Equity-Focused Teaching Strategies that Build Community and Ensure Students are Learning

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What’s Our Challenge?

- Higher education reform movements work hard to make change
- Have not fundamentally moved the needle on equity, student success
- A key gap: most reform movements overlook faculty and the quality of teaching and learning
- ATD focusing new attention on teaching, learning and the support faculty need to create transformational learning experiences

“Creating greater urgency for teaching and learning is long overdue…. But the onus cannot be solely on faculty to do more. They need support and time for more reflective practice…and collaborative professional development.”

- Karen Stout, President & CEO
A Culture of Teaching & Learning Excellence

Teaching & Learning Toolkit
A Research-Based Guide to Building a Culture of Teaching & Learning Excellence

1. Full-time and adjunct faculty use evidence-based instructional practices to foster student learning.

2. Collaborative partnerships link faculty and Student Affairs professionals in shared efforts to cultivate learning and support student success.

3. Educators join students as active learners in an accessible, empowering, personalized, and supportive academic community.

4. The institution embraces professional learning for continuous improvement, realigning related expectations in hiring, evaluation, promotion.
Equity-Building Practices

What Works?
- Active Learning
- Inclusive & Culturally Responsive Pedagogy
- Holistic Pedagogy
- Constructivist Pedagogy
- Inquiry Learning
- Collaborative Learning
- Experiential Learning

High-Impact Practices
- First Year Experience

Key Common Elements:
Faculty design learning experiences where:

A) Students actively explore ideas, ask questions and solve meaningful problems

B) Students can make connections between academic experiences and lived experiences – community, culture, personal, career, etc.
Active Learning Strategies

This is a spectrum of some active learning activities arranged by complexity and classroom time commitment.

“Active Learning Narrows Achievement Gaps for Underrepresented Students in Undergraduate STEM.”

-- Proceedings of the National Academy of Sciences

- Meta-analysis, reviewing results of hundreds of studies from colleges nationwide
- Faculty who employed active learning strategies showed higher outcomes for all students (measured by exam scores, course pass rates, etc.)
- African American, Latinx and Native American students benefited the most, reducing equity gaps by 30-45%.
Faculty Play an Essential Role in Student Success

Scaling High-Impact Practices to Improve Community College Student Outcomes

likely to be female and are younger, on average, than students not participating. Whereas more than one-quarter of students not participating in a HIP are adult students (25 years or older), just 14 percent of HIP participants are in this age group. Students participating in HIPs in their first term are more likely to be Black and Hispanic; those not participating are more likely to be white; there are no differences between HIP participants and non-participants who are Native American, though these students represent a very small proportion (0.2 percent) of their respective groups. Finally, a higher proportion of HIP participants demonstrate financial need, with 63 percent receiving Pell in their first fall term compared to 53 percent among non-participants.

HIP participants also differ from non-participants in terms of their enrollment characteristics. Students participating in a HIP in their first term are more likely to be enrolled full time (88 percent) compared to non-participants (70 percent), and they are much more likely to be enrolled in a learning support course (especially one in reading). Finally, although HIP participants are more likely than non-HIP students to be enrolled in an English gatekeeper course, students participating in a HIP are less likely to be enrolled in a math gatekeeper course in their first term.

To account for these student-level differences, our analysis estimates the association between HIP participation and a variety of academic outcomes using regression models that control for various student characteristics as well as a student's institution and term of enrollment. Controlling for student-level differences between HIP participants and non-participants reduces bias in estimates in an attempt to more effectively isolate the relationship between HIP participation and the academic outcome of interest.

Figure 2: Academic Outcomes for HIP Participants and Non-Participants

Source: TBR data. n=18,850. All differences between HIP participants and non-participants are significant at p<.05.

*Fall-Fall retention data is only available for Fall 2018 students and is restricted to this cohort.

