create a document that the student must present to the individual or organization with which they will work, expressing any expectations and assumptions about the experiential learning opportunity so that all parties reach a common understanding. The document should encourage all participants to verbalize any concerns directly to you so that you can address them before they become problematic.
6. Compile all necessary information, documentation, and written materials, providing them to all participants:
    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 experience will incorporate problem-solving, critical thinking, decision-making, analysis, application, theorization, and reflection

d. How student learning will be assessed and how grades for students' involvement in the project will be determined

7. Ask students to provide you with contact information for the person who will directly supervise or facilitate their experience and communicate with this individual to monitor students' progress and ensure that they are functioning appropriately within the project setting. Send this individual a personal note of thanks once the student's experience has been completed.
8. Incorporate an opportunity for debriefing and reflection that asks students to think critically about their experience, relate it to larger contexts and issues, identify challenges and successes, and prepare for future engagement if possible. You might use a discussion board, reflective essay, or short video, deciding whether the reflection should be public, as with a discussion board, or private, as with an assignment.

Capstone Courses and Projects

Just as HIPs begin with 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 in Visual Art will showcase their artworks in a final exhibition, just as a student earning a BFA in violin performance will present a senior recital.

Key Idea

Capstone courses and projects can connect HIPs like ePortfolios and Experiential Learning, especially in requiring students to reflect on what they have learned and apply that learning to their careers after graduation. They showcase students' academic success and prepare them to continue that success throughout their lives.

Brown University provides this description of capstone requirements.[136]

> *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.[137] 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[138] identifies several options.

- Capstone course
    - Department or discipline-based course
    - General education-focused course / campus-wide capstone requirement
- 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. However, their common thread lies 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 correlate with the greatest gains for students.[139] 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%)[140]

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

We can scale capstone experience to our courses by incorporating a culminating activity that allows students to understand what they have learned, how it can apply beyond the classroom, and how it relates to their lives after graduation. We might use something as simple as a final discussion board, a question on the final exam, or a reflective essay. Or you could incorporate reflective questions into an

existing culminating activity. The point is to prompt students to think about what they have learned and what it means for their futures.

Action Steps

- Select or create an activity or assignment to serve as the course capstone.
- Embed a requirement that students reflect on what they learned as the direct result of their participation in the course.
- Include an additional requirement that students articulate or explain how they can apply their learning in the course to personal or professional contexts after the course has ended.

Pivot Points

- Hold a virtual exhibition of students' final projects, requiring that they post the project to a discussion board and comment on one another's work.
- Set aside time during the last synchronous class period for students to make a reflective statement about what they learned in the course. Students who attend asynchronously could post their responses to a discussion board.

Summary and Reflection

The following table compares 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 the 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

Comparison of HIPS and Eight Key Elements

Notably, interaction with faculty and peers, opportunities for reflection and integration of learning, and real-world application span all twelve HIPs. 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. At all levels, from individual classrooms to entire universities, and from campus-based face-to-face settings to fully online and asynchronous courses and programs, HIPs produce an outsized impact on our students.

High-impact Practices support students' achievement and improve their collegiate experience, career outcomes, and personal wellbeing after graduation. They strongly correlate with a student-centered philosophy of teaching and align with our institutions' mission and vision statements. Their benefits are widely understood, yet we seldom think of them as strategies we can employ for ourselves. It's time we changed our opinion!

Are HIPs mandated by most colleges or universities? No. Can you create a well-designed course and teach it skillfully without them? Yes, of course. Nevertheless, building HIPs into your course at whatever scale is appropriate takes your teaching practice above and beyond the levels of "good enough" and "very good" to *outstanding*. It exemplifies a student-centered perspective and showcases your grit and growth mindset as an educator. You will truly become someone who demonstrates the excellence we hope everyone will achieve across higher education.

* * * *

Additional Considerations for HIPs

Before we leave the topic of HIPs, we should note two important success criteria. First, HIPs must be "done well" to be effective. NSSE researchers define "done well" as addressing continuing questions of access, quality, assessment, and equity linked to their success in incorporating the Eight Key (or essential) Elements: high expectations, a significant investment of time and effort, substantive interaction with faculty and peers, experiences with diversity and in unfamiliar situations, frequent feedback, opportunities for reflection and integration of learning, real-world application, and public demonstrations of competence. Ideally, these should be manifested in every HIP, but the reality of practice does not meet this expectation.[15] Therefore, our efforts to implement HIPs should include intentional design to incorporate these elements to the extent possible. Quality and consistency are essential to everything we do, including HIPs.

Second, HIPs should be embedded into the curriculum.[16] Students usually meet course requirements, but they are less likely to engage with superfluous content or activities that exist apart from regular instruction or graded learning activities. Furthermore, many students' schedules or responsibilities

[15] https://nsse.indiana.edu/research/annual-results/2022/story2.html

[16] Gu, H., Artan, N. S., Dong, Z., Amineh, R., Cao, H., & McPherson, S. (2020, June). Course Redesign–Embedding High-impact Practices (HIPS) in STEM Courses. In *2020 ASEE Virtual Annual Conference Content Access*.

preclude their participation in HIPs occurring outside the regular curriculum or degree plans, thereby limiting the potential benefits they might have realized through participation.[17] Furthermore, students can derive the benefits of HIPs in courses that embed the Eight Key Elements of HIPs, even if these occur apart from specific HIP implementation. For example, studio courses in the visual arts typically utilize group critique of student artworks, which includes high expectations, substantive interaction with faculty and peers, feedback, reflection, and public demonstration of competence – five of the Eight Key Elements. Moreover, visual art students invest significant time and effort into creating artworks involving hands-on applications of the skills and knowledge imparted in their studio coursework, and their required art history courses can increase their experiences with diversity as they study artworks and artists from unfamiliar cultures, and real-world applications of skill and knowledge. All eight Key Elements are embedded organically throughout a visual arts program. Embedding HIPs into a visual arts program reinforces and extends these benefits, such as providing opportunities for students to assist faculty in their creative practice (undergraduate research) or requiring students to complete study abroad programs, internships, service-learning, or community-based learning as part of their degree programs.

When we treat HIPs as an add-on or afterthought to our curricula or degree programs, students perceive our lack of commitment to these practices, whereas embedding them into the curriculum or requiring participation as part of a degree plan reinforces their legitimacy.[18] It also facilitates student participation, whereas leaving involvement as a voluntary option conveys an implicit message that the activity is not valuable or important enough to warrant full inclusion in the curriculum.

Incorporating HIPs may be unfamiliar to many faculty, but it need not be onerous. Much of what we already do can align with these practices, enhancing students' learning and academic achievement. Our students' success is our success, so implementing HIPs with quality and consistency and embedding them into our courses and programs is worth the additional effort.

In the next section, we'll examine Career Pathways, Linked Learning, and Experiential Education to learn how we can implement them to enhance student success. These strategies correlate with HIPs to enhance our programs and curricula, helping our students remain until graduation and move on to lead fulfilling, productive lives.

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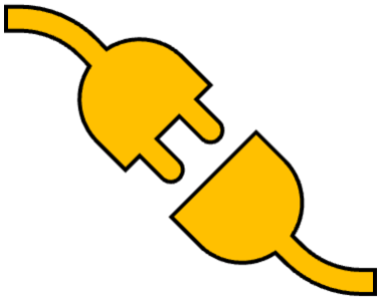



Part Three:
More Paths to Student Success

Central Questions:

What are some other strategies to increase student success?

How can we incorporate these strategies into our courses and instruction?

More Paths to Student Success

HIPs offer effective strategies to improve student success, but they are not the only tools at our disposal. To raise persistence and graduation rates and support graduates' career achievement, we will need to reach beyond standard approaches to curricular planning, creating degree plans, and student advising by creating career pathways, linking instruction to students' future careers, and incorporating experiential education wherever possible. Our students deserve nothing less than our best efforts so that they leave our classrooms prepared for their chosen careers and ready to lead successful, sustainable lives.

Information in this section is excerpted from *A Reason to Stay: Teaching for Retention in Higher Education* (Mackh, 2023, New Manuscript). Portions were previously distributed as the whitepaper *Pathways: Practical Strategies for Career Success* (Mackh, 2022).

Introduction

High-Impact Practices and their Eight Key Elements connect to other strategies for supporting student retention, completion, and career success. Specifically, the Key Element, "Opportunities to discover the relevance of learning through real-world applications," is intertwined with strategies for experiential learning embedded in the HIPs of undergraduate research, service-learning, community-based learning, and internships. Because these HIPs involve students in authentic learning in the world beyond the classroom, they also increase students' exposure to other Key Elements, including "Interactions with faculty and peers about significant matters" and "A significant investment of time and effort by students over an extended period."

Experiential learning was introduced in the previous discussion of HIPs. This section offers an expanded overview of how we might incorporate experiential education into our courses and degree programs by embedding linked learning in our instruction and building career pathways for our students. It also

provides a more in-depth explanation of experiential learning, which is the common thread binding HIPs, linked learning, and career pathways together.

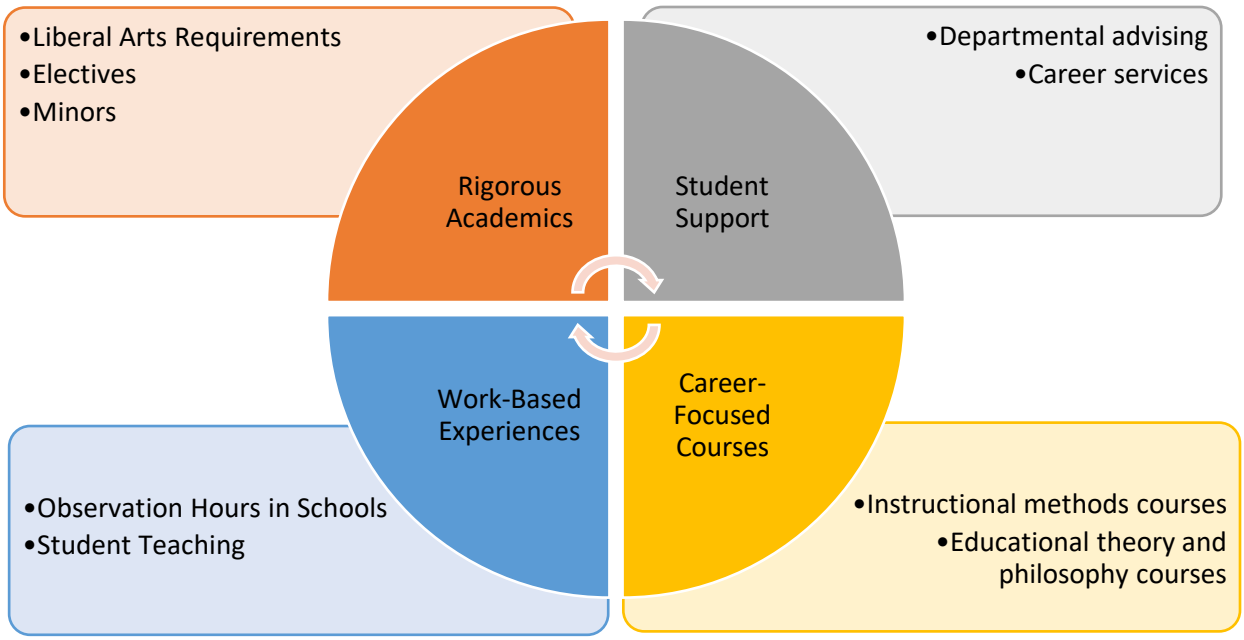
Linked Learning

Linked learning began as an innovative strategy for high school reform, offering dual preparation for college and careers by pairing classroom learning with real-world application in the workplace. Such programs generally involve a four-year program built around a central theme, such as engineering, that integrates academic content, technical training, and 21st-century workplace skills.[1] Linked learning was designed to mitigate some of the stigma associated with distinctions between vocational training and college preparatory curriculum.[2] These programs often provide workplace simulations, apprenticeships, internships, and mentoring by industry professionals.[3]

Key Idea

Students learn best when we connect our course content to its relevance beyond the classroom. Our disciplines are meaningful, relevant, and important beyond the university, so faculty support student success when they make these connections evident for students.

As applied within higher education, linked learning bridges the gap between classroom instruction and experiential education, creating a comprehensive program of study directed toward preparing students for success in a specific career field. According to the Linked Learning Alliance, linked learning incorporates four crucial elements: rigorous academics, career-focused education, work-based learning, and comprehensive support services.[4] These elements appear in many pre-professional programs, although they may not be identified as "linked learning." For example, we might map linked learning in Elementary Education as follows.



Similar maps could be drawn for business, healthcare, or other academic fields requiring practical experience as part of students' degree plans. However, every academic discipline could incorporate elements of linked learning because every discipline maintains connections to professional practice, sometimes across multiple career paths.

Linked learning can also be applied strategically within individual courses by drawing explicit connections between course content and real-world applications and by incorporating activities that provide real-world experiences connected to the course content.

Connecting classroom instruction to students' future lives or careers adds relevance and meaning to learning, increasing engagement and motivation. No academic discipline exists in isolation from real-world application. Faculty should show students how this content exists in real-world applications and demonstrate how their learning is directly related to their future careers. We can't presume students will make these connections independently. Rather, drawing overt linkages between theory and practice provides students with the "why" behind their learning, giving them concrete reasons to persist and engage in the course.

