Textbook Affordability Conf.

# OER and Student Success

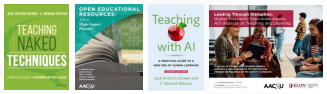
*How higher education can navigate its grand challenges*

**Tuesday, November 3rd**
**Rosemont, IL**

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**C. Edward Watson, Ph.D.**




**Vice President for Digital Innovation**
**American Association of Colleges and Universities**

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watson@aacu.org

http://eddiewatson.net

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## Organizing Trajectories

- Provide context for our work at AAC&U.
- Review higher education's ongoing greatest challenges.
- Examine how OER speak to those challenges as well as higher education's student learning and success zeitgeist.
- Perform a deep dive into OER research performed at the University of Georgia and AAC&U.





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## Who We Are

*A global membership organization dedicated to advancing the democratic purposes of higher education by promoting equity, innovation, and excellence in liberal education.*

**1,200+** institutional and individual members

**7M+** students enrolled at member institutions

**350K+** faculty and staff at member institutions

AAC&U BRINGS TOGETHER

- Community colleges
- Liberal arts colleges
- Public & private colleges
- Research universities
- Minority-serving institutions
- International institutions
- Higher education systems
- Affiliate organizations

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## How We Partner with Institutions

Each campus has a unique mission and culture, but institutions face shared challenges. AAC&U works alongside members through integrated programs, events, research, and campus-based initiatives.

**Authentic Assessment**
VALUE initiative · VALUE rubrics · Institute on Authentic Assessment · Assessment in the Age of AI

**Innovation in Teaching & Learning**
Next-gen High-Impact Practices · AI, Pedagogy & Curriculum · Experiential Learning · OER

**Student Success & Transformation**
Conference on Learning & Student Success · Institute on Community Transformation · Peer learning networks

**STEM Education**
PKAL (Project Kaleidoscope) · TIDES Institute · STEM Higher Education Conference

**Global Learning & Civic Engagement**
Conference on Global Learning · VE/COIL Institute · Civic learning programming

**Leadership Training & Support**
Presidents' Trust · New Leadership Academy · Forum on Transformational Leadership · STEM Leadership Institute

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Trending Topic

## High-Impact Practices

The teaching and learning practices listed and described below are designated as "high-impact practices," or HIPs, based on evidence of significant educational benefits for students who participate in them—including and especially those from demographic groups historically underserved by higher education. These practices take many different forms, depending on learner characteristics and on institutional priorities and contexts.

"when done well"

- Capstone Courses and Projects
- Collaborative Assignments and Projects
- Common Intellectual Experiences
- Diversity/Global Learning
- ePortfolios
- First-Year Seminars and Experiences
- Internships
- Learning Communities
- Open Educational Resources (OER)
- Service Learning, Community-Based Learning
- Undergraduate Research
- Writing-Intensive Courses

https://www.aacu.org/trending-topics/high-impact AAC&U

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Trending Topic

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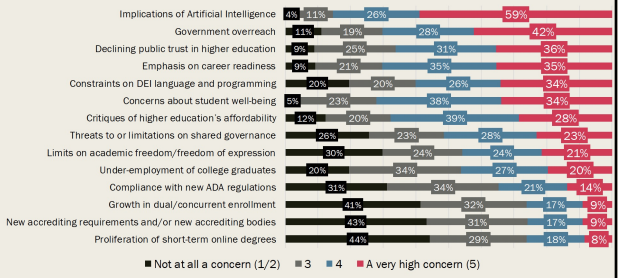
https://www.aacu.org/trending-topics/high-impact AAC&U

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How much of a concern are the following issues at your institution right now? (1-5 scale: 5=very high concern; 1= Not a concern)




*Note: Responses of 1 or 2 were collapsed for ease of interpretation*

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### Four Greatest Challenges

- Completion / attainment gap
- Quality of learning
- College affordability
- Artificial Intelligence



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### Challenge 1: Persistence and Attainment

- College Persistence and Completion
- Closing the attainment gap




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## Challenge 2: Quality Learning

- Need for more adaptable graduates
- Those who have achieved higher order learning outcomes
- AI threatens this in existential ways





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## Quality in Higher Education

"The quality shortfall is just as urgent as the attainment shortfall."





