

Peralta Equity Rubric – Bibliography of Research Citations

Supporting Rubric Criteria

A wide range of factors affect student success, many of which can be improved by taking steps to improve equity:

- Academic factors: Generally, **students' level of preparedness for learning** and, specifically, **students' readiness for online learning** affect their success.
- Pedagogical factors: Your **course organization and design**, the quality and quantity of **interaction opportunities**, and **timely and effective feedback** all contribute to success.
- Psychological factors: Students' feelings of **social belonging** and ability to address **stereotype threat** improve success, as do students' perceptions of the course's **value relevance** and the teacher's **compassion**.
- Social factors: Students' feelings of **isolation or alienation** in an online course have a negative impact, while joining a **learning community** has a positive impact.
- Technological factors: **Access to and ability to use the technologies required** for online course--or lack thereof--affect students' success.

The following research references demonstrated a) the need for an equity rubric criterion based on the existence of an equity issue and/or b) how meeting a specific equity rubric criterion has been proven to improve online student persistence and/or success. Whenever possible, the literature referenced addresses these issues for disproportionately impacted students.

Course / environment experience

Image and Representation Bias

Internet-Based Image Resources

- Kay, M.; Matuszek, C.; & Munson, S.A. (2015). Unequal Representation and Gender Stereotypes in Image Search Results for Occupations. In *Proceedings from CHI '15: 33rd Annual ACM Conference on Human Factors in Computing Systems*, 18 - 23 April, Seoul, Republic of Korea (pp. 3819-3828). New York: Association for Computing Machinery. Retrieved from <https://dub.washington.edu/djangosite/media/papers/unequalrepresentation.pdf>
 - **Presence of bias** in image search results
- Mahdawi, A. (2017, September 10). Stock photo stereotypes are shifting, but the typical woman is still young, skinny and white. [Web article]. *The Guardian*. Retrieved from <https://www.theguardian.com/artanddesign/commentisfree/2017/sep/10/stock-photo-stereotypes-are-shifting-but-the-typical-woman-is-still-young-skinny-and-white>
 - **Presence of bias** in stock photo libraries

Textbooks & Educational Resources

- Good, J.J.; Woodzicka, J.A.; & Wingfield, L.C. (2010). The effects of gender stereotypic and counter-stereotypic textbook images on science performance. *The Journal of Social Psychology, 150*(2), 132-147. Retrieved from https://www.researchgate.net/profile/Julie_Woodzicka/publication/43180259_The_Effects_of_Gender_Stereotypic_and_Counter-Stereotypic_Textbook_Images_on_Science_Performance/links/0046352c9553eddcac000000/The-Effects-of-Gender-Stereotypic-and-Counter-Stereotypic-Textbook-Images-on-Science-Performance.pdf
 - **Positive effect of addressing bias** - High school students – females showed higher science comprehension after viewing counter-stereotypic images (female scientists) and males showed higher science comprehension after viewing stereotypic images (male scientists).
- Kerkhoven, A.H.; Russo, P.; Land-Zandstra, A.M.; Saxena, A. & Rodenburg, F.J. (2016). Gender Stereotypes in Science Education Resources: A Visual Content Analysis. *PLoS ONE, 11*(11). Retrieved from <https://doi.org/10.1371/journal.pone.0165037>
 - **Presence of bias, suggestions for balance** – in online science education resources, men and women are portrayed in stereotypic ways
- Louie, P. & Wilkes, R. (2018). Representations of race and skin tone in medical textbook imagery. *Social Science & Medicine*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/29501717>
 - **Presence of bias** in medical textbook images
- Otlowski, M. (2003, June). Ethnic diversity and gender bias in EFL textbooks. *The Asian EFL Journal, 5*(2). Retrieved from http://asian-efl-journal.com/june_03_mo.pdf
 - **Presence of bias** in English as a Foreign Language textbooks
- Parker, R.; Larkin, T. & Cockburn, J. (2017, May). A visual analysis of gender bias in contemporary anatomy textbooks. *Social Science & Medicine, 180*, 106-113. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/28343109>
 - **Presence of bias** in anatomy textbooks

Stereotype threat

- Appel, M. & Kronberger, N. (2012). Stereotypes and the Achievement Gap: Stereotype Threat Prior to Test Taking. *Educational Psychology Review, 24*(4), 609-635.
 - **Negative effect of stereotype threat on academic performance**

Universal Design for Learning

UDL for all courses in general

- Brandon, A. & Nemeroff, A. (2016, October 26). Creating Inclusive Courses with Universal Design. [web article]. Retrieved from <https://sites.dartmouth.edu/edtech/2016/10/26/creating-inclusive-courses-with-universal-design/>

- Capp, M.J. (2017). The effectiveness of Universal Design for Learning: A meta-analysis of literature between 2013 and 2016. *International Journal of Inclusive Education*, 21(8), 791-807.
 - "Results from this analysis suggest that UDL is an effective teaching methodology for improving the learning process for all students. The impact on educational outcomes has not been demonstrated."
- Kelly, K. (2014, Fall). Fostering Inclusion with Universal Design for Learning. *Diversity & Democracy*, 17(4). Retrieved from <https://www.aacu.org/diversitydemocracy/2014/fall/kelly>
 - Describes how UDL supports multiple pathways for allowing students to show what they know (i.e., assessment). Provides UDL implementation suggestions ranging from simple to complex.