Percentages represent average marginal effects from regressions that control for gender, age, race/ethnicity, Pell receipt, English and math gatekeeper course enrollment, learning support course enrollment, enrollment intensity, prior credits earned, institution, and start term.
Faculty Play an Essential Role in Student Success

Table 2: Academic Outcomes for HIP Participants and Non-Participants, for Black and Hispanic Students

<table>
<thead>
<tr>
<th></th>
<th>Black students (n=5,718)</th>
<th>Hispanic students (n=1,616)</th>
<th>All students (n=18,850)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No HIP</td>
<td>HIP</td>
<td>No HIP</td>
</tr>
<tr>
<td>Fall-Spring retention</td>
<td>+8%</td>
<td>59%</td>
<td>+6%</td>
</tr>
<tr>
<td>Fall-Fall retention*</td>
<td>+8%</td>
<td>35%</td>
<td>+4%</td>
</tr>
<tr>
<td>Earned 12 credits in first term</td>
<td>+10%</td>
<td>25%</td>
<td>+8%</td>
</tr>
<tr>
<td>Earned 24 credits in first year</td>
<td>+5%</td>
<td>12%</td>
<td>+4%</td>
</tr>
<tr>
<td>Complete GK math in first year</td>
<td>+7%</td>
<td>22%</td>
<td>+6%</td>
</tr>
<tr>
<td>Complete GK Eng. in first year</td>
<td>+11%</td>
<td>40%</td>
<td>+13%</td>
</tr>
<tr>
<td>Complete Both GK Eng. &amp; Math</td>
<td>+5%</td>
<td>18%</td>
<td>+7%</td>
</tr>
</tbody>
</table>

Source: TBR data

With the exception of coefficients in italics among Hispanic students, all differences between HIP participants and non-participants are significant at p<.05.

*Fall-Fall retention data is only available for Fall 2018 students and is restricted to this cohort.

Percentages represent average marginal effects from regressions that control for gender, age, race/ethnicity, Pell receipt, English and math gatekeeper course enrollment, learning support course enrollment, enrollment intensity, prior credits earned, institution, and start term.
"Our results support calls to replace traditional lecturing with evidence-based active-learning course designs across the STEM disciplines and suggest that innovations in instructional strategies can increase equity in higher education."

— Eli Theobald and colleagues

CHAPTER 1

Evidence-Based Pedagogy & Practice

Excellence Cornerstone I: Full-time and adjunct faculty use evidence-based instructional practices to foster student learning

To improve student learning and success, higher education must value and support quality teaching.

Research has confirmed this common sense yet often overlooked idea. Study after study shows that what faculty do in the classroom makes a difference in shaping the student learning experience, building achievement and increased persistence to graduation. "Instructional quality," found one major review of the research literature, "is positively correlated with student learning and motivation, retention, course pass rates, and subsequent interest in a subject, all of which have the potential to decrease course fatigue and time to degree."

As Lorelle Espinosa wrote after studying the success of women of color in STEM fields at 135 colleges, "Simply stated, pedagogy matters."

This chapter discusses the best new research, which helps us understand what kinds of pedagogies and practices make a difference. When "done well," active learning pedagogies such as inquiry and collaborative learning build student achievement and help to close equity gaps, as do High-Impact Practices such as First-Year Seminars and learning communities. Inclusive pedagogy and active learning strategies for using digital tools such as Electronic Student Portfolios (ePortfolios) and Open Education Resources also help build student learning and success.

None of these pedagogies and practices work without skilled and insightful faculty. To achieve success with evidence-based strategies, ATD believes that colleges must support full- and part-time faculty—and engage them as respected partners in learning about these approaches, adapting them to specific contexts, and effectively putting them into use at scale. This chapter seeks to help teams prepare for that process, highlighting salient evidence-based practices that faculty and institutions should consider as they work to advance a culture of teaching and learning excellence.