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## Challenge 3: Affordability

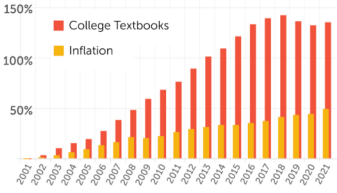
- The cost of higher education
- Inflation of tuition and materials
- Student debt crisis






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## COLLEGE TEXTBOOK PRICES 2001-2021

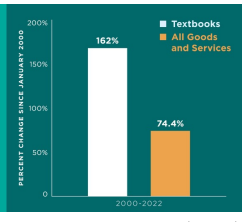



*Source: Bureau of Labor Statistics Consumer Price Index. Graph represents the percent increase to prices over time.*

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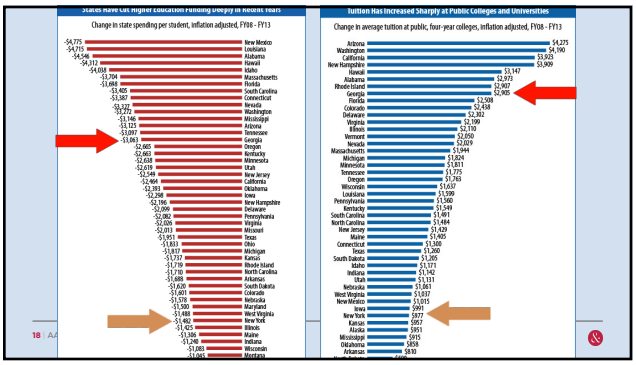
## Why Use OER? Cost and Student Behavior

From January 2000 to June 2022, the cost of textbooks increased by 162%, much faster than the average inflation rate of 74.4% over that time.




(Perry, 2022)

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Georgia



- ($3,063) less in state funding
- $2,905 tuition increase
- -$158 difference

New York



- ($1,482) less in state funding
- $977 tuition increase
- -$505 difference



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## The Cost of Higher Education

**"The cost shifting - from the public to individual students and their families - has made cost, rather than either completion or the quality of learning, the dominant public concern."**

Humphrey, D. (2012). What's wrong with the completion agenda: And what we can do about it. *Liberal Education, 98*(1), 8-17.



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## Future of Higher Education

- Institutions must seek a portfolio of solutions that address completion / attainment, affordability, and quality
- Solutions don't have to be mutually exclusive. Examples include:
  - AAC&U's High Impact Practices
  - Improved advising
  - Predictive analytics
- Outcomes from OERs should be in every institution's portfolio of solutions as data suggests they positively impact three of our greatest challenges.



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OER Research at the University of Georgia

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## Brief Introduction to Adoption Strategy

- Decrease the cost of higher education by fostering faculty adoption of free, online textbooks
- Maximize cost savings by working with faculty who
  - Teach large enrollment general education courses
  - Currently use an expensive textbook
- Selected early adopters who possessed opinion leadership on campus
- Economies of scale emerge with such targeting



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## Summary of Savings at UGA

- Our process throughout was to target large enrollment courses that use expensive textbooks to maximize student impact
- US History, Biology (majors and non-majors), Theater, Psychology, Sociology, and Anatomy and Physiology have all adopted OpenStax or another OER
- Impacted 29,789 students saving approximately $2,804,145 in textbook costs (currently 155,000 students / ~$13.3 million in savings)
- An impact on affordability, yes, but new research questions emerged…



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## Core Research Questions

- Might OERs and their accessibility to all students from day one of a course positively impact various student success metrics?
- Particularly, might course grades and/or DFW rates be improved as a result of OER adoption?
- Might such impacts have a greater impact upon those from various demographic subgroups, such as Pell-eligible students, students of color, etc.?

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## Overview of Study at the University of Georgia

- Looked at students in sections of courses taught by professors who eventually adopted OpenStax OERs
- N=22,137
  - Students in courses using OERs (n=10,141)
  - Students in courses using traditional, publisher textbooks (n=11,996)
  - 5,507 (24.9%) were Federal Pell Grant (Pell-eligible) students

Colvard, N. B., Watson, C. E., & Park, H. (2018). The impact of open educational resources on various student success metrics. *International Journal of Teaching and Learning in Higher Education, 30*(2), 262-276.