Our job as educators is to help students understand the relevant knowledge and useful skills inherent to every discipline. These connections are obvious in pre-professional degree programs, but every discipline can strengthen its impact on students by incorporating linked learning lessons into instruction. For example, faculty in the much-maligned humanities disciplines have advocated for their fields' intrinsic and instrumental value for generations, but we might not address this matter with our students directly. Do we offer specific explanations of how students can apply philosophy to their careers in engineering or healthcare? Do we clarify how knowledge of history will benefit future accountants or business administrators? Do we teach our general education students about the fulfilling careers available to students who have majored in liberal arts or humanities, such as philosophy graduates who work for Big Tech companies because their proficiency in logical reasoning is in high demand? Do we suggest to students who excel in our English courses that they might consider investigating careers in Media and Communications or Information Technologies where their skills are highly valued? Building linked learning into our instruction allows us to leverage our expertise as disciplinary professionals by communicating the information students need to make good choices supporting their achievement of fulfilling lives and careers.

College-Career Connections

Many academic disciplines require practical experiences as part of students' degree programs. As we saw in the previous discussion of linked learning, aspiring educators complete student teaching. Future nurses and healthcare workers fulfill clinical requirements. Business students participate in internships or co-op experiences. When practical experience isn't required, students can pursue co-curricular options such as volunteering, paid employment, mentored research, fellowships, fieldwork, and study abroad, among other opportunities. As with the previous discussion of HIPs, faculty can scale practical experience to their classrooms by incorporating intentional connections between theory and practice that enrich their students' learning.

Key Idea

Although every academic discipline is intrinsically valuable, student success depends on communicating its instrumental value to students beyond the final exam. What we teach is not important simply because we are experts – it is purposeful and relevant outside of our course requirements. We support student success when we incorporate instruction that helps them make these connections, giving them a reason to learn what we are attempting to teach.

Higher education is undeniably linked to students' career aspirations. The Strada-Gallup poll "Why Higher Ed?" found that 6 in 10 people who enroll in higher education do so to pursue a career.[5] . . .A bachelor's degree no longer offers the employment advantage it once did when this achievement was rare. Furthermore, the job market is shifting away from degree requirements to skills-based qualifications,[6] increasingly rendering the value and utility of a degree questionable. This change is also evident in the April 2023 unemployment data from the US Bureau of Labor Statistics, which showed a 4.3% unemployment rate among adults ages 20-25 with a college degree, while only 3.8% of the same age group having only a high school diploma were unemployed.[7] Although these results differ by a mere half a percentage point, we may question why people without a degree experienced lower unemployment than college graduates.

Moreover, Scott Carlson reported in the *Chronicle of Higher Education* that "Georgetown University's Center on Education and the Workforce examined the effect of education on lifetime earnings and found that 16% of workers with a high-school degree and 28% with an associate's degree earned more money than half of workers with a bachelor's degree."[8] Advantageous qualifications, lower unemployment, and better salaries have long justified the expense and effort of degree attainment. If these factors are no longer true, institutions will find it increasingly difficult to persuade prospective students to invest tens of thousands of dollars and years of their lives in an education that may not live up to its promise.

Given that a degree alone may no longer be an advantage in today's job market, institutions of higher learning may question their reliance on standards that keep students' professional aspirations at arm's length. Instead, incorporating proven strategies such as experiential learning facilitates our graduates' career attainment by providing them with the knowledge, skills, and experience they need to achieve their goals and dreams.

Pathways to Achievement

Polytechnic institutions have an excellent track record of preparing students for careers. For example, the University of Wisconsin Stout's career-focused comprehensive curriculum blends a liberal arts foundation with applied learning. In the liberal arts core, students develop skills in complex problem-solving, communication, critical thinking, and leadership while exploring a variety of academic disciplines. Applied learning is woven throughout every major, incorporating tools to evaluate, create, and shape human understanding while emphasizing hands-on learning that connects theory to real-world experiences. Stout's success is evident in its graduates' career attainment: over 97% are employed or continuing their education. Stellar success rates like this are not unusual in business or STEM fields, but all six of Stout's academic groups (called "career clusters") achieve similar results.

Key Idea

Pathways build on traditional degree plans, incorporating additional elements that help students achieve their career aspirations such as minors, certificates, microcredentials, and co-curricular activities that help them qualify for in-demand careers and professions. This approach supports student success and fulfills our institutional mission.

Looking deeper into Stout's data, its Art, Design, and Graphics group boasts a 98% alumni success rate, which is head and shoulders above the norm for arts graduates. The Strategic National Arts Alumni Project (SNAAP) aggregate survey data from 2015, 2016, and 2017[9] showed that only 27% of respondents reported working full-time as an artist in the previous calendar year, 64% said they were currently working as a professional artist either full-time or part-time, but 81% said they are or have previously been self-employed.

Stout's exemplary success is not only due to its integrated approach to liberal arts and applied learning but to the fact that 85% of its students participate in internships or cooperative (co-op) learning, giving them hands-on professional experience before graduation. Stout also hosts one of the largest career conferences in the Midwest, maintains partnerships with more than 550 businesses and nonprofit organizations that provide co-op and internship opportunities to its students, and 100% of its programs have advisory boards of industry professionals.

The polytechnic approach to higher education incorporates four essential elements:

- Classroom instruction blends knowledge and theory with practical application through real-world, hands-on, authentic learning experiences that allow students to work closely with faculty who are active professional practitioners.
- Workplace-based learning through internships or co-op.
- Career-focused curriculum overseen by advisory boards of disciplinary professionals.
- Institutional connections with external partners in the corporate and nonprofit sectors.

These connections link the institution to external entities or professionals and forge pathways leading students from college to careers.

Meaning and Relevance

Without a doubt, every discipline is intrinsically valuable and worthwhile whether or not students understand how it might relate to their lives or careers. Faculty have long expected students to make connections for themselves, even when they specifically ask, "But how will I use this later in life?" or "How is it applicable to my career?"[10] However, classroom instruction in a college-to-career pathway makes these connections explicit. Students are not left to wonder how their learning will matter – course content is made meaningful and relevant from the beginning.

Relevance is crucial to effective learning. Faculty might have much they want to teach about their topic, but if students are not interested and do not believe it to be personally meaningful, the ideas they strive to convey evaporate into the ether. The human brain learns by building connections between new information and existing knowledge. Kember, Ho, and Hong note that faculty can persuade students the course's content is worth knowing by tapping into students' cognitive need to make sense of the world, promoting attention and engagement even when the content might be disinteresting.[11] For example, nursing students must memorize vast amounts of medical information to pass the rigorous NCLEX licensure exam. Long-term memory of complex terminology or concepts is made possible because students know this information will be needed in professional practice. Furthermore, nursing instruction and the exam itself are designed to apply memorized knowledge to authentic practice, as seen in this sample test-prep question.[12]

> *A 15-year-old female with a history of depression is rushed to the emergency department after ingesting 15 tablets of maximum-strength acetaminophen 45 minutes ago in a suicide attempt. The patient's vital signs are stable, but she is visibly anxious and tearful. The healthcare provider has written several orders to manage the situation. Which of the following orders should the nurse prioritize and carry out first?*
>
> *A. Perform gastric lavage.*
> *B. Administer acetylcysteine (Mucomyst) orally.*
> *C. Start an IV with Dextrose 5% and 0.33% normal saline.*
> *D. Have the patient drink activated charcoal mixed with water.*

Clearly, nursing students would need a sound knowledge base supporting their ability to answer questions like this correctly, especially because human lives can be at stake.

Kember et al. also explain:

> *The traditional building block curriculum, which devotes substantial parts of initial courses to basic theory, could demotivate students if they could not see how the theory was applicable to the discipline or profession. The problem could be alleviated by a course which revealed a*

curriculum map showing the application of basic material in more advanced courses, or by early periods of exposure to professional practice in professional programs.

Nursing, PreK-12 education, and other academic disciplines overtly aligned with professional practice like engineering or business have the advantage of built-in connections to real-world contexts. Links between college and careers in other fields are more difficult to identify. According to Carlson:

> *Many people are confused about the relationship between majors and the job market. Students and parents (and, frankly, many people who work for colleges, along with media pundits) tend to equate major with job and have a hard time seeing the pathways to careers from, say, the humanities. Lists of the "most to least valuable college majors," as Bankrate characterized its program rankings, based on data from the US Census Bureau's American Community Survey, reinforce a simplistic equation: Major in architectural engineering (which topped Bankrate's list), and you could have a lucrative career as an architectural engineer; major in composition and speech, drama, fine arts, or other majors at the bottom of the list, and who knows what you'll do — except struggle.*

Like its polytechnic peers, UW Stout excels in making purposeful connections because each field of study exists within a group of similar fields, forming pathways to in-demand careers. Students receive hands-on experience from the beginning, with overt instruction in each course's relevance to professional practice.

Building Pathways from College to Career

Every field of study can offer viable pathways to graduates' career achievement, but first, we educators must construct those paths for our students to follow. None of us can accomplish this task alone, although every faculty member can incorporate some of these strategies independently, improving the value of their courses for their students. Nevertheless, our work in building vibrant, vital, and valuable pathways linking college to careers should occur across every institutional level.

Institution-Level Actions

1. Repeatedly and consistently express the institution's mission of preparing students for in-demand careers and professions.
    a. Emphasize that all learning offered within the institution exists in support of this central identity, not for its own sake. All disciplines are intrinsically valuable, but they must also be instrumental in achieving the institution's central purpose.
    b. Embody this emphasis, mission, and identity in new verbiage describing degree plans as career pathways that purposefully link all learning to the goal of career attainment.
2. Assist departments in creating curriculum maps and rewriting degree maps as career pathway maps, extending them beyond graduation to multiple career possibilities.
3. Provide professional development in:

    a. Incorporating High-Impact Practices and their Eight Key Elements[13] into all courses in every discipline and using curriculum maps and career pathway maps to assist students' learning and achievement.
    b. Engaging students by building meaning and relevance through active, experiential, and hands-on learning.
4. Establish accountability in faculty annual performance evaluations by incorporating assessment of faculty proficiency in leading students along the established career pathways.
5. Encourage departments to build external connections and partnerships that facilitate internships and co-op opportunities for students.
6. Host regular career fairs, inviting prospective employers from around the region. Prepare students to participate in career fairs by helping them create a resume and coaching them on interview skills, making a good first impression, and cultivating a professional appearance.

Department-Level Actions

1. Building on the concept of a degree map, create a map of each career pathway, extending beyond graduation to the various careers students who earn this degree might pursue.
2. Map every program's curriculum in full, showing the concepts students acquire at each level of their degree progression, connecting the introductory skills and knowledge of beginning courses with their application in upper-division courses and professional practice.[14] Utilize this map in every course, showing students where they are along the pathway ("You are here") and how the course will help them advance their skills, knowledge, and employability.
3. Assemble an advisory board for each program, inviting industry professionals to review the department's curriculum specifically with an eye toward its relevance and applicability to current professional practice. Maintain an open mind toward their suggestions and make appropriate revisions (always adhering to university policy and procedure).
4. Develop internship and co-op opportunities, building relationships with businesses, nonprofits, educational institutions, government offices, and other external organizations as appropriate to the discipline. Nursing and PreK-12 education have long required students to complete practicum experiences as part of their coursework, and business programs often offer internships and co-op experiences. Such opportunities can extend to every discipline. Even if not required, they should be strongly encouraged for all students.

Course-Level Actions

1. Eliminate "syllabus day" and generate excitement for the course by focusing the first day of class on what students will learn and how it will apply to their lives and careers. Use the curriculum map to show students how the course is a stepping-stone along their career pathways.
2. Frequently and explicitly connect course content to its applicability in real-world contexts.
3. Ensure that all concepts taught in the course are meaningful and relevant to students. No learning occurs in isolation. Show students how new concepts connect to their learning in previous courses and how it supports future learning, using the curriculum map as needed.
4. Incorporate hands-on learning and practical experience wherever possible.

    a. Remember, learning is not a spectator sport – students learn by doing, not by watching or listening.
    b. Applying theory to practice is active learning that supports higher-level thinking and long-term memory.
5. Incorporate High-impact Practices:
    a. First-year seminars and experiences
    b. Common intellectual experiences
    c. Learning communities
    d. Writing-intensive courses
    e. Creativity-infused learning
    f. Collaborative assignments and projects
    g. Undergraduate research
    h. Diversity and global learning
    i. ePortfolios
    j. Service-learning and Community-based learning
    k. Internships
    l. Capstone courses and projects

    These practices allow students to make meaningful, relevant, real-world connections between their learning and practical application of the course's content.
6. Include as many of the Eight Key Elements of High-impact Practices in the course as possible:[15]
    a. Performance expectations set at appropriately high levels
    b. A significant investment of time and effort by students over an extended timeframe
    c. Interactions with faculty and peers about significant matters
    d. Experiences with diversity
    e. Frequent, timely, and constructive feedback
    f. Periodic, structured opportunities to reflect and integrate learning
    g. Opportunities to discover the relevance of learning through real-world applications
    h. Public demonstration of competence

Creating pathways from college to career represents a significant shift in most institutions' normal operations and educators' attitudes toward students because they move beyond simply delivering course content to facilitating students' learning leading to their career attainment. Career pathways also go beyond standard degree plans by preparing students for meaningful lives of professional achievement. This work is not confined to our classrooms, nor does it end at commencement. It is a commitment to student success that recognizes the world has changed, so higher education must change along with it.