UDL applied to online courses

- Crosling, G.; Thomas, L.; & Heagney, M. (2008). *Improving student retention in higher education: The role of teaching and learning*. New York, NY: Routledge.
 - **Research identified UDL benefits to learners:** UDL "adjustments to teaching practice improve the learning experiences and retention rates of students with a disability and those from other underrepresented groups such as non-English-speaking-background students as well. Inclusive adjustments to the intellectual environment work to improve all students' experience of [the] university" (p. 24)
- He, Y. (2014). Universal Design for Learning in an online teacher education course: Enhancing learners' confidence to teach online. *Journal of Online Learning and Teaching*, 10(2), 283-298.
 - **Research identified UDL benefits to learners**
- Rao, K. (2012). Universal design for online courses: Addressing the needs of non-traditional learners. *2012 IEEE International Conference on Technology Enhanced Education (ICTEE)*, 1-8.
 - **Research identified UDL benefits for non-traditional learners**
- Smith, F. (2012). Analyzing a college course that adheres to the universal design for learning (UDL) framework. *Journal of the Scholarship of Teaching and Learning*, 12(3), 31-61.
 - **Research identified UDL benefits to learners:** Results suggest that when faculty use the UDL framework to help design courses, goals are more clearly aligned with instructional practices; there is a positive relationship to student interest and engagement; and students are positively engaged in the course
- Tobin, T.J. (2014). Increase online student retention with universal design for learning. *The Quarterly Review of Distance Education* 15(3), 13-24.
- UDI Online Project. (2009). *Examples of UDI in Online and Blended Courses*. Center on Postsecondary Education and Disability, University of Connecticut, Storrs. <http://www.udi.uconn.edu/index.php?q=content/examples-udi-online-and-blended-courses>

- Hollingshead, A. (2018). Designing engaging online environment: Universal design for learning principles. In K. L. Milheim (Ed.), *Cultivating Diverse Online Classrooms through Effective Instructional Design*. Hershey, PA: IGI Global.
- Lowrey, K. A., Smith, S. J., and Khoo, J. (2016). Multiple means of representation in distance education. In L. A. Scott and C. A. Thoma (Eds.), *Universal Design for distance education: A guide for online course development* (pp. 29-43). Acton, MA: XanEdu.
- Rao, K., and Tanners, A. (2011). Curb cuts in cyberspace: Universal Instructional Design in online courses. *Journal of Postsecondary Education and Disability*, 24(3), 211-229.

Content Meaning

- Brown University. (n.d.). Culturally Responsive Teaching. Retrieved from <https://www.brown.edu/academics/education-alliance/teaching-diverse-learners/strategies-0/culturally-responsive-teaching-0>
- Hammond, Z.L. (2014). *Culturally Responsive Teaching and The Brain: Promoting Authentic Engagement and Rigor Among Culturally and Linguistically Diverse Students*. Thousand Oaks, CA: Corwin.
- Hammond, Z.L. (n.d.). 3 Tips to Make Any Lesson More Culturally Responsive. [guest blog post]. *Cult of Pedagogy*. Retrieved from <https://www.cultofpedagogy.com/culturally-responsive-teaching-strategies/>
- Kruse, A.J. (2016). Cultural Bias in Testing: A Review of Literature and Implications for Music Education. [updated article]. *Applications of Research in Music Education*, 35(1), 23-31. Retrieved from <http://journals.sagepub.com/doi/full/10.1177/8755123315576212>
- Priniski, S.J.; Hecht, C.A; & Harackiewicz, J.M. (2018) Making Learning Personally Meaningful: A New Framework for Relevance Research. *The Journal of Experimental Education*, 86(1), 11-29. Retrieved from <https://doi.org/10.1080/00220973.2017.1380589>
- Saunders, S. & Kardia, D. (1997). Creating Inclusive College Classrooms. University of Michigan - Center for Research in Teaching and Learning. Retrieved from http://www.crlt.umich.edu/gsis/p3_1
 - **Strategies for choosing course content that increases inclusion**
- Winkelmes, M. (2014). Transparency in Learning and Teaching Project. Retrieved from <https://www.unlv.edu/provost/transparency>