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## OER and DFW Rates

- Via different research methodologies, OER were found to have an impact of failure rates
- Top figure is from research at Houston Community College
- Bottom figure is from research at the University of Georgia




(Smith et al., 2020)

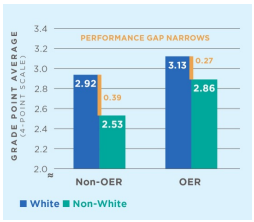


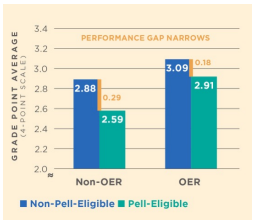

(Colvard et al., 2018)

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## OER and Performance Gaps




(Colvard et al., 2018)

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## Summary of UGA Findings

- Improve end of course grades for all students.
- Decrease DFW rates for all students.
- Improve course grades at greater rates for Pell-eligible students, Non-white students, and Part-time students.
- Decrease DFW rates at greater rates for Pell-eligible students, Non-white students, and Part-time students.

Colvard, N. B., Watson, C. E., & Park, H. (2018). The impact of open educational resources on various student success metrics. *International Journal of Teaching and Learning in Higher Education, 30*(2), 262-276.

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## An Argument has emerged that

- OER may serve to level the academic playing field and reveal their impact extending beyond simply saving students money.
- OER may serve to increase academic equity in classroom settings.
- However...

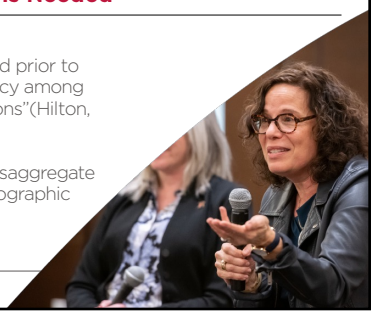


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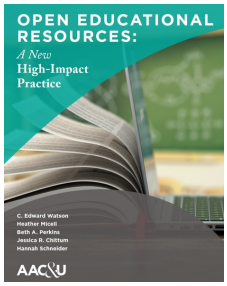
## Additional Research is Needed

- "Only one study published prior to 2019 analyzes OER efficacy among various student populations"(Hilton, 2019)
- Additional studies that disaggregate students by various demographic data are needed





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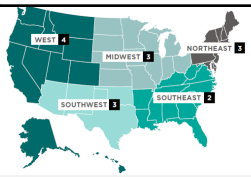



## Vision of Latest Research

- Establish a generalizable foundation upon which advocates can make an evidence-based argument for the adoption of OER
- Discern under what conditions, utilizing which strategies, result in the greatest student performance gains
- Might OER be added to AAC&U's list of High Impact Educational Practices?
- Accelerate OER adoption in higher education

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## 15 Institutions




| Carnegie-derived classification | No. of institutions | Student records | % of sample |
|---|---|---|---|
| Community colleges | 3 | 445,887 | 64.0 |
| Doctoral universities | 3 | 88,528 | 12.7 |
| Historically Black colleges & universities (HBCUs) | 2 | 76,419 | 11.0 |
| Private 4-year institutions | 3 | 5,000 | 0.7 |
| Regional public 4-year institutions | 3 | 79,847 | 11.5 |
| Tribal college | 1 | 589 | 0.1 |

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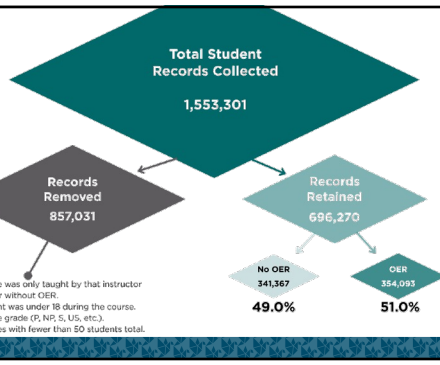



| Course discipline | |
|---|---|
| Business | 2% |
| Biological science, agriculture, & natural resources | 10% |
| Physical science, mathematics, & computer science | 16% |
| Other majors (not categorized) | 19% |
| Social sciences | 20% |
| Arts & humanities | 32% |