Research, Pedagogy, and Practice

In recent years, research on learning and teaching has exploded. Cognitive researchers have deepened our understanding of how the brain functions and the science of learning. Building on the magisterial 2000 synthesis How People Learn: Brain, Mind, Experience and School? Thousands of new studies have examined


Key Evidence-Based Pedagogies

The literature on evidence-based pedagogy is vast, making any summary list inevitably flawed. Moreover, many pedagogies are interrelated and intersect with High-Impact Practices. With those caveats in mind, here is one possible list of major categories of evidence-based pedagogies to consider in developing strategies for advancing student learning and success. For each item listed, we’ve offered one scholarly source and one more accessible “Getting Started” source (often web based).

Active Learning/ Learner Centered Pedagogy: Engaging students in active processes of gathering, considering, applying, and demonstrating knowledge.

- **Getting Started:** Active Learning. Resource page created by Cynthia J. Braine, Vanderbilt University Center for Teaching. [https://cft.vanderbilt.edu/guides-sub-pages/active-learning](https://cft.vanderbilt.edu/guides-sub-pages/active-learning)

Holistic Pedagogy: Recognizes the complex interplay between the cognitive and affective dimensions of learning and calls on faculty to address “the whole student.”

- **Scholarly Source:** Teaching to Promote Holistic Learning and Development. Boster Magalda, M. B. (2000). New Directions for Teaching and Learning, 82, 88-98. [https://doi.org/10.1002/tl.8209](https://doi.org/10.1002/tl.8209)

Inclusive and Culturally Responsive Pedagogies: Forms of constructivist pedagogy that bring to the learning experience that everyone can learn and that involves taking ownership making.

- **Getting Started:** Constructivist Pedagogy: A Teaching and Learning, by Soul M. SimplyPsychology.org. [https://www.simplypsychology.org/constructivism.html](https://www.simplypsychology.org/constructivism.html)

Experiential Learning: A variant of active learning that stresses hands-on experiences, often outside the walls of the classroom. Often used to describe the pedagogy behind service learning, internships, study-abroad, and co-curricular activities.

- **Getting Started:** Experiential Learning: Resource page created by University of Texas’s Faculty Innovation Center. [https://facultyinnovate.utexas.edu/experiential-learning](https://facultyinnovate.utexas.edu/experiential-learning)
- **Scholarly Source:** Experiential Learning: Experience as the Source of Learning and Development (2nd ed.). by D.A. Kolb. Published in 2014 by Pearson.

Writing to Learn: A social pedagogy that posits the act of writing as thinking process and emphasizes scaffolded and low-stakes writing processes to help students build cognitive and communication skills.

- **Getting Started:** What is Writing to Learn? Writing to Learn. [https://wac.colostate.edu/resources/wac/intro/wtl](https://wac.colostate.edu/resources/wac/intro/wtl)

- **Scholarly Source:** What is Writing to Learn? Writing to Learn. [https://wac.colostate.edu/resources/wac/intro/wtl](https://wac.colostate.edu/resources/wac/intro/wtl)
Validated High-Impact Practices

As designated by George Kuh and Association of American Colleges & Universities.

First-Year Experience: First-Year Seminar and extensive co-curricular programs for new students that engage them in critical inquiry, frequent writing, and collaborative learning experience working with faculty and other educators.

Learning Communities: Pairs or clusters of linked courses that encourage integration and engagement with “big questions” across disciplines.

ePortfolios: Deployed with integrative social pedagogies, ePortfolios help students reflect on their learning across courses, building metacognitive skills and supporting processes of identity development or purposeful self-authorship. Also used to support authentic assessment processes.

Writing-Intensive Courses: Courses in multiple disciplines that engage students in recursive, scaffolded writing projects with an emphasis on “writing to learn.”

Collaborative Projects: Engaging students in well-structured shared projects that require students to listen to and depend on each other, working together to pool resources and multiple perspectives to address substantial issues.

High-Impact educational practices: What they are, who has access to them, and why they matter

In addition to the validated list of 11 High-Impact Practices, other combinations of pedagogical and curricular innovation are showing promise for improving student learning and success. The list of salient promising practices includes:

Accelerated Remediation: Integrating basic skills students and remedial content into credit-bearing courses in English and mathematics has been shown to help students exit remediation, accumulate credit, and pass key gateway courses. Mathematics Pathways are related to accelerated remediation but extend to courses throughout the student’s college career; these are ‘developmental and college-level course sequences that align to a student’s academic and career goals. Research demonstrates that these intentionally designed pathways accelerate student completion of a gateway college-level math course.’