Student experience

Diversity & Inclusion

- Brandon, A. & Nemeroff, A. (2016, October 26). Creating Inclusive Courses with Universal Design. [web article]. Retrieved from <https://sites.dartmouth.edu/edtech/2016/10/26/creating-inclusive-courses-with-universal-design/>
 - **Strategies for using Universal Design for Instruction**
- Clemson University. (2016, July 18). Creating an Inclusive Learning Environment for All Learners. [blog post]. Retrieved from

<https://blogs.clemson.edu/online/2016/07/18/creating-an-inclusive-learning-environment-for-all-learners/>

- Gibbs, L. (2017, July 4). Designing for Equity: Growth, Slack, and Abundance (NOT Grit, Deficits and Scarcity) [blog post]. Retrieved from <https://community.canvaslms.com/people/laurakgibbs/blog/2017/07/04/designing-for-equity-growth-slack-and-abundance-not-grit-deficits-and-scarcity>
- Jones, M. & Sneed, O. (2016, January 12). Fostering an Inclusive Environment when Developing Online Courses. [web article]. *TeachOnline*. <https://teachonline.asu.edu/2016/01/fostering-inclusive-environment-developing-online-courses/>
- Kelly, K. (2014, Fall). Fostering Inclusion with Universal Design for Learning. *Diversity & Democracy*, 17(4). Retrieved from <https://www.aacu.org/diversitydemocracy/2014/fall/kelly>
- Kizilcec, R.F. & Saltarelli, A.J. (2019). Psychologically Inclusive Design: Cues Impact Women's Participation in STEM Education. CHI 2019, May 4–9, 2019, Glasgow, Scotland, UK. Retrieved from <http://rene.kizilcec.com/wp-content/uploads/2019/01/kizilcec2019pid.pdf>
- Saunders, S. & Kardia, D. (1997). Creating Inclusive College Classrooms. University of Michigan - Center for Research in Teaching and Learning. Retrieved from http://www.crlt.umich.edu/gsis/p3_1
- UDI Online Project. (2009). *Examples of UDI in Online and Blended Courses*. Center on Postsecondary Education and Disability, University of Connecticut, Storrs. <http://www.udi.uconn.edu/index.php?q=content/examples-udi-online-and-blended-courses>

Personal Connections With & Among Students

- Catalano, F. (2015, March 25). 5 Elements To Better Connection And Communication With Online Students. [web article]. Retrieved from <https://elearningindustry.com/5-elements-better-connection-communication-with-online-students>
- Touro College. (2013, August 8). 10 Tips for Making Personal Connections With Students in Online Courses. [blog post]. Retrieved from <http://blogs.onlineeducation.touro.edu/10-tips-for-making-personal-connections-with-students-in-online-courses/>

Human Interaction Bias

- Baker, R.; Dee, T.; Evans, B.; & John, J. (2018). *Bias in Online Classes: Evidence from a Field Experiment (CEPA Working Paper No. 18-03)*. Retrieved from Stanford Center for Education Policy Analysis: <http://cepa.stanford.edu/wp18-03>
 - **Presence of bias** in how teachers reply to online learners in discussion forums

Overall learning experience

Social Belonging (in both the course and the discipline)

- Harackiewicz, J.M. & Priniski, S.J. (2018). Improving student outcomes in higher education: The science of targeted intervention. *Annual Review of Psychology*, 69, 409-435. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6211287/>

- **Positive effect of social belonging interventions**
- Kizilcec, R.F.; Saltarelli, A.J.; Reich, J.; & Cohen, G.L. (2017, January 20). Closing global achievement gaps in MOOCs. *Science*, 355(6322), 251-252. Retrieved from <https://science.sciencemag.org/content/355/6322/251>
 - **Positive effect of addressing social identity threat** – improved persistence and completion rates among learners in developing countries, eliminating global achievement gap
- Mintz-Binder, R.D. (2015). Comparison of Two Modes of Teaching Delivery in Graduate Nursing Education. Presentation at Sigma Theta Tau International. Retrieved from <https://sigma.nursingrepository.org/handle/10755/603114>
 - **Positive effect of sense of belonging** – appears to modulate stress in online course environments
- Thomas, L., Herbert, J. & Teras, M. (2014). A sense of belonging to enhance participation, success and retention in online programs. *The International Journal of the First Year in Higher Education*, 5(2), 69-80. Retrieved from <https://ro.uow.edu.au/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1488&context=asdpapers>
 - **Positive perception of belonging** - "students and academics highly value efforts to create a sense of belonging across the students undertaking an online course" (p. 78)
- Wilson, D.; Jones, D.; Bocell, F.; Crawford, J.; Kim, M.J.; Veilleux, N.; Floyd-Smith, T.; Bates, R.; & Plett, M. (2015). Belonging and Academic Engagement Among Undergraduate STEM Students: A Multi-institutional Study. *Research in Higher Education*, 56, 750-776. Retrieved from http://tll.mit.edu/sites/default/files/library/Wilson_2015.pdf
 - **Confirms importance of belonging in STEM classes.** Belonging is "a distinct attribute related to engagement and is not simply reducible to feelings of self-efficacy" (p. 751).
- The Ohio State University. (n.d.). Sense of belonging in the college classroom. Retrieved from <https://ucat.osu.edu/bookshelf/teaching-topics/shaping-a-positive-learning-environment/sense-of-belonging-in-the-college-classroom/>