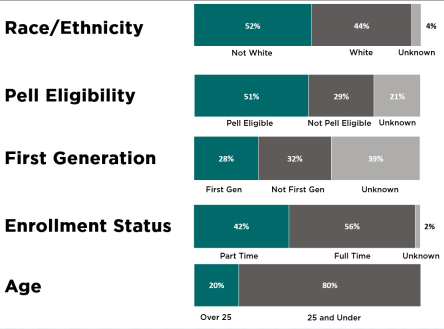
| General education | |
|---|---|
| Unknown | 2% |
| Not gen ed | 16% |
| Gen ed | 82% |

| STEM | |
|---|---|
| STEM | 30% |
| Not STEM | 70% |

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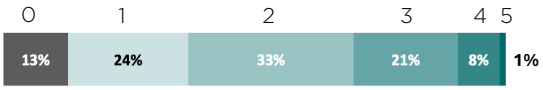



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## "Composite Learner Complexity"

**Pell Eligibility = Yes**
**Race/Ethnicity = Non-White**
**First Generation = Yes**

**Full Time = No**
**Age = Over 25**




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## Linking OER to Student Success

- Course Withdrawal
- Course Grades
- Time to Degree Completion

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## What impacts whether a student withdraws from a course?

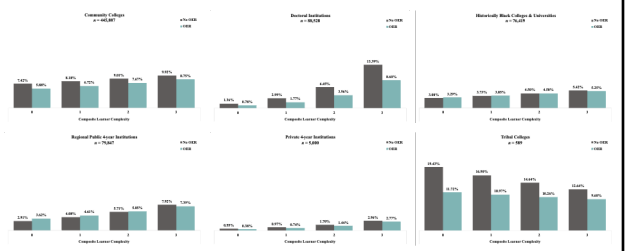
| Institutional context | Course context | Student background |
|---|---|---|
| **Institution type** | **Use of OER in a course** | **Composite Learner Complexity** |

**Plus interactions between these variables**

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## Predicted Probability of Course Withdrawal



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## What impacts whether a student withdraws from a course?

| Institutional context | Course context | Student background |
|---|---|---|
| **Institution type** | **Level of OER Implementation** | **Composite Learner Complexity** |

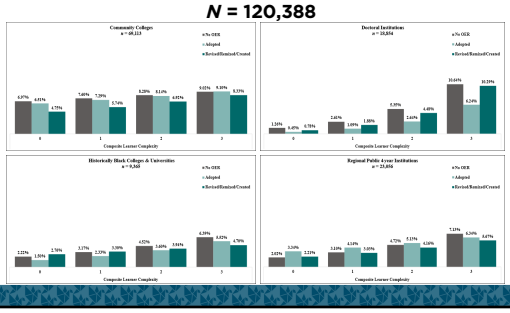
**Plus interactions between these variables**

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## Does Knowing the Level of OER Implementation Matter?

***N* = 120,388**



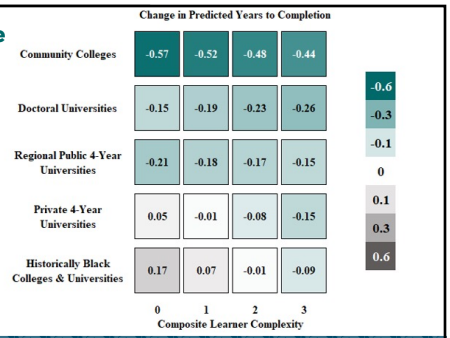
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## Does OER impact final course grade?

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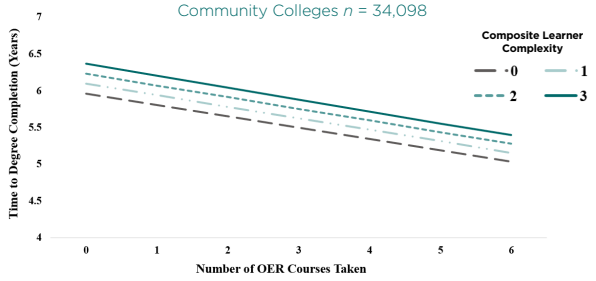
## Time to Degree Completion – *at Least 1 OER Course*




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## Time to Degree Completion - Multiple OER Courses