Experiential Education

Linked learning and career pathways utilize the methodologies of experiential education, which factors heavily into the High-impact Practices of undergraduate research, service-learning and community-based learning, internships, and capstone projects or experiences. John Dewey's *Education and Experience*[16] remains a seminal work in this field. Dewey proposed that the environment profoundly influences individuals in forming habits that control their thoughts and behavior. Social environments involve people in purposeful activities that entail specific consequences. Dewey strongly supported experiential education, emphasizing the importance of learning by doing rather than passive listening. He also opposed traditional approaches to education in which a defined body of pre-ordained knowledge was conveyed uniformly to all students.

Key Idea

Student success depends on putting theory into practice. Traditional instruction depends on listening to lectures, reading textbooks, and writing papers, but students also need practical application in authentic contexts to develop the skills they need for academic and career achievement.

Carl Rogers[17] built upon Dewey's theories, promoting experiential learning over what he terms "cognitive learning," such as rote memorization of vocabulary words or multiplication tables. According to Rogers, experiential learning is self-initiated, involves the learner personally, is evaluated by the learner, and holds pervasive effects on the learner. Educators facilitate learning through five actions.

1. Establish a positive climate for learning.
2. Clarify the purpose for the learner.
3. Organize learning resources and make them available to students.
4. Balance the emotional and intellectual aspects of the learning experience.
5. Share one's thoughts and feelings with students without dominating their learning experience.

Rogers emphasizes that significant learning occurs when students confront genuine social, practical, personal, or research problems. Students should have some control over the learning process, be the primary evaluators of their own learning, assess their own progress and success, learn how to learn, and develop openness to change.

Applying experiential learning theory to teaching can increase student engagement, producing better learning experiences and linking theory to practical application. However, experiences alone do not automatically result in lasting learning. The Association for Experiential Education defines experiential education as "Challenge and experience followed by reflection, leading to learning and growth." Its "Principles of Practice"[18] apply in and beyond higher education.

- *Experiential learning occurs when carefully chosen experiences are supported by reflection, critical analysis, and synthesis.*

- *Experiences are structured to require the learner to take initiative, make decisions, and be accountable for results.*
- *Throughout the experiential learning process, the learner is actively engaged in posing questions, investigating, experimenting, being curious, solving problems, assuming responsibility, being creative, and constructing meaning.*
- *Learners are engaged intellectually, emotionally, socially, soulfully, and/or physically. This involvement produces a perception that the learning task is authentic.*
- *The results of the learning are personal and form the basis for future experience and learning.*
- *Relationships are developed and nurtured: learner to self, learner to others, and learner to the world at large.*
- *The educator and learner may experience success, failure, adventure, risk-taking, and uncertainty because the outcomes of experience cannot totally be predicted.*
- *Opportunities are nurtured for learners and educators to explore and examine their own values.*
- *The educator's primary roles include setting suitable experiences, posing problems, setting boundaries, supporting learners, ensuring physical and emotional safety, and facilitating the learning process.*
- *The educator recognizes and encourages spontaneous opportunities for learning.*
- *Educators strive to be aware of their biases, judgments, and preconceptions and how these influence the learner.*
- *The design of the learning experience includes the possibility of learning from natural consequences, mistakes, and successes.*

The steps of experiential learning could be described as follows, following a five-question model from Northern Illinois University's Center for Innovative Teaching and Learning.[19]

1. *What Are We Doing?* Students engage in a hands-on, authentic experience with minimal direction from the professor.
2. *What Happened?* Students debrief the experience with each other and with the professor, discussing their results, observations, and reactions.
3. *What's Important?* Students process their experience to analyze what was most important, identifying emerging themes, problems, or issues and discussing how these were managed or resolved during the experience.
4. *So What?* Students connect the experience with real-world contexts or examples to identify emerging truths or applicable principles they can carry forward.
5. *Now What?* Students apply what they learned during the experience and from their analyses and reflections to new experiences or contexts. The professor might discuss how issues identified during or after the experience can be useful in other contexts and how students can develop more effective behaviors by learning from their experiences. The professor should also assist students in developing a sense of ownership for what they learned.

Experiential learning might take students and faculty beyond their normal roles and responsibilities. Therefore, clarifying these parameters can help all participants know what to expect and how to proceed.[20]

Faculty Roles	Student Roles
• Adopt a less teacher-centric role than usual. • Approach the learning experience in a positive, non-dominating way. • Identify an experience that students will find interesting and personally engaging. • Explain the purpose of the experiential learning activity to the students. • Share one's feelings and thoughts with students and identify oneself as a fellow learner throughout the experience. • Tie the course learning objectives to the experiential activity so students know what they are supposed to do and why it matters. • Provide relevant and meaningful resources to help students succeed. • Allow students to experiment and discover solutions on their own. • Balance the academic and developmental aspects of teaching through experiential learning.	• Participate actively in practical, social, and personal learning activities. • Exercise freedom and personal choice while making headway in the learning process. • Engage with challenging situations while remaining open to discovery. • Evaluate one's own progress or success in the learning process. (Self-evaluation is the primary means of assessment.) • Learn from the learning process and open oneself to change. • Become less reliant on faculty and more on fellow students. • Develop skills to investigate (research) and learn from an authentic experience. • Learn how to evaluate one's own performance objectively.

Experiential education is a significant departure from traditional lecture-based pedagogy. Most faculty and students are much more familiar with the "sage on the stage" trope of whole-class faculty-directed instruction than the "guide on the side" model found in the principles of experiential learning. Nevertheless, faculty members who want to incorporate experiential learning into their courses might find it helpful to think about this in terms of a series of questions as they work through the planning process.

1. What are the course outcomes?
2. How do these outcomes intersect with professional practice or real-world application of the course's discipline?
3. What could students do within the course parameters to engage with these professional practices or real-world applications? (externship, job shadowing, volunteering, service-learning, community-based learning)
4. How much time will be necessary to complete the experiential learning activity, and how should it be structured? (agenda, outline, schedule, calendar)

5. Will the activity take place during class, outside of class, or both?
6. What external connections or resources are available? (partners from business, government, education, nonprofit organizations, etc.)
7. Where will the activity take place? How will students travel to and from an off-campus activity site?
8. What materials, equipment, or documents (forms, worksheets, instructions) will students need to be successful in the experiential learning activity?
9. What will students do during the activity?
10. What will the professor do during the activity?
11. What permissions, clearances, or other external requirements must be met?
12. How will the professor introduce the activity and prepare students for success?
13. How will the professor conclude the activity to ensure students learn from their experience? (debriefing, discussion, analysis, reflection)
14. What will students produce to demonstrate their learning? (project, presentation, journal, essay, report)
15. How will students' learning be assessed? (faculty observations, anecdotal records, checklist, rubric)

The following table shows these questions with two simplified examples demonstrating opposite ends of the experiential learning spectrum using a Methods of Teaching Reading course in an Elementary Education program.[21]

Planning Question	One-Time Experience	Semester-Long Experience
1. What are the course outcomes?	Outcome: students can plan and facilitate small group reading instruction.	
2. How do these outcomes intersect with professional practice or real-world application of the course's discipline?	Conducting small group reading instruction is one of an elementary teacher's primary responsibilities and a crucial skill for PreK-8 educators.	
3. What could students do within the course parameters to engage with these professional practices or real-world applications? (externship, job shadowing, volunteering, service-learning, community-based learning)	Students will select a text at an appropriate reading level and plan a 20-minute small group lesson focusing on a specific Common Core reading skill. Students will be placed in groups of four and take turns teaching while the others take on the role of elementary students.	Students will work with cooperating teachers at local elementary schools to observe and practice small-group reading instruction.
4. How much time will be necessary to complete the experiential learning activity? (agenda, outline, schedule, calendar)	Three class sessions will be devoted to this activity. One class will cover instructions and text selection. Two weeks later, two students will	Students will work with the cooperating teacher for two hours per week for 12 weeks of the semester.

Planning Question	One-Time Experience	Semester-Long Experience
	present their lessons, followed by a group debriefing in each of two class sessions.	
5. Will the activity take place during class, outside of class, or both?	Students prepare their lessons outside of class and deliver practice instruction to their small groups during class.	The activity takes place in elementary schools under the supervision of cooperating teachers.
6. What external connections or resources are available? (partners from business, government, education, nonprofit organizations, etc.)	No external connections are necessary. The public library might be a good source for appropriate children's literature for lesson texts.	Cooperating teachers will be needed to accommodate all students in the course. Therefore, partnering with more than one local elementary school may be necessary.
7. Where will the activity take place? How will students travel to and from an off-campus activity site?	All activities take place on campus except for possible individual student visits to the public library.	The experiential portion of this activity takes place in the elementary school classrooms of the cooperating teachers.
8. What materials, equipment, or documents (forms, worksheets, instructions) will students need to be successful in the experiential learning activity?	• Written instructions • Lesson plan template for a small group reading lesson • Peer feedback form • Self-reflection form	• Written instructions • Lesson plans for all lessons taught during the activity • Cooperating teacher evaluation feedback form • Self-reflection form
9. What will students do during the activity?	Working in groups of four, one student will take on the teacher role and deliver instruction to the other three students, who play the role of elementary students.	Students will start the experience by observing the cooperating teacher as they work with reading groups, then transition into teaching the groups using the teacher's plans, and finally, plan and deliver their own instruction.
10. What will the professor do during the activity?	The professor will circulate between small groups as the activity is taking place.	The professor will maintain communication with cooperating teachers and will visit each student at their elementary school to observe the student teaching at least one small group reading lesson.
11. What permissions, clearances, or other external requirements must be met?	None	Students must satisfy university and school district requirements for clearance to interact with elementary

Planning Question	One-Time Experience	Semester-Long Experience
		students. (However, this is a standard requirement in elementary education programs and may have already been accomplished.)
12. How will the professor introduce the activity and prepare students for success?	The professor will deliver direct instruction in teaching small group reading lessons and will thoroughly explain the activity and how it will be assessed.	During the first week of class, the professor will explain this requirement, the process, and how it will be assessed. Instruction will contain lessons preparing students to understand the process of delivering small group reading instruction.
13. How will the professor conclude the activity to ensure students learn from their experience? (debriefing, discussion, analysis, reflection)	The professor will lead a debriefing discussion after each group has completed two lessons in each of two class sessions.	After students have completed their field experience, one or more class sessions will be devoted to debriefing and discussion of the experience with an emphasis on how to apply insights to students' future teaching careers.
14. What will students produce to demonstrate their learning? (project, presentation, journal, essay, report)	Students will submit their lesson plans, peer evaluations, and self-evaluations to the professor.	Students will submit their lesson plans and self-evaluations to the professor. The cooperating teacher will submit an evaluation form to the professor.
15. How will students' learning be assessed? (faculty observations, anecdotal records, checklist, rubric)	The professor will combine their observations during students' presentations with an analysis of the completed documents submitted and use a rubric to assign a grade for the activity.	The professor will combine their observations during their site visits with an analysis of the completed documents submitted and use a rubric to assign a grade for the activity.

Clearly, planning and executing a semester-long experiential learning activity involves much more work than a short-term classroom-based learning experience. In either scenario, students develop valuable insights grounded in direct participation. When extensive experiential learning is impossible or infeasible, short-term experiences can still impart direct participation, strengthening students' acquisition of course content.

* * * *

The Entire Toolbox

HIPs, Career Pathways, Linked Learning, and Experiential Education offer concrete strategies for increasing student achievement and raising persistence and graduation rates. Although none of these practices was commonplace when most faculty members were students themselves, we can recognize that they offer a more student-centered approach to teaching and learning than the "good old days" when faculty didn't care whether their students succeeded or not. Today, we know that every student matters, and their success does not matter only to them as individuals but to our institution and even to us at a personal level. We care about our students and want the best for them both when they're on our class list and after they've embarked upon their careers. Whereas educators in the 1970s had few tools at their disposal, we now have an entire toolbox of practices that can enhance students' success. Each is effective if used alone, but in combination, they can supercharge students' learning and overcome barriers that have long held students back from optimum achievement.

In the next section, we will examine some strategies for course design that can help us add these powerful strategies to our courses and programs.

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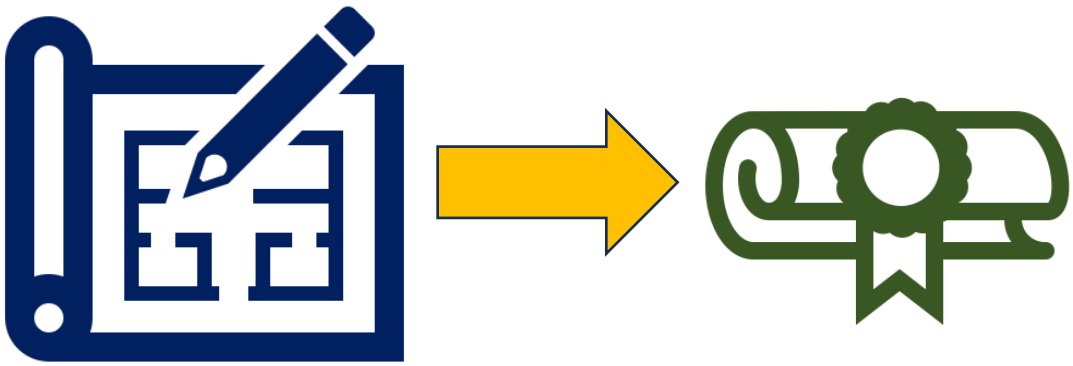


Part Four:
Designing Student Success

Central Questions:

What does it mean to design for student success?