Student Support

- Bailey, T. & Brown, A. (2016). Online Student Services: Current Practices and Recommendations for Implementation. *Journal of Educational Technology Systems*, 44(4), 450-462.
 - Cites research supporting the **need for online student services**
- Britto, M. & Rush, S. (2013). Developing and implementing comprehensive student support services for online students. *Journal of Asynchronous Learning Networks*, 17(1), 29-42. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1011371.pdf>
 - **Student support strategies to increase online student retention**
- Peters, B.; Crawley, A.; & Brindley, J.E. (2017, September). *Student support services for online learning re-imagined and re-invigorated: Then, Now and*

- What's to Come: Lessons Learned From the California Community College System (CCC), the Largest System of Higher Education in the USA.* Report by Contact Nord. Retrieved from https://teachonline.ca/sites/default/files/tools-trends/insights/pdf/student_support_services_for_online_learning_re-imagined_and_re-invigorated.pdf
- **Evidence that online support services impact student success rate** – see p. 14
 - See **WCET web of student support services** – categories: academic, administrative, communications, student community, and student personal services
- Roddy, C.; Amiet, D.L.; Chung, J.; Holt, C.; Shaw, L.; McKenzie, S.; Garivaldis, F.; Lodge, J.M. and Mundy, M.E. (2017). Applying Best Practice Online Learning, Teaching, and Support to Intensive Online Environments: An Integrative Review. *Frontiers in Education*, 2(59).
 - Online environment: **Best practices in student support & well-being services for online learners** –services should include a) Online-friendly academic supports (an orientation, access to Library services); b) Assistance with navigating technology; c) Health and well-being facilities; and d) Sense of belongingness, or community
 - Russo-Gleicher, R.J. (2013, January). Qualitative insights into faculty use of student support services with online students at risk: Implications for student retention. *Journal of Educators Online*, 10(1), 1-32. Retrieved from <https://eric.ed.gov/?id=EJ1004894>
 - **Under-utilization of student support services can contribute to a low retention rate found in online courses** – discusses the need to educate and encourage online faculty about using the wide variety of student support services that are available to community college students
 - Travers, S. (2016). Supporting Online Student Retention in Community Colleges: What Data Is Most Relevant? *The Quarterly Review of Distance Education*, 17(4), 49-61.
 - Cites studies that show **lack of student support resources negatively affects online student retention and success.**

Technology Access

- Anders, A.K. (2017, May 24). Equity through access: 21st Century Learning and the Necessity of 1-to-1. *THE Journal*. Retrieved from <https://thejournal.com/Articles/2017/05/24/Equity-Through-Access-21st-Century-Learning-and-the-Necessity-of-1to1.aspx?Page=1>
- Croft, M & Moore, R. (2019, February). *Rural Students: Technology, Coursework, and Extracurricular Activities*. [Report]. ACT Center for Equity in Learning. Retrieved from <https://equityinlearning.act.org/wp-content/themes/voltron/img/tech-briefs/rural-students.pdf>
- Hiefield, M. (2018, October 3). There's more to digital equity than devices and bandwidth. *ISTE*. Retrieved from <https://www.iste.org/explore/Education-leadership/There>

- Krueger, K. & James, J. (2017, March/April). Digital Equity: The Civil Rights Issue of Our Time. NAESP. Retrieved from <https://www.naesp.org/principal-marchapril-2017-technology-all/digital-equity-civil-rights-issue-our-time>
- Office of Ed Tech. (2016, April 18). Building Robust Infrastructure as a Tool for Equity. Medium. Retrieved from <https://medium.com/@OfficeofEdTech/building-robust-infrastructure-as-a-tool-for-equity-7170a3cd8fda>
- Reich, J. (2019). Teaching Our Way to Digital Equity. *The Tech-Savvy School*, 76(5), 30-35. Retrieved from <http://www.ascd.org/publications/educational-leadership/feb19/vol76/num05/Teaching-Our-Way-to-Digital-Equity.aspx>