Community Colleges *n* = 34,098



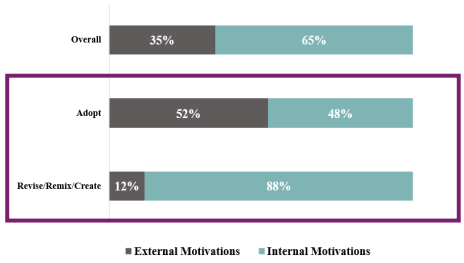

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## Instructor Survey Results

**Exploring characteristics of the OER implementation experience**

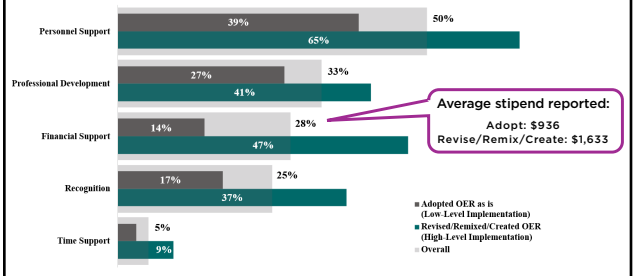
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## Motivation to Implement OER



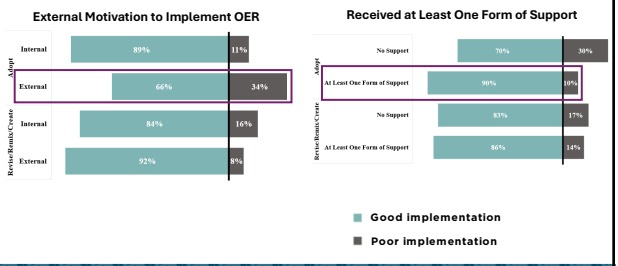

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## Supports Received




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## Perceived Quality of OER Implementation

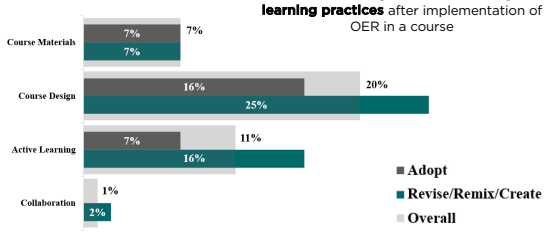



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## Changes to Teaching & Learning Practices

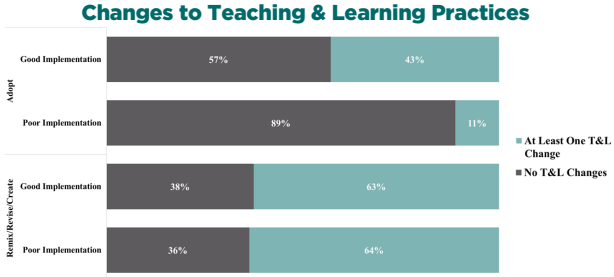
Only **33%** of instructors indicated they made **at least one change to their teaching and learning practices** after implementation of OER in a course




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## Perceived Quality of Implementation and Changes to Teaching & Learning Practices




This aligns with motivation theory (e.g., Deci & Ryan, 2000):
More autonomy → more free choice/intrinsic motivation to engage

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## OER is a High-Impact Practice (HIP)

- Based on the results of these analyses, we are confident in naming OER as the 12th HIP, ***when done well***
  - Positive impacts for student success
  - In many contexts, those impacts are greater for students from historically minoritized populations
- OER is a unique HIP in that individual faculty can implement it in their classrooms even without institutionalization
- OER as a potential gateway to other evidence-based pedagogical choices

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## "When Done Well"

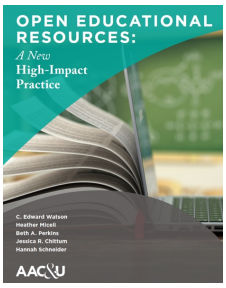
- Instructor autonomy
- Financial support
- Time support
- Personnel support
- Professional development

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## Want to read the full report?

https://bit.ly/AACU_OER_HIP




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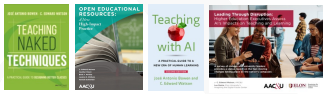
Thank you!

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C. Edward Watson, Ph.D.




**Vice President for Digital Innovation**
**American Association of Colleges and Universities**

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watson@aacu.org

http://eddiewatson.net



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