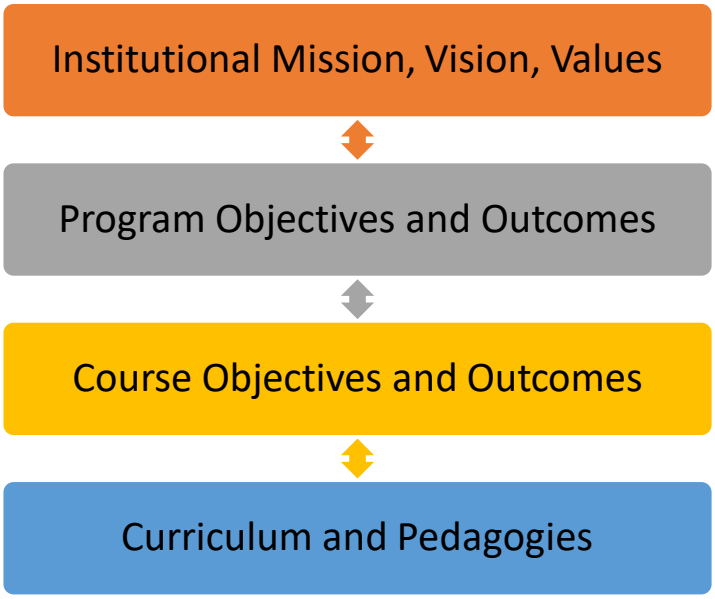
How can faculty build new strategies into their curriculum and instruction?

Designing Student Success

A high-quality education reflects sound instructional design and intentional strategies to support students' academic achievement and career success, such as those found in HIPs, TILT, Pathways, and Linked Learning. Course design that supports student success is distinguished by four descriptors.

- **Authentic**: conveys concrete concepts that align with the real-world practice of a discipline in contemporary contexts.
- **Genuine**: imparts meaningful, relevant content that holds students' interest and inspires engagement.
- **Intentional**: course elements and educator actions align instruction with the course objectives and outcomes, ensuring that every action is purposeful in supporting student learning.
- **Explicit**: all directions, requirements, communications, materials, resources, and instruction are clear and comprehensible, anticipating students' informational needs. Nothing is implied or left to chance, nor does the educator rely on their presumptions of what students should already know.

Furthermore, well-designed curricula and pedagogies align with course learning objectives and outcomes, the objectives and outcomes of the program in which the course exists, and the institution's mission, vision, and values. From top to bottom and bottom to top, everything aspect of our institutions should be connected, consistent, intentional, and instrumental. Anything that cannot be aligned or connected or anything haphazard or purposeless should be abandoned because it hinders our ability to achieve our primary purpose.



Likewise, the mandate to incorporate HIPs, Pathways, and Linked Learning cannot be superfluous to our efforts but integrated into our courses and programs seamlessly and purposefully because we know they will facilitate our goal of preparing students for fulfilling careers and successful, sustainable lives. The question is, how can we accomplish this goal?

We might consider the concept of "backward design" or "beginning with the end in mind." The following excerpt from Chapter 1 of *Higher Education by Design* might help explain this concept.

* * * *

Backward Design – Beginning With the End in Mind

In his bestseller "Seven Habits of Highly Effective People," author Stephen Covey recommends "Habit 2: Begin with the End in Mind."[1] Even though it's become somewhat cliché, this isn't just good advice for life — it's the first step towards planning and designing effective curriculum. Beginning with the end in mind is like planning an expedition: first, you choose the destination, then you plan how you'll get there.

In curriculum design, our destination depends on this question: What skills and knowledge should our students acquire by the time they graduate? Just as we can't take a road trip without first planning our route, we can't achieve the goal of producing well-educated graduates unless each course deliberately aligns with that goal, leading students step by step towards the excellence we want them to achieve. When applied to higher education, this is called "backward design."[2]

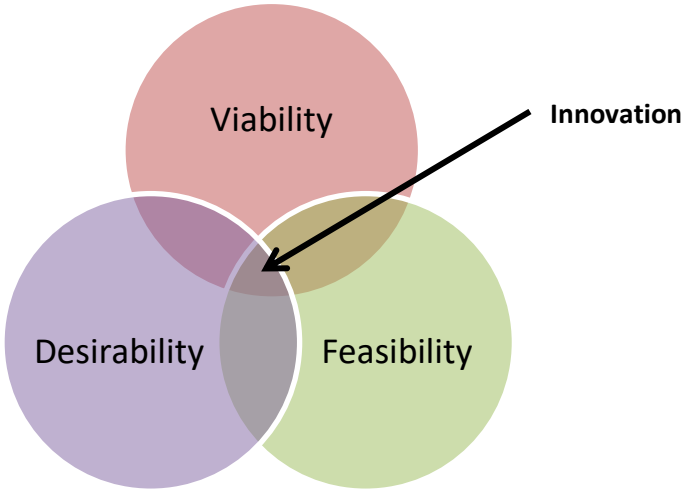
Before we go further, let's stop and consider WHY we're talking about this. In higher education, where colleges and universities have clearly defined educational missions, we want our students to do more than just memorize facts — we want them to become accomplished disciplinary practitioners who contribute to our areas of expertise and go on to lead successful, productive lives. We also want to enhance our institution's reputation for excellence in education and raise the profile of our college and its programs and departments. Therefore, the end we should keep in mind exists on multiple levels: in the outcomes we write that explain what our students must know and be able to do by the time they graduate; in the learning experiences we design that facilitate our students' successful attainment of these outcomes; and in the deepening of our knowledge of educational theory and philosophy that will allow us to improve in our instructional delivery and better fulfill our duty as educators.

. . . .

Learning-Centric Teaching and Instructional Design

Traditional approaches to teaching and learning focus on the subject-matter knowledge and expertise that an instructor conveys to his or her students. When we shift the emphasis to our students' learning, we must also enter into a mindset of innovation since we are diverging from long-established procedures and habits of mind in higher education.

Innovation exists within a three-part framework, represented in the following graphic.



Desirability is the human factor in innovation. The outcomes we seek through our teaching and curriculum design must be attractive and beneficial to our students and to the institution for which we work, but they must also be of personal benefit at some level. In other words, our efforts must lead to a course that students want to take, that our institution wants to offer, and that we want to teach.

Viability refers to the institutional framework within which our efforts occur. Our plans and goals must be compatible with the mission, vision, and values of our institutions. They must also align with existing policies, procedures, and administrative requirements in our departments, colleges, schools, and the

institution at large. For example, a planned course relying on co-teaching will not be viable if one of the cooperating faculty member's home departments cannot provide a way for the instructor to receive credit for a course taught outside normal channels.

Feasibility is the third side of our triangle. Even when we can clearly envision what we hope to achieve and can prove it fits within our given institutional context, we must also be able to bring our vision to life. This involves financial resources, administrative support, faculty participation, availability of facilities, as well as things like scheduling and registration. For instance, if an elective course designed for students majoring in a particular discipline is scheduled at the same time as a course required for the major, students cannot enroll regardless of the careful planning and preparation that went into the course's creation.

* * * *

Chapter 2 of *Pivoting Your Instruction* offers a concise overview of the Backward Design process, which has been excerpted and adapted as follows. Faculty may find this information helpful when planning to design or re-design their courses to incorporate HIPs, TILT, Pathways, and Linked Learning, along with other strategies to increase student achievement and retention.

* * * *

1. **Formulate Outcomes and Objectives**

   The "end" we should keep in mind when designing a course is what we want our students to learn, which we express through the course outcomes. Every outcome should align with or support Priority One and any other relevant institution-level outcomes, the institution's mission, or applicable institution-wide mandates or initiatives such as focusing on critical thinking, writing, or engaged learning. At the same time, our course outcomes reflect the disciplinary content we will teach, which should align with relevant accreditation standards. We might think of an outcome as the goal we're reaching towards or the destination of our journey. It's a concise statement of what we want our students to know or be able to do as the direct result of their learning in the course.

   In general, a course should have somewhere between five and nine outcomes, but this will certainly depend on your institution and your disciplinary norms. Writing good outcomes is a bit like writing poetry or creating a Tweet-sized summary of a vast amount of information – every word counts. Objectives serve as a bridge between the outcomes and our assessments. Although it should still be measurable, an outcome can be quite broad, and it might apply to more than one course within an academic program or department. Objectives are specific to the course, clarifying what students must do to demonstrate their achievement of the outcomes through the course's assessments. We might think of objectives as the action steps that lead to the outcomes or the component skills and knowledge that contribute to students' achievement

of the outcomes. In backward design, we plan the outcomes first; then, we write objectives that support them. Think back to the metaphor of the journey. If we're going to take a long road trip, we first choose our destination (the outcomes), but we also have to plan our route and schedule stopping points along the way. Those stopping points are the objectives.

Outcomes and objectives should use active verbs indicating higher-order thinking, usually aligned with Bloom's Taxonomy of Knowledge.[3] Basic knowledge exists at the lowest levels, but the highest levels demonstrate students' ability to use what they've learned. Undoubtedly, students ought to remember and understand what they're taught, but our instruction should provide them with knowledge and skills beyond mere facts, preparing students to apply their learning in new situations, evaluate information, and create something new. This is why our outcome and objective statements should use words from the higher end of the scale rather than the lower end whenever possible.

. . . .

The number of outcomes and objectives need not match, but they should correlate with each other. Every outcome should align with one or more objectives, and every objective should link to one or more outcomes. Neither should stand alone. A given outcome and objective pair may sound rather similar, but they differ in their purpose. To write good objectives, you'll need to consider what students must know or be able to do if they are to achieve the outcome and then break it down into smaller parts. Four objectives supporting the outcome of writing a paragraph could be, "Write a clear thesis statement. Support the thesis statement with evidence and explanation. Cite sources according to MLA requirements. Compose a convincing conclusion."

We should also note that when we're designing the course, the outcomes drive our decision-making processes, but when we're teaching the course, the objectives take priority so that our students can achieve the outcomes by the end of the course. In other words, we design in reverse, but we drive forward to the destination.

The last thing we should keep in mind is that each outcome and objective should be measurable. That is, we should be able to determine whether our students have achieved the objectives and the outcomes of the course. Naturally, this leads us to the topic of assessment.

2. Decide on Assessments

Assessment should never be a surprise or a mystery to students. TILT (Transparency in Learning and Teaching)[4] promotes best practices in assessment in which the instructor sets the purpose for learning, assigns a task that allows the student to develop the requisite skills or knowledge, and finally, assesses students' work based on transparent criteria provided to the student at the beginning of the learning process. TILT is highly suitable to our design premise, in which we first tell our students why they will learn something, explain how they'll learn it, and then measure

what they have learned. The better our students understand what we want, the more we empower their learning. Faculty and students both err when we fall into the trap of thinking that teaching and learning have a transactional relationship: students do the work, and instructors give them a grade in return. That misses the whole point of higher education. *Learning* is what's important, not grades. Or, to paraphrase one of my favorite professors from my undergraduate days, I like to tell my students, "You're not here for my approval. You're here to *learn*."

Assessments linked to course outcomes tend to be summative, which means they occur at the conclusion of a learning process. We're all familiar with midterm and final exams, of course, but summative assessments can be more holistic. Projects or performance tasks can measure students' learning, as can reflective essays, presentations, or creative works that demonstrate what the student knows or can do as the result of their experience in the course.

. . . .

Some back-and-forth is necessary when planning our assessments since these must also align with instruction that we haven't yet planned. Therefore, at this early stage of the course design process, we decide *how* to assess students' learning, but we might wait to write the exams or other assessments until after mapping the rest of the course.

3. Plan Instruction

This stage of the course design process is where we can utilize design thinking most fully. Let's start from the premise that you've written your course outcomes and have a good idea of how you'll assess your students' learning. We'll also assume that you've formed an accurate understanding of the students you'll teach and have developed empathy for them. Please remember, though, that empathy isn't just a point on the course design checklist. Instead, we constantly need to circle back to empathy, asking ourselves questions such as these as we try to look at our course components through a student's eyes.

- Can my students complete this task/assignment/activity within the time I've allowed?
- Are the instructions I've provided clear enough for my students to understand without my help?
- Have I provided sufficient resources so that students can do what I've asked them to do? Could I add anything else like a video tutorial, link to an external website, supplementary reading, and so on that might enhance or deepen their learning?
- What do I know about my students that might make it difficult for them to do what I've asked them to do? (For instance, if you want them to complete a project, they might need to buy materials. Some students will not be able to afford these materials. How can you meet this need? Or, how can you modify the assignment to allow for less expensive materials?)
- Will students be interested in what I'm asking them to do? Will they find it engaging and motivational?

- What potential pitfalls, drawbacks, misconceptions, or common errors can I identify that may occur during this learning activity? How can I mitigate those problems?

Make the Course Map: I begin my work as a course developer by making a grid with 17 rows and four columns. The rows allow for a header, plus one row per week of the semester. Column 1 is the week number. Column 2 is the topic for the week and planned instruction. Column 3 is for readings and out-of-class activities. Column 4 indicates assignments or assessments due that week.