Open Educational Resources: Many textbooks available free online are covering most college general education subjects, such as scientific, mathematical, and technical fields. Mathematics Pathways to Completion.

Growth Mindset: Students who believe their intelligence is malleable and can be improved through hard work and learning are more likely to engage in higher-order processes of inquiry and learning, and are more likely to persist and succeed.

Promising Evidence-Based Practices

Growth Mindset: The New Psychology of Success

(sidebar continued from previous page)

ePortfolios engage students in systematic investigation, evaluation of evidence, readings and other thematic approaches to curricular and co-curricular programs for new students that engage them in critical inquiry, frequent writing, and collaborative learning experience working with faculty and other educators.

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  - Dana Center Math Pathways: https://www.danacenter.org/our-work/higher-education/dana-center-mathematics-pathways
  - Carnegie Math Pathways: https://carnegie.mathpathways.org

Adaptive Digital Learning Tools: Taking advantage of digital capacities and learning science, adaptive learning tools provide feedback and personalize the pace and content of learning, ensuring that students master crucial content while freeing instructor time for group projects and other active learning processes.

Open Educational Resources

Enhancing content engagement and student learning experiences within courses is critical to improving student success. A growing number of faculty nationwide are adopting Open Educational Resources (OER), defined as “digital materials that are free and openly licensed, allowing instructors and students to adapt, use, and share them.”

OER can be any type of learning content from assessments, articles, lesson plans, videos, textbooks, and images to entire courses; faculty select, combine, and revise high-quality course materials that best support their course objectives and reflect their students’ interests. The process of redesigning a course using OER can also introduce valuable instructional design techniques and reflective practices.

From 2016 to 2019, ATD led the OER Degree Initiative, a project that helped educators at 38 community colleges adopt and use OER materials for courses in high-enrollment degree programs such as criminal justice, business, and social sciences. Nearly 2,000 faculty took part in the initiative, adapting OER materials from the growing catalog of high-quality, openly licensed resources shared on the web.

Over the two and a half years of the project, approximately 160,000 students enrolled in over 600 new OER courses, saving at least $10.7 million in instructional material costs, according to a project evaluation. Data showed that many students used the savings to enroll in additional courses, speeding progress toward graduation. Sixty percent of the students found OER courses to be of comparable or higher quality than their non-OER courses and “appreciated that the materials were closely aligned with what instructors wanted them to learn and were well organized and easy to navigate. Some commented that the course content was more up to date and relevant.”

When using openly licensed materials, faculty can create opportunities for students to contribute to course content. Using Open Pedagogy, “Instructional practices that are made possible through the use of openly-licensed course materials,” education can “remix” their courses by having students contribute their own open content such as test bank questions, problem sets, or case studies, resources that can be used by peers in future courses. Open pedagogy positions students as creators of knowledge, as learner/teachers, building motivation and enriching the learning process for all.

“Open Pedagogy invites us to focus on how we can increase access to higher education, and how we can increase access to knowledge, both its reception and its creation,” write Robert DeRosa and Rajiv Jhangiani. From their perspective, the pedagogical aspect of OER is particularly valuable, “as a process of designing architectures and using tools for learning that enable students to shape the public knowledge commons.”

In the ATD project, a significant majority of faculty reported that students responded well to OER courses, coming to class better prepared and more engaged in course discussions and projects. “Students are more engaged, and with that engagement comes better grades and more completion,” reported Reynolds, who taught an OER-based Astronomy Course at Florida State College at Jacksonville, one of the 38 colleges participating in ATD’s OER Degree Initiative. “These students are non-science major students, and they’re coming to Astronomy Club meetings, going out on observations with the Astronomy Club. They’re getting engaged beyond the classroom.”