Choose Textbooks and Create Reading Assignments: I also decide on textbooks at this point in the design process, and I plan the weekly topics to align with the students' reading assignments. Sometimes I want students to complete their reading before we engage with the topic in class, so they're primed to understand the lectures and classroom activities. Other times, readings supplement and reinforce what we've worked on in class. I'll set due dates for these reading assignments to clarify which of these two purposes the readings serve. I'll also explain this to students before they read because knowing the purpose for reading enhances their ability to assimilate the text's information.

I try to be careful about the number of pages I expect students to read per week. We can't assume our students will read at the same rate we do, and their unfamiliarity with the genres specific to our discipline can slow them down even further. The purpose for reading makes a difference in their reading rate, too. Reading to survey a topic goes more quickly than reading to understand the text well enough to take a quiz over the material. Reading a book published for a mass-market audience will be less challenging than comprehending an article in a professional journal packed full of dense technical language.

When we plan what we want our students to do each week, we should keep credit hour definitions in mind. The US Department of Education states that one credit hour should provide "not less than one hour of class and two hours of out-of-class student work per week over a semester."[5] Therefore, a three-hour course would require three hours of class time and six hours of work out of class, per week, for a total of nine hours. Lab and studio courses sometimes alter this ratio. For instance, NASAD (the National Association of Schools of Art and Design) recommends that students spend six hours in the studio with the instructor present and three hours working independently.[6] The rules for online courses are less specific. According to the US Department of Education, "There is no 'seat time' requirement implicit in the definition of a credit hour. An institution that is offering asynchronous online courses would need to determine the amount of student work expected in each online course to achieve the course objectives, and assign a credit hour based on at least an equivalent amount of work as represented in the definition of credit hour. (Guidance issued 3/18/2011)."[7] Based on this information, we can conclude that nine clock hours is the outer limit we can command of our students' time for any given [3-credit] course, regardless of whether it takes place in the studio,

online, or on campus. This standard helps us judge how much work we can reasonably expect our students to do.

To simplify course planning for instructors, Wake Forest University's Center for the Advancement of Teaching offers an online "Workload Estimator 2.0" tool that allows you to calculate the time required for reading assignments, writing, discussion posts, and more. (You can find it at https://cat.wfu.edu/resources/tools/estimator2/.)

Correlate Assignments and Assessments: Each week's topic and readings should be accompanied by assignments or other learning activities that allow students to practice new skills, deepen their understanding of course content, and promote their acquisition of the course outcomes. I use a model of guided instruction as I plan, which I think of as "I do, we do, you do." First, I teach the lesson (I do). Then I give students opportunities to practice and apply what they just learned while they're still in the classroom (we do). Afterward, they have further opportunities to practice by doing work independently (you do).

A simple example could be found in a mathematics course. The instructor demonstrates and explains a mathematical concept (I do). She provides practice problems to do in class, which allows her to check students' understanding and correct their errors and misconceptions (we do). Then students complete additional problems as an out-of-class assignment (you do).

We could also call this model "talk through, walk through, drive through": we talk our students through our instruction, walk them through doing a process or understanding the lesson's content in the classroom where we can help them shore up their understanding, and they drive through the process or ideas outside of class. The "we do" or "walk through" step of guided learning can also occur outside of our direct supervision. Students can complete learning activities independently, which we later review, providing feedback, and allowing opportunities for correction or revision. Whether they're done in class or independently, these types of activities are *formative*: they help students improve their learning and let us know which aspects of our instruction are working and which are not. If most of my students misinterpret the same part of the activity or get the same wrong answers on a question, it tells me they need additional instruction or clarification. Formative assignments should have a low point value in the overall grading scheme because their purpose is to be part of the learning process, not serve as a final evaluation. Alternatively (or additionally), we can allow students to re-submit their work for an improved score on formative tasks, especially if the item is worth a substantial part of the final grade.

Most instructors organize their course by dividing it into modules or units, each containing instruction, discussion, learning activities, assignments, and assessments. I keep the guided learning model in mind when considering how to distribute the content I plan to teach. The first module provides instruction and practice of the foundational skills and knowledge students will need in the course. The next module or two might include group projects or exploratory activities that build and deepen students' knowledge. Then I conclude the course with an

independent project or an assignment such as a research paper to serve as a summative assessment demonstrating students' acquisition of one or more course outcomes. This isn't a hard and fast rule, of course. Every instructor has personal preferences, and institutions vary in their requirements, too.

As we plan the course schedule, we also need to be aware of special events, scheduled breaks, holidays, and other potential complications. . . . .

This list of questions might help you organize your thinking as you work on mapping your course.

- How can I divide the content I want to teach into modules or units?
- What will I teach each week? (topics)
- How will I teach it? (lecture, demonstration, discussion, multimedia, active learning)
- How will I provide practice or opportunities for students to engage with the topic I'm teaching? (assignments or activities, in class or outside of class)
- What supplementary materials or readings will help my students learn what I'm teaching? (readings, multimedia content, handouts, study guides)
- How will I know if students have learned what I taught in this module/unit/week? (assessment: quizzes, exams, assignments, projects, presentations)

4. Gather Materials and Apply UX Design

Each item on the course map will require writing, creating, or finding a resource of some kind. Let's say that in the second week of the course, you plan to deliver a lecture during one class period, have students complete a partner activity during the other, require students to read a section of one of the course textbooks outside of class, and take a quiz through the LMS. That means you need to:

1. Create your lecture, which will vary depending on the format of the course. You might deliver the lecture live, either on campus or synchronously online, but you'll probably want to have a supporting presentation such as a PowerPoint or at least an outline to keep your remarks on track.
2. Write complete instructions for the in-class partner activity, including criteria you'll use to assess the students' work, such as a checklist or rubric, and factor the activity in the course's grading scheme.
3. Communicate which chapters of the textbook students should read and set the purpose for reading. Readings should include a means of holding students accountable, so you might ask them to write a response, post to a discussion board, or tell them to bring something to contribute to the class discussion, as a few examples. Whatever you choose, you'll need to provide written directions and grading criteria, as well.
4. Write the quiz, decide on its point value and grading criteria, and post it to the LMS, communicating this expectation to students.

Each of these elements is a mini design project of its own. No lecture, assignment, activity, or assessment exists for its sake alone – all share the instrumental purpose of promoting students' learning of the course outcomes. Therefore, everything you do must touch back to that central purpose. If you can't articulate that connection to your students, then you should seriously question whether it's worth asking them to do that activity. Our course components are like puzzle pieces. We have to design the pieces to fit together if we expect our students to assemble the puzzle.

UX (User Experience) design lets us check our work to be sure we've kept our students in mind. We'll use the phrase "learning resource" to stand in for any document or file you might build into the course, whether it's a lecture, instructions, quiz, handout, and so on.

- Useful: does the learning resource serve the purpose of supporting students' learning of the course outcomes?
- Usable: will students be able to use the learning resource effectively and efficiently by themselves?
- Findable: will students be able to find the learning resource?
- Credible: will students understand the learning resource's value within the course?
- Desirable: will students find the learning resource to be engaging, interesting, or enjoyable?
- Accessible: can students who experience learning difficulties use this learning resource successfully, and is it clear how they can access help using the item?
- Valuable: will students understand that the learning resource delivers value to their educational experience or helps them meet their career goals?

I realize it might seem incredibly cumbersome to evaluate your course's entire contents according to UX criteria. However, once you become more proficient in maintaining a student-centered mindset, these considerations will become second nature. Furthermore, uploading everything into the LMS according to standards such as Quality Matters addresses issues of findability and accessibility automatically, taking those two considerations off your plate. We can clarify usefulness and credibility when introducing a learning resource or by building explanations into our written course materials. Therefore, we're just left with usability, desirability, and value: can students use the item successfully? Will students find the item to be intrinsically valuable because they will appreciate it on its merits? And will they perceive its instrumental value to their overall education?

Faculty-centered culture leads instructors to believe we can ask our students to do whatever we want, offering no more rationale than "because I'm the instructor, and I said so." Adopting a student-centered philosophy of education motivates us to aim higher: to explain *why* students should do what we ask, tell them *how* to do what we want them to do and *how* we'll evaluate their work, and finally, communicate *what* they'll achieve or receive by doing it.

5. **Teach**

   Teaching has a way of revealing the holes in our plans, no matter how prepared we believe we are or how well we think we've designed the course. . . .If we consider that our course map and the course, as uploaded to the LMS, are our prototype, then teaching serves as the testing phase of design thinking. We're interacting with our users (the students), gathering data through these interactions, and their performance on activities, assignments, and assessments. We can examine their messages and email, seeing patterns in their questions or the problems they encounter. All of this provides valuable and actionable data that can help us make the course better the next time around.

6. **Reflect and Revise**

   Teaching naturally provides opportunities for reflection when we grade our students' work or analyze their scores on exams.

   - Where did they make mistakes? Errors reveal areas where additional instruction could be helpful.
   - Where did they all succeed with ease? We might choose to increase the rigor or difficulty here so that the activity provides a more appropriate level of challenge.

   We can gather additional information through informal discussions with students or by administering a survey.

   - Did your students comment on any particular aspects of the course?
   - What did they like? What did they dislike?
   - Was the workload appropriate? If it was too heavy, what could you reduce or eliminate? If too light, what could you add?
   - What could you do differently to make the course better?

   Reflecting on these answers leads to revision, refining our prototype before we teach the course again. Think about it: the word "revise" means "to look again." When we pause to look at our course again, we see opportunities to improve.

7. **Repeat**

   After you've taught the course three times or so, you'll probably have worked out most of the glitches or rough spots. Nevertheless, that doesn't mean you can go on autopilot and stop paying attention. We always have opportunities to improve and refine our teaching and curriculum.

   By becoming thoughtful, empathetic, and reflective educators, we demonstrate a growth mindset. Each of us can improve our teaching practice, and no curriculum is "perfect," at least, not forever. . . . As thoughtful, reflective, and student-centered educators, we can remain flexible in our approach to teaching, being willing to make changes even to the parts of our

courses we value the most if it becomes apparent that they aren't as effective as we'd believed them to be or when external forces mandate change.

* * * *

Additional Strategies to Support Student Success

As we design or re-design our courses to maximize student success, we may want to consider a few additional strategies to ensure that our courses and programs are authentic, genuine, intentional, and explicit. Instructional strategies that incorporate active learning, elements of universal design to support all learners, and new tools for curricular planning, such as AI (artificial intelligence), can all facilitate proficient course design.

The Learnings

Faculty and students are familiar with lecture-based instruction because it has been ubiquitous in higher education for centuries. However, lecturing is not the most effective instructional methodology.[8] Active learning and related practices can increase students' engagement in the learning process, support their achievement of course objectives and outcomes, and increase retention by allowing students to perceive the meaning and relevance of the course content.

Active Learning: Engaging students in hands-on participation in the course topic using strategies such as small group discussion, instant response technologies, short in-class practice papers or problem sets, role-playing, problem-based and project-based learning, case studies, etc.

Applied Learning: Incorporating real-world scenarios and experiences into regular instruction to help students connect classroom learning to its professional application.

Collaborative Projects: Project-based classroom activities designed to deepen students' learning of course content and develop skills in teamwork, collaboration, critical thinking, creative problem-solving, and communication. (Also a High-Impact Practice and one of the Big Six)

Experiential Learning: integrating hands-on activities that afford opportunities for direct engagement with the topic of study, discovery, and genuine application of classroom learning within a real-world context, usually conducted in authentic settings or workplaces. Also includes internships, practicum, clinicals, fieldwork, co-operative education (co-op), study abroad, service-learning, community-based learning, volunteering, etc. (Also a High-Impact Practice and one of the Big Six)

Guided Learning: providing direct support during instruction to assist students in applying knowledge, acquiring skills, or mastering processes.

Linked Learning: drawing explicit connections between course content and real-world applications, especially those related to professional practice in real-world settings; providing real-world experiences

connected to the course content (also known as Career-Connected Curriculum; aligned with the Eight Key Elements of HIPs and the Big Six)

Universal Design

Students with learning disabilities often struggle with "executive functioning," which governs cognitive processes involving the ability to prioritize work, organize materials, identify tasks to be completed, create a schedule for completing work by specified due dates, and so on. Without these skills, students may struggle academically. Importantly, many individuals experience difficulty in these areas, not just those with an identified learning disability. Central Michigan University's Office of Curriculum and Instructional Support[19] recommends incorporating the following strategies into every course because what's good for some students can enhance all students' achievement – a practice known as Universal Design.[20]

1. Provide a detailed course map that includes all learning activities, a semester schedule with due dates, weekly task reminders, links to helpful resources, grading criteria, and other relevant information.
2. Keep all materials simple and straightforward, avoiding visual clutter, using basic fonts, and using features such as colorful text, highlighting, bold, or italics sparingly.
3. Create summaries of important course content with bullet points of key takeaways to help students understand what they must learn and how it connects to the course objectives and outcomes.
4. Ensure that all course materials and instructions are clear and concise. Avoid making assumptions about students' prior knowledge or their capacity to infer your intended meaning. Clearly define what students must do, how they must do it, when it must be done, and how their work will be assessed.
5. Divide high-stakes learning activities into smaller tasks and provide constructive feedback at important points. This strategy increases students' motivation to persist in the activity, recognizes their hard work along the way, and provides opportunities to make changes before it's too late to improve their work.
6. Incorporate a variety of graded activities throughout the course, allowing students to demonstrate their learning in multiple ways. Traditional exams may not offer the best reflection of some students' learning, especially those who find timed exams to be stressful. Offering alternatives or incorporating a variety of assessments gives all students a better chance to showcase what they have learned in the course.
7. Recognize that some students need more time to process information ("think time") or complete their work than others. Emphasizing quality over quantity can be helpful, as can

[19] https://www.cmich.edu/offices-departments/curriculum-instructional-support/explore-teaching-and-learning/select-or-develop-materials-and-tools/learner-centered-course-design

[20] Burgstahler, S. (2013). Universal design in higher education: Promising practices. *DO-IT, University of Washington. Recuperado a partir de www. uw. edu/doit/UDHE-promising-practices/resources. html*.

reducing the number of tasks certain students must complete, extending deadlines, allowing additional time to complete an exam, and so on.

8. Stock the course with as many resources as possible, including content summaries, study guides, links to supplementary instructional videos, tutorials for common processes (adding narration to a PowerPoint presentation, for example), and information about campus support services. If one student could benefit from a resource, sharing it with all students might meet other students' undetected needs. For instance, a student with a hearing disability would benefit from a written transcript of an online lecture. Posting the transcript online for all students creates a useful study guide for the lecture that other students might want to utilize.
9. Understand that students may be hesitant to advocate for themselves, or they may not realize that their differences as a learner are impacting their success in the course. Be vigilant in monitoring students' performance in the course, reaching out whenever problems first become apparent. Gentle offers of help, friendly reminders about missed due dates, and invitations to speak with the professor before or after class can go a long way to building trust and encouraging students to ask for the help they need.

Artificial Intelligence (AI) for Course Design

Although faculty don't welcome the possibility of students using newer AI technologies to complete written assignments, we can harness this technology to help us in designing or re-designing our courses. One such source is Bard, an AI tool offered by Google. AI can be especially useful when trying to formulate simple explanations of concepts we want to convey to students. For example, TILT and other principles of good instruction point to providing students with an explanation of why the course or its discipline helps prepare students for career success. Let's imagine a mathematics professor who wants to use this tool to help generate content for their first-day presentation. The professor could:

1. Go to Bard at https://bard.google.com/. (No Google account is required.)
2. Type this prompt into the textbox: "How can learning in the discipline of MATH prepare a student for career success?"
3. An instant later, something like the following would appear:

   Math is a versatile subject that can be applied to many different fields. Learning math can help you develop a variety of skills that are essential for career success, including:

   1. ***Critical thinking and problem-solving:*** *Math teaches you how to break down problems into smaller, more manageable steps and how to come up with logical solutions. These skills are essential for success in any field, but they are especially important in fields like engineering, science, and business.*

   2. ***Data analysis:*** *Math helps you understand and interpret data. This is a valuable skill in today's data-driven world, where businesses and organizations are constantly collecting and analyzing data.*

3. ***Communication:*** *Math requires you to communicate your ideas clearly and concisely. This is an important skill for any job, but it is especially important in fields like teaching and consulting.*

4. ***Creativity:*** *Math can help you think outside the box and come up with new and innovative solutions to problems. This is a valuable skill in any field, but it is especially important in fields like design and engineering.*

5. ***Attention to detail:*** *Math requires you to be precise and accurate. This is an important skill for any job, but it is especially important in fields like accounting and engineering.*

In addition to these specific skills, learning math can also help you develop general skills that are important for career success, such as:

- ***Logic:*** *Math teaches you how to think logically and make sound arguments.*
- ***Abstract thinking:*** *Math requires you to think abstractly and visualize problems.*
- ***Problem-solving:*** *Math teaches you how to solve problems in a systematic and efficient way.*
- ***Resilience:*** *Math can help you develop the resilience to overcome challenges and setbacks.*

Overall, learning math can be an asset for anyone who wants to be successful in their career. By developing the skills and abilities that math can teach you, you will be well-prepared for a variety of career opportunities.

Obviously, the AI text would need further editing and personalization to be appropriate for use with students, but it is quite useful in providing a foundation upon which to build instruction. The most important point to remember is that we need to teach our students – explicitly – why each course is important to them, personally. Tying course content to the distinctive methodologies and epistemologies of the discipline and explaining how the course will help students attain specific competencies, fluencies, literacies, or skills they can employ in their subsequent studies, lives, or careers gives them the purpose behind what we ask them to do, increasing their persistence and motivation. Students don't learn just because we know more than they do. They learn when we show them that what we're teaching is worth knowing.

Ten Steps to Designing for Student Success

1. Identify the course outcomes and objectives.
2. Consider the course content, looking for areas where any of the following could be inserted alone or in combination:
    - Collaborative assignments or projects

- Experiential learning (internships, externships, service-learning, community-based learning)
- Direct participation in research or creative practice
- Experiences with diversity
- Writing intensives with periodic feedback to improve performance
- A culminating experience that includes reflection on students' learning and a public demonstration of accomplishment

3. Make arrangements with any external partners necessary to incorporate the strategies selected (e.g., a community group willing to host students who are fulfilling a service learning requirement).
4. Determine how to assess the student learning that will occur through these new course elements.
5. Develop materials to support each learning activity, including directions, grading criteria, and helpful resources, anticipating and addressing potential areas of difficulty.
6. Plan instruction to be delivered in advance of each assignment to explain everything students must do and how they must do it, success criteria, and grading expectations.
7. Incorporate first-day instruction that will:
    - Explain the course objectives and outcomes
    - Connect course activities to the objectives and outcomes
    - Provide the course's purpose and explain its relevance to students' future learning, lives, and careers.
8. Create a course map that aligns each week's planned instruction with learning activities, assignments, assessments, materials, and resources.
9. Review the course map to ensure that the student workload is reasonable (use https://cat.wfu.edu/resources/workload2/)
10. Gather anecdotal records while teaching the course, looking for areas that could be improved before teaching it the next time.

Designed for Student Success – An Example

By incorporating best practices into instruction, we become best practitioners. The following course map for a First Year Seminar course titled "Wicked Problems" incorporates these strategies.

HIPs Elements

- The course itself is a HIP because it is a First Year Seminar.
- The most important assignment in the course is a collaborative project, which requires students to work together to achieve success.
- Project presentations are a public demonstration of competence, similar to capstone experiences.
- The project includes opportunities to experience diversity by working in a group with others unlike oneself.

- The project exposes students to elements of service-learning or community-based learning as they explore local or regional efforts to address food insecurity (the wicked problem at the center of the course).
- The course includes opportunities for students to reflect on their learning (one of the Eight Key Elements of HIPs), incorporated into the midterm, final, discussion questions, and Project Task 4 (self-evaluation).

TILT Elements

TILT helps to ensure that each assignment or assessment is aligned with the course objectives and outcomes, authentic, intentional, and explicit. TILT is also an epistemological approach because it considers how students will gain the intended skills and knowledge, what they are being asked to learn, and why they are being asked to learn it.

The course materials are provided in full, beginning on the first day students have access to the online classroom. These materials include (and are provided on this course map):

- A table linking Learning Outcomes, Learning Objectives, Instruction, and Assessment showing students exactly what they will learn, when they will learn it, how it will be taught, and how it will be assessed.
- Project instructions with linked resources, schedule, and grading criteria.
- Clear expectations for online discussions and weekly student responsibilities. (Discussion questions are provided as a separate document in addition to being posted in the online classroom.)

Linked Learning Elements

Linked learning connects classroom instruction to real-world contexts, students' lives, and future careers. It helps to ensure that instruction is authentic, genuine, intentional, and explicit, making it meaningful and relevant for students. This increases student engagement because students understand the purpose and applicability of what they are being asked to learn.

The following strategies embed linked learning throughout the course.

- Weekly online lectures include practical applications to students' lives or future careers because each lecture focuses on practical skills.
- Weekly online discussion questions focus on students' assigned reading of texts selected to impart essential skills in critical thinking, developing grit and a growth mindset, and the principles of positive psychology.
- The course project's real-world context (food insecurity) makes it relevant and meaningful to all students, whether they have experienced food insecurity, know someone who has, or are being exposed for the first time to the struggles of people in their community who do not know where their next meal is coming from. The problem is not distant or abstract – it's right there in their own backyard, and the project involves students in designing solutions to address it.

Wicked Problems Course Design Elements Summary

The entire course is built around fostering student success. Each component is authentic, not abstract or esoteric. Students are asked to learn skills and information that will genuinely benefit them in their future studies and eventual careers. All course elements are intentionally crafted to support student learning. All course materials are clear, explicit, and straightforward, minimizing the chance of misunderstanding or misinterpretation. Nothing is assumed, implied, unspoken, mysterious, or left to chance.

Course Map – Wicked Problems FYS

FYS Learning Outcomes

1. Students can describe one or more contemporary and enduring questions about their lives and their relationships to human cultures or the physical and natural world.
2. Students can analyze and reflect on the intellectual and practical skills of the course's theme or topic.
3. Students can summarize the benefits and challenges of a diverse society.
4. Students can identify and evaluate linkages among academic disciplines.

[*Note: Color-coded highlighting on the schedule draws students' attention to graded items. Blue indicates discussions, green is used for exams, yellow for live meetings, and pink for the course project*.]

Week #	Day 1	Day 2	Readings	Resources, Assignments, and Assessments
1	Syllabus Day: Relevancy of Higher Education Getting to Know You	Skill Lesson: Belonging/Finding Your Place	Read "The Miniature Guide to Critical Thinking: Concepts and Tools" [48 pgs..]	Syllabus SR1 Success Tips (student success guide) Online Self-Intro (post a video)
2	Skill Lesson: Study Skills and Time Management	What Are Wicked Problems?	Read "Mindset" p. 1-41 [40 pgs.]	SR2 Wicked Problems Mindset Discussion 1
3	Skill Lesson: Critical Thinking	Wicked Problems and Systems Thinking	Read "Mindset" p. 41-81 [40 pgs.]	SR3 Critical Thinking, Computational Thinking, and Systems Thinking Mindset Discussion 2
4	Skill Lesson: Creative Thinking	Introduce **course project**: Food Insecurity as a Wicked Problem. Divide into groups.	Read "Mindset" Ch. 6 p. 147-175 [27 pgs.]	SR4 SCAMPER Course Project Outline Mindset Discussion 3
5	Skill Lesson: Design Thinking	LIVE MEETING to clarify the project expectations and answer questions. Groups discuss their case study and plan their research (via Google Meet)	Read "Mindset" Ch. 8 p. 223-264 [41 pgs.]	SR5 Design Thinking [no Discussion due to live meeting]
6	Skill Lesson: Growth Mindset	Groups search for information about their case study	Read "Grit" Ch. 1-3 p. 1-51 [50 pgs.]	SR6 Growth Mindset Grit Discussion 1
7	Skill Lesson: Information Literacy	Groups contact a local agency, organization, or individual similar to	Read "Grit" Ch. 4-5 p. 53 - 91 [38 pgs]	SR7 Information Literacy Preview Midterm essay question Grit Discussion 2

		that of their case study.		
8	Skill Lesson: Knowledge and Use of Resources	**Midterm Quiz** – 20 multiple choice questions and reflective essay question	Read "Grit" Ch. 6-7 p. 93 – 141 [48 pgs.]	SR8 Finding and Using Resources [no discussion due to Midterm]
9	Skill Lesson: Metacognition/Reflection	Groups brainstorm and prototype	Read "Grit" Ch. 8-9 p. 143-195- [52 pgs.]	SR9 Metacognition/Reflection Grit Discussion 3
10	Skill Lesson: Grit	LIVE MEETING to check on project progress. Groups begin working on presentation.	Watch Shawn Achor's TED talk. Read "The Happiness Advantage" p. 1-35 [34 pgs.]	SR10 Grit [no Discussion due to live meeting]
11	Skill Lesson: Communication	Groups continue working on presentation	Read "The Happiness Advantage" p. 37-85 [48 pgs.]	SR11 Communication Happiness Discussion 1
12	Skill Lesson: Confidence	Groups finalize presentation	Read "The Happiness Advantage" p. 87-143 [56 pgs.]	SR 12 Confidence Happiness Discussion 2
13	Skill Lesson: Work Ethic	Group presentations Part 1	Read "The Happiness Advantage" p.145-210 [65 pgs.]	SR13 Work Ethic Discussion – Peer Review of Presentations
14	Skill Lesson: Collaboration	Group presentations Part 2	-----	SR14 Collaboration Discussion – Peer Review of Presentations Self-Evaluation due
15	Skill Lesson: Perseverance and Resilience	LIVE MEETING to debrief and wrap up the course	-----	SR15 Perseverance and Resilience SR 16 Seven Principles of Happiness Preview Final performance task and essay question [no Discussion due to live meeting] Weekly Project Journal due
16	FINALS	**Final Exam** – 30 multiple choice questions, 40 point performance task, and 30 point essay	-----	-----

Required Reading List

- Achor, S. (2010). *The Happiness Advantage*. New York: Crown Business
- Duckworth, A. (2016). *Grit: The Power of Passion and Perseverance*. New York: Scribner
- Dweck, C. (2016). *Mindset: The New Psychology of Success*. New York: Random House
- Elder, L. and Paul, R. (2020). *The Miniature Guide to Critical Thinking Concepts and Tools*. Lanham, MD: The Rowman & Littlefield Publishing Group, Inc.