While OER projects typically require an up-front institutional investment (to compensate faculty to develop OER course materials and acquire needed technical infrastructure), ATD’s OER Degree Initiative found that campuses recouped this investment after several semesters. The evaluation further demonstrates that strategic OER initiatives can not only reduce costs and increase access but also help faculty invigorate their classroom practice and more deeply engage their students. Those interested in considering OER can learn more at ATD’s website on the OER Degree Initiative.
Professional Learning is Vital

1) **Stronger professional learning** leads to

2) **improved teaching and learning**, which is essential to

3) **better student outcomes** and greater equity.
Landmark Research on Professional Learning

- Do faculty participants in sustained faculty development learn the intended new skills and approaches? **YES**

- Do participants in sustained faculty development then make the desired changes in their teaching practice? **YES**

- Is this improved teaching associated with improved student outcomes? **YES**

“Well-designed faculty development yields great value...The connections between changes faculty make in assignments and changes in student learning are clear.”

*Faculty Development and Student Learning: Assessing the Connections*
Bronx Community College: HIPs Done Well

<table>
<thead>
<tr>
<th><strong>FYS faculty engagement level</strong></th>
<th><strong>FYS Pass Rates</strong></th>
<th><strong>1st Sem. Credit Accumulation</strong></th>
<th><strong>Next Semester Retention</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Robust professional development</td>
<td>82.3%</td>
<td>7.26 Credits</td>
<td>82.2%</td>
</tr>
<tr>
<td>Minimal professional development</td>
<td>72.0%</td>
<td>5.86 Credits</td>
<td>76.5%</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td><strong>10.3 percentage points</strong></td>
<td><strong>1.4 Credits</strong></td>
<td><strong>5.7 percentage points</strong></td>
</tr>
</tbody>
</table>

“The critical implication is that intensive professional development is worth the investment of money and time, as it helps an institution not only improve retention and graduation rates, but also deepen students’ learning and improve their long-term professional and personal success.”

*High Impact Catalyst for Success*  
Getman-Eraso & Culkin, 2018
Focus on key gateway courses

Change at scale – has supported Faculty Learning Communities engaging more than 300 full- and part-time faculty.

In 2016-18, worked with faculty teaching 29 gateway courses.

Significantly reduced the DFW rate in 21 of the 29 courses.

The most student-centered courses saw the greatest gains.

See ATD Teaching & Learning Toolkit, p. 72-73
Research shows that professional learning, done well, advances quality and scaling:

- Helps faculty learn about and adapt new approaches to their courses
- Supports faculty as they test new approaches in practice
- Advances change at scale by engaging all faculty, full- and part-time
- Stimulates the growth of a culture of teaching and learning excellence
Engaging Inquiry & Reflection

High-impact professional learning supports a sustained and recursive inquiry process, linking exploration, planning, testing, reflection and exchange.

Toolkit Examples: Bronx CC, Purdue IMPACT, State University of New York (SUNY)

ATD Toolkit, p. 78-79
Reflection + Small Group Discussion

• Think of a new practice you have introduced in your teaching over the past 2-3 years.
  – In what ways has it positively impacted your students’ learning?
  – How did colleagues support you in learning about/testing/implementing this new practice? (e.g., professional development workshop or institute; conversations with colleagues in your department; peer classroom observation)
“Early in Calculus 2, we started getting into really difficult things and I suddenly began having these feelings like I didn’t belong in this class, that my education, what I was trying to achieve, wasn’t possible. I went to Professor Arco to say that I might have to drop out ...”

- Joshua Rodriguez,
  student at Oakton Community College
“He told me, Joshua, I don’t want you to do the homework tonight. I want you to look up ‘imposter syndrome’ and then come talk with me. I did that, and I learned that it is extraordinarily common among students. That interaction bolstered my confidence to realize that I’m not alone in this, that everyone has these feelings. I went from contemplating dropping out to getting tutoring help, and then getting an A in the course.”

- Joshua Rodriguez, student at Oakton Community College
Thank you!

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