Assessments and Activities	Grade	
Pre-Course Survey	Not graded	0
Weekly Quick-Check (to follow lecture) – 3-question online quiz to check for understanding of lecture	3 points each x 15 weeks	45
Book Discussion to check for understanding of readings and promote student interaction Post = 15 points Peer Responses = 10 points/each (varies by book)	Self-Intro/Critical Thinking = 25 (15/10) Mindset = 45 (15/30) Grit = 45 (15/30) Happiness = 35 (15/20)	150
Group Project	(See instructions for point distribution.)	155
Midterm Quiz	20 multiple choice + essay (30 points)	50
Final Exam	30 objective questions + performance task (40 points) + essay (30 points)	100
Post-Course Survey	Not graded	0
TOTAL		500

Required Technology

- Computer capable of capturing and broadcasting video, images, and sound
- Reliable internet service
- Office 365 for Education (We will need Microsoft Teams, PowerPoint, and Word.)

Weekly Responsibilities

- Monday: Read/watch lecture(s)
- Monday to Thursday: Read assigned text
- Thursday: Answer discussion question (if assigned that week)
- No later than Sunday:
    - Complete 3-Question Quiz
    - Respond to 1 peer in the discussion
    - Complete weekly project journal entry (Weeks 5-14)
- Project Activities (Weeks 5-14) as determined by group

Book Discussions

- Students will answer a question and respond to peers in each of our four book discussions.
    - Responses must be 150-200 words or 1-2 minutes of video or audio recording.
    - Responses must directly address the question and not include any filler.
        - We already know who you are – do not introduce yourself.
        - We know which book and which question you're addressing – do not take the time to tell us this.

        - Post a concise, thorough, thoughtful answer to the question and state the page numbers of any quote or key points.
- The instructor will assign you a question to answer. Be sure to answer your appointed question in the correct week.
- Students will respond to one peer each week.
    - For full credit, your peer response must be 150-200 words or 1-2 minutes of video or audio recording.
    - Respond to peers who have received two or fewer comments. Do not respond to peers who already have three or more comments.
    - Peer responses should follow this format:
        - With what did you agree or disagree in your peer's post?
        - Why did you agree or disagree? Offer a substantive reason, explanation, or counterpoint.
        - Make a personal connection, ask a question, or offer a suggestion.

Assessment of Learning Outcomes

Learning Outcomes	Learning Objectives	Instruction / Assessment
1. Students can describe one or more contemporary and enduring questions about their lives and their relationships to human cultures or the physical and natural world.	Students will explore their own relationship to the world by means of an investigation of wicked problems conducted through a collaborative group project.	Lectures 1, 2, 5 Experiences during group project Assessed in essay question in final exam and in weekly project journal entries
2. Students can analyze and reflect on the intellectual and practical skills of the course's theme or topic.	Students will develop competencies, fluencies, literacies, and skills for lifelong learning. Students will reflect, analyze, and apply intellectual and practical skills and competencies supportive of present and future academic and professional success.	*Every* weekly lecture addresses practical and intellectual skills Assessed in Midterm and Final - both include reflective components and object questions about these practical skills
3. Students can summarize the benefits and challenges of a diverse society.	Students will engage with diverse groups and populations affected by the project's topic and address their needs through the proposed solution to a wicked problem.	Lecture 2 and 3 Wicked Problem project engages students in diverse groups and in considering the needs of diverse populations affected by the problem. Assessed in questions embedded in weekly project journals.
4. Students can identify and evaluate linkages among academic disciplines.	Students will identify and evaluate information from a variety of sources and apply it in practical and theoretical contexts.	Wicked Problem project research asks students to evaluate interdisciplinary sources (health, society, economics, etc.) and apply creative design and ideation to generate a possible solution. Assessed in weekly journal project entries and in the project

Wicked Problem Project: Food Insecurity

Instructor

- Set up a GroupMe group to communicate with students about the project via text message. Send out regular reminders [https://groupme.com/en-US/]
- Divide students into heterogeneous groups of 4. Assign each group one of the Kansas City case studies from https://costoffoodinsecurity.com/Docs/Food_Insecurity_Case_Study_2017.pdf
- Check-in with each group weekly during their team meeting.

Student Groups

- Student groups must meet weekly via Microsoft Teams or other video conferencing software.
    - https://www.youtube.com/watch?v=Yn0WtuiPOIU
    - https://www.youtube.com/watch?v=oEtOcXdOUNk
- Groups should establish their own GroupMe text messaging group https://groupme.com/en-US/ or use the messaging or chat components in Microsoft Teams. (Include the instructor in your group.)
- Groups will hold weekly live meetings via Microsoft Teams. Each should submit their meeting schedule to the instructor and invite the instructor to each meeting.
- **Meeting 1 (Week 5)**
    - Students read their section of the PDF together.
    - Discuss the case:
        - Identify solutions used in the case, individuals involved, strategies, materials, equipment, processes, etc.
        - Research the organization in the case study. Look them up online. Study what they do, whom they serve, and how they do their work.
        - Discuss: What do you think works best for the organization in the case study? What would you want to copy? What would you want to change?
    - Students conduct research by reading the following articles prior to the next group meeting (Groups may decide that all members will read all of the articles, or they may decide to divide the articles among group members and report back.) PDFs of the articles will be posted to the online classroom:
        - https://www.feedingamerica.org/hunger-in-america/impact-of-hunger
        - https://frac.org/wp-content/uploads/hunger-health-impact-poverty-food-insecurity-health-well-being.pdf
        - https://frac.org/wp-content/uploads/frac_brief_understanding_the_connections.pdf
        - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4584410/
- **Meeting 2 (Week 6)**
    - Students discuss their reading using these key questions:
        - What is the difference between hunger and food insecurity?
        - What programs and services presently exist?
        - How/when have you personally been affected by this problem? Explain.
        - Why are people who are impoverished or food-insecure also obese?
        - Who is responsible for solving this problem? The government (local, county, state, national)? Private philanthropy (ex: church food pantries; nonprofit organizations)? Combined efforts?

- Students begin to conduct research into local nonprofit or government agencies that intersect with clients in poverty who also experience food insecurity. Include farmer's markets and farmers, grocery stores, food distributors.
    - https://www.foodpantries.org/ci/ga-valdosta
    - https://dfcs.georgia.gov/locations/lowndes-county
    - https://unitedwayvaldosta.org/about-us/
    - Also consider original alternatives. For instance, https://cookingmatters.org/sites/default/files/CMYC.pdf explains how to set up programs for teaching how to cook healthy meals with fresh fruits and veggies.
    - https://www.vox.com/2014/6/25/5835408/meet-the-woman-giving-away-a-free-cookbook-written-for-snap-recipients
    - Before the next meeting, each group member will contact a different person, group, organization, or agency individuals at agency. Explain your research project and ask if you could meet with them to discuss the project. (see templates for sample email and sample script for a phone call)
- **Meeting 3 (Week 7)**
    - Share results of contacts with group.
    - Discuss how this information informs their task of applying the case study (inspirations or cautionary information) to the local population
    - Before the next meeting, each person will brainstorm at least five ideas and possible solutions.
- **Meeting 4 (Week 8)**
    - Group members share their solutions. Together, narrow to the top 3 ideas. Choose one as the project idea.
    - Before the next meeting, each person will sketch out an idea for prototyping the solution.
- **Meeting 5 (Week 9)**
    - Group members share their ideas. Choose one to apply to your final project.
    - Divide tasks for planning the project. Possible questions include:
        - How will we share the work equitably?
        - What additional information do we need?
        - Who will find that information? How will you do this?
        - Who will write an outline for the project?
        - Who will create visuals for the presentation?
        - How will we create our presentation?
        - Who will coordinate the efforts of all the group members and monitor progress?
    - Group members work on their designated tasks
- **Meetings 6, 7, 8 (Weeks 10, 11, 12)**
    - Group members continue working on the project and finalize it.
    - Post project to the LMS as a video file or as a link to YouTube. Be sure to include an acknowledgement of which tasks each group member performed in the completion of the project. (Example: insert "credits" at the end of the presentation similar to the credits at the end of a movie)
    - Post final project by the last day of Week 12.
    - Groups need not meet after Week 12 or once the project is posted.

Individual Students

- Task 1: Group Project. Active and engaged participation in all project components is expected. *(Note: All members of the group will receive the same grade for the project, subject to adjustments made by the instructor in response to feedback received by group members. (i.e. if all other group members report in Task 4: Self-Evaluation that a particular student did not meet expectations or perform a fair share of the work, that student's grade for Task 1 would be reduced accordingly.)*
- Task 2: Peer Feedback. View all other groups' projects. Post feedback (using the specified prompts) on at least two groups' work, one per week.
- Task 3: Project Journal. Complete a weekly entry in the project journal, responding to the questions posed by the instructor. Written or video responses are acceptable, so long as they include thorough and thoughtful answers. Journals are private – only the student and the instructor will read these entries. You will post one entry in each of Weeks 5-14. Criteria for responses will be embedded in the weekly prompt.
- Task 4: Self-Evaluation. Complete the self-evaluation form in the LMS. *(Note: this will appear to be a quiz with qualitative response options.)*

Project Schedule

	Individual Responsibilities (due prior to weekly group meeting)	**Group Meeting Activities**
Task 1.1 (Wk 5)	Read case study before meeting as a group	Schedule live weekly meetings (submit schedule to instructor) Discuss assigned case study. Establish group expectations.
Task1.2 (Wk 6)	Conduct research aligned with group expectations	Report findings to group. Discuss findings. Make a plan for making direct contact with relevant local partners (organizations, agencies, individuals…) for more information.
Task 1.3 (Wk 7)	Make assigned contacts, record results.	Share results of contacts with group. Discuss how this information informs their task of applying the case study to a local population.
Task 1.4 (Wk 8)	Brainstorm at least five possible solutions	Share brainstormed solutions as a team. Narrow to top three possibilities. Discuss. Select one.
Task 1.5 (Wk 9)	Sketch out ideas for prototyping the solution	Discuss individual ideas. Divide tasks among group members
Task 1.6 (Wk 10-12)	Work on assigned project components	Groups meet weekly to discuss progress.
Task 1.7 (Wk 13-14)	Prepare for own role in project presentation	Groups prepare and post/present their work as scheduled.
Task 2 (Wk 13-14)	View and provide feedback on other groups' presentations	-----
Task 3 (Wk 15)	Complete last Project Journal entry	-----
Task 4 (Wk 15)	Complete and submit Self-Evaluation	-----

Grading Criteria

Project Component	Points possible

Task 1 – Group Project
• Discussion of preliminary research activities (10)
• Evidence of effective group dynamics (10)
• Project Quality (50)
  ◦ Originality of solution
  ◦ Feasibility of solution
  ◦ Presentation quality: sound, images, text, clarity
• Technical specifications: formatting, punctuality (5)
	75

Task 2 – View and provide feedback on at least two other groups' projects	10
Task 3 – Project Journal • 10 weekly entries using the form provided. (5 points each) • Compile and submit by the specified due date.	50

Task 4 – Self-evaluation
(complete online form – set up in online classroom as a quiz)
• Reflect on one's own participation in the project
  ◦ Describe the role you played within the group
  ◦ Quantify your contribution to the entire project
• Note teammates' participation: who acted as the leader? How were tasks shared? Rate the level to which each teammate did/did not meet expectations.
	20

TOTAL	155

[1] Covey, S. (1989, 2016). *The Seven Habits of Highly Effective People, Habit 2: Begin with the End in Mind*. Franklin Covey. https://www.stephencovey.com/7habits/7habits-habit2.php

[2] McTighe, J., & Thomas, R.S. (2003). Backward design for forward action. *Educational Leadership, 60(5)*, 52–55. McTighe, J., & Wiggins, G. (2004). *Understanding by design: Professional development workbook.* Alexandria, VA: Association for Supervision & Curriculum Development.

[3] Anderson, L., and Kranthwohl, D. (2000). *A Taxonomy for Learning, Teaching and Assessing: A Revision of Bloom's Taxonomy and Educational Objectives, Complete Edition*. Pearson.

[4] TILT Higher Ed. (2020). https://tilthighered.com/

[5] US Department of Education. (2009). Program Integrity Questions and Answers. Credit Hour. https://www2.ed.gov/policy/highered/reg/hearulemaking/2009/credit.html

[6] NASAD Handbook (2019-2020). Section III.A.2.a.(1)

[7] ibid

[8] Deslauriers, L., McCarty, L. S., Miller, K., Callaghan, K., & Kestin, G. (2019). Measuring actual learning versus feeling of learning in response to being actively engaged in the classroom. *Proceedings of the National Academy of Sciences*, *116*(39), 19251-19257.

Conclusion: Keeping Our Promises

The promise of higher education rests in the opportunity to achieve a fulfilling career, enhanced earning potential, improved social mobility, and a better quality of life for oneself and one's family.[1] When our efforts lead only to retention or commencement, we have not fulfilled this promise. Our graduates may have a diploma in hand, but until they succeed in finding meaningful employment paying a living wage, they cannot access the benefits associated with their educational attainment.

Until tuition-free higher education for all students becomes a reality someday, we cannot ignore its connection to students' economic futures. Today's students invest their time and money because they believe they will reap the rewards associated with degree attainment, specifically by securing better jobs than they could achieve with only a high school education. The more graduates we produce who do not successfully transition from college to career, the more damage is done to our institutions' reputations and our futures as higher education professionals. Moreover, students who do not finish their degree programs face the world worse off than they would have been if they'd never begun because they are now saddled with the burden of student loan debt without the potential benefits of having earned a degree. Instead, we have a moral imperative to fulfil the promise of higher education by doing whatever is necessary to support our students' success. High-Impact Practices and the other strategies we've discussed help us to meet every student where they are, equip them for academic success, and prepare them for the careers they hope to pursue.

We must remember that although the intrinsic value of an education may be greater than its instrumental purpose, few people are willing or able to spend $30,000 or more to obtain an education for its own sake. In fact, we promote the economic value of choosing to attain a degree because college graduates typically achieve higher lifetime earnings than individuals with a high school education alone. According to the Social Security Administration:[2]

> *Men with bachelor's degrees earn approximately $900,000 more in median lifetime earnings than high school graduates. Women with bachelor's degrees earn $630,000 more. Men with graduate degrees earn $1.5 million more in median lifetime earnings than high school graduates. Women with graduate degrees earn $1.1 million more.*

We should temper this statement by noting that investing $30,000 in an S&P index fund and leaving it alone for 30 years will likely yield over $500,000 in dividends.[3] Young adults can find paths to a better life requiring less time, effort, or financial investment than college can provide, reducing the perception of value associated with a degree. Parents warn their children that they should earn a degree because they don't want to be trash collectors or work at a fast-food restaurant, but that argument is invalidated upon learning that the average annual salary for waste management jobs is $42,000[4] and restaurants

like McDonald's offer pathways for employees to advance into managerial positions paying over $52,000.[5] The median pay for electricians and plumbers is approximately $60,000 per year,[21] [22]with no degree required.

Moreover, the laissez-faire attitude that institutions of higher learning (and educators) have maintained toward their students' success cannot withstand increasing public scrutiny of our practices, especially our habit of recruiting students with the promise of qualifying for higher-wage jobs while delivering instruction focused only on disciplinary content for its own sake. We know why we require students to complete general education courses, but do we consistently tell our students why these courses are important, how they can apply their learning outside the classroom, and what it will help them achieve? Do we help students make connections between the classroom and the workplace or to their lives after graduation, not just in courses required for some majors, but in every course? Students will not necessarily make these connections unless we make them explicit. They will not infer that a course is valuable or relevant simply because it is required and are unlikely to connect their learning to its real-world application unless we explain it clearly.

Every academic discipline can lead to viable, valuable, rewarding careers. As higher education professionals, we have a solemn responsibility to assist ***all*** students in achieving their dreams by infusing our programs and curriculum with High-Impact Practices, creating pathways to professional attainment and accomplishment, and supercharging our teaching through linked learning and experiential education. In doing so, we renew our commitment to the promise of higher education, supporting the continuing value of our institutions to our students, our nation, and our world.

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[1] Pulsipher, S. (May 13, 2019). Can Data Tell if Higher Education is Delivering on its Promise? Gallup. https://www.gallup.com/education/251654/data-tell-higher-delivering-promise.aspx

[2] https://www.ssa.gov/policy/docs/research-summaries/education-earnings.html#:~:text=Men%20with%20bachelor%27s%20degrees%20earn%20approximately%20%24900%2C000%20more,Women%20with%20graduate%20degrees%20earn%20%241.1%20million%20more.

[3] https://www.fool.com/investing/2021/11/17/how-to-turn-30000-into-over-500000-with-almost-no/#:~:text=If%20you%20invest%20%2430%2C000%20and%20earn%20an%20average,decades%2C%20you%20should%20end%20up%20with%20about%20%24523%2C000.

[4] https://www.salary.com/research/salary/posting/trash-collector-salary

[5] https://www.ziprecruiter.com/Salaries/Mcdonalds-Management-Salary#:~:text=As%20of%20Apr%2028%2C%202023%2C%20the%20average%20annual,This%20is%20the%20equivalent%20of%20%241%2C023%2Fweek%20or%20%244%2C436%2Fmonth.

[2121] https://www.bls.gov/ooh/construction-and-extraction/electricians.htm

[22] https://www.bls.gov/ooh/construction-and-extraction/plumbers-pipefitters-and-steamfitters.htm

Checklist for Five to Finish: Pathways Initiative

Institution Actions

1. Announce the Five to Finish: Pathways Initiative in support of the institution's mission to prepare students for in-demand careers and professions. a. Remind faculty, staff, and administrators that all learning offered within the institution exists in support of this central identity, not for its own sake, emphasizing that every discipline is intrinsically valuable but must also be instrumental in achieving the institution's central purpose. b. State expectation that every college will choose and implement five HIPs. c. State that every program is expected to revise its degree maps as pathway maps that embody this emphasis, mission, and identity, purposefully linking all learning to career attainment.	_____ Date completed _____ Person responsible
2. Assist departments in creating comprehensive, student-friendly maps of their curriculum and rewriting degree maps as career pathway maps extending beyond graduation to multiple career possibilities. a. Create and distribute a sample curriculum map and a fillable template. b. Create and distribute a sample career pathway map and fillable template. c. Offer help sessions for individuals charged with creating these documents for their departments.	_____ Date completed _____ Person responsible
3. Plan, promote, and deliver professional development in: a. Incorporating high-impact practices and their eight key elements into all courses in every discipline b. Using curriculum maps and career pathway maps to assist students' learning and achievement. c. Engaging students by building meaning and relevance through active, experiential, and hands-on learning.	_____ Date completed _____ Person responsible
4. Ensure faculty and administrator accountability by revising annual performance evaluations to incorporate assessment of: a. Proficiency in leading students along the established career pathways. b. Implementation of HIPs	_____ Date completed _____ Person responsible

5. Encourage all departments to build external connections and partnerships to facilitate internships and co-op opportunities for students.	_____ Date completed _____ Person responsible
6. Host regular career fairs. a. Invite prospective employers from around the region, beginning with partners that provide internship and co-op opportunities for students. b. Prepare students to participate in career fairs by helping them create a resume and coaching them on interview skills, making a good first impression, and cultivating a professional appearance.	_____ Date completed _____ Person responsible

College/Department Actions

1. Revise degree maps into career pathway maps that extend beyond graduation to the various careers students who earn this degree might pursue.	_____ Date completed _____ Person responsible
2. Map every program's curriculum in full, showing the concepts students acquire at each level of their degree progression, connecting the introductory skills and knowledge of beginning courses with their application in upper-division courses and professional practice. Train faculty in how they should utilize this map in every course, showing students where they are along the pathway ("You are here") and how the course will help them advance their skills, knowledge, and employability.	_____ Date completed _____ Person responsible
3. Assemble an advisory board for each program, inviting industry professionals to review the department's curriculum specifically with an eye toward its relevance and applicability to current professional practice. Maintain an open mind toward their suggestions and make appropriate revisions (always adhering to university policy and procedure).	_____ Date completed _____ Person responsible
4. Develop internship and co-op opportunities in all programs, building relationships with businesses, nonprofits, educational institutions, government offices, and other external organizations as appropriate to the discipline.	_____ Date completed

	_____ Person responsible
5. Choose five High-Impact Practices that will help improve retention and graduation rates. a. Assemble a committee to select the HIPs that will be utilized and create an implementation plan. b. Plan and deliver faculty development on the HIPs selected. c. Create a timeline for accomplishment with benchmarks and success metrics. d. Report to the provost as follows: i. An initial report indicating which HIPs are selected and detailing the implementation plan. (Due Oct. 1, 2023) ii. A mid-year progress report stating what has been accomplished to date. (Due Jan. 15, 2024) iii. An end-of-year report stating what was accomplished and results achieved. (Due June 1, 2024)	_____ Date completed _____ Person responsible

Faculty Actions

1. Eliminate "syllabus day" and build excitement for the course by focusing the first day of class on what students will learn and how it will apply to their lives and careers. Use the curriculum map to show students how the course serves as a stepping-stone along their career pathways.	_____ Date completed
2. Frequently and explicitly connect course content to its application in real-world contexts.	_____ Date completed
3. Ensure that all concepts taught in the course are meaningful and relevant to students. Show students how the course content connects to what they already learned in previous courses and how it supports future learning, using the curriculum map as needed.	_____ Date completed
4. Build linked learning lessons, hands-on learning, and practical or real-world experience into the course wherever possible.	_____ Date completed
5. Incorporate High-impact Practices that allow students to make meaningful, relevant, real-world connections between their learning and practical application of the course's content (scaled as appropriate to the course, as described in "Implementing High-Impact Practices at Scale"):	_____ Date completed

a. First-year seminars and experiences b. Common intellectual experiences c. Learning communities d. Writing-intensive courses e. Creativity-infused learning f. Collaborative assignments and projects g. Undergraduate research h. Diversity and global learning i. ePortfolios j. Service-learning and Community-based learning k. Internships l. Capstone courses and projects	
6. Include as many of the Eight Key Elements of High-impact Practices in the course as possible: a. Performance expectations set at appropriately high levels b. A significant investment of time and effort by students over an extended period c. Interactions with faculty and peers about significant matters d. Experiences with diversity e. Frequent, timely, and constructive feedback f. Periodic, structured opportunities to reflect and integrate learning g. Opportunities to discover the relevance of learning through real-world application h. Public demonstration of competence	_____ Date completed
7. Prepare an end-of-term report to be delivered to the program director describing how strategies 1-6 were enacted in each course. (Due Jan 15, 2024, and June 1, 2024)	_____ Date completed

Assessment Criteria and Scoring

Institutional Accomplishment

Action Step	Institutional Accomplishment	Administrator Score
Announcement made to campus community. • Reminded community that the university's purpose is to prepare students for in-demand careers and professions. • Stated expectation that each college will choose and implement five HIPs. • Stated expectation for degree map revision into pathway maps leading to career attainment.	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Provided assistance to colleges/programs in creating curriculum maps and pathways maps. • Distributed templates. • Held help sessions for document creation.	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Planned, promoted, and delivered professional development in: • Incorporating HIPS and the Eight Key Elements into colleges, programs, and courses. • Using curriculum maps and career pathways maps to assist students' learning and achievement. • Engaging students by building meaning and relevance through active, experiential, and hands-on learning.	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____

Action Step	Institutional Accomplishment	Administrator Score
Revised annual performance evaluation criteria to include assessment of: • Proficiency in leading students along established pathways. • Implementation of HIPs.	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Encouraged all departments to build external connections and partnerships that facilitate internships and co-op opportunities for students.	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Hosted career fair • Invited prospective employers in the region. • Prepared students for participation by creating resumes, practicing interview skills, making a good first impression, cultivating a professional appearance/ • Established plans to make the career fair an annual event/	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Additional Narrative		
Administrator Feedback		
Final Score	Final score = _____ / 30	

College/Department/Program Accomplishment

Action Step	College/Department/Program Accomplishment	Administrator Score
Revised degree maps into career pathway maps	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Mapped every program's curriculum in full	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Trained faculty in how to use the curriculum map in every course. • Showed students where the course is on the pathway. • Explained how the course helps them advance their skills, knowledge, and employability.	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Assembled an advisory board of industry professionals for each program. • Invited advisory board to review the department/program curriculum. • Maintained an open mind to their suggestions. • Made appropriate changes aligned with university policy and procedure .	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Chose and implemented five HIPs:	Check one:	4 – Exceeds Expectations 3 – Meets Expectations

Action Step	College/Department/Program Accomplishment	Administrator Score
• Assembled a committee. • Created implementation plan. • Planned and delivered faculty development. • Created a timeline for accomplishment with benchmarks and success metrics/	____ Completed ____ Not Completed Explanation:	2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Prepared and delivered the required reports. • Initial report (Oct 1, 2023) • Mid-Year progress report (Jan 15, 2024) • End-of-Year report (June 1, 2024)	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Additional Narrative		
Administrator Feedback		
Final Score	Final score = _____ / 30	

Faculty Accomplishment

Action Step	Faculty Accomplishment	Administrator Score
Used the first day of class to build excitement for the course, focusing on what students would learn and how it applies to their lives and careers.	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Used the curriculum map to show students how the course serves as a stepping stone along their career pathways.	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Built connections between the course's content and real-world applications.	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Ensured that all concepts taught in the course are meaningful and relevant to students.	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Showed students how the course content connects to what they learned in previous courses and what they will learn in the future.	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____

Action Step	Faculty Accomplishment	Administrator Score
Incorporated linked learning lessons, hands-on activities, and practical or real-world experiences into the course.	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Incorporated one or more High-Impact Practices, scaled as appropriate to the course, making relevant, real-world connections between classroom learning and its application. • First-year seminars and experiences • Common intellectual experiences • Learning communities • Writing-intensive courses • Creativity-infused learning • Collaborative assignments and projects • Undergraduate research • Diversity and global learning • ePortfolios • Service-learning and Community-based learning • Internships • Capstone courses and projects	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____
Incorporated one or more of the Eight Key Elements of HIPs. A significant investment of time and effort by students over an extended period • Performance expectations set at appropriately high levels	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations Score = _____

Action Step	Faculty Accomplishment	Administrator Score
• Interactions with faculty and peers about significant matters • Experiences with diversity • Frequent, timely, and constructive feedback • Periodic, structured opportunities to reflect and integrate learning • Opportunities to discover the relevance of learning through real-world application • Public demonstration of competence		
Prepared the required end-of-term report and delivered it to the program director by Jan 15, 2024 for fall courses and June 1, 2024 for spring courses.	Check one: ____ Completed ____ Not Completed Explanation:	4 – Exceeds Expectations 3 – Meets Expectations 2 – Approaching Expectations 1 – Does Not Meet Expectations
Additional Faculty Narrative		
Administrator Feedback		
Final Score	Final score = _____ / 45	