

General Resources

- SoTL vs DBER: https://nagt.org/nagt/geoedresearch/toolbox/publishing/sotl_dber.html
- Carl Wieman Science Education Initiative, Instructor Resources: http://www.cwsei.ubc.ca/resources/instructor_guidance.htm

Examples of (Pre and Post) Content Assessments

- Clark, S.K., Libarkin, J.C., Kortz, K.M., and Jordan, S.C., 2011, Alternative conceptions of plate tectonics held by nonscience undergraduates: *Journal of Geoscience Education*, v. 59, p. 251-262, doi:10.5408/1.3651696.
- Elkins, J.T., and Elkins, N.M.L., 2007, Teaching geology in the field: Significant geoscience concept gains in entirely field-based introductory geology courses: *Journal of Geoscience Education*, v. 55, p. 126-132, doi:10.5408/1089-9995-55.2.126.
- Gosselin, D.C., and Macklem-Hurst, J.L., 2002, Pre-/post-knowledge assessment of an earth science course for elementary/middle school education majors: *Journal of Geoscience Education*, v. 50, p. 169-175, doi:10.5408/1089-9995-50.2.169.

Examples of Perception Surveys

- Jolley, A., Lane, E., Kennedy, B., and Frappé-Sénéclauze, T-P., 2012, SPESS: a new instrument for measuring student perceptions in earth and ocean science: *Journal of Geoscience Education* v. 60, p. 83-91, doi:10.5408/10-199.1.
- Petcovic, H.L., Stokes, A., and Caulkins, J.L., 2014, Geoscientists' perceptions of the value of undergraduate field education: *GSA Today*, v. 24, p. 4-10, doi:10.1130/GSATG196A.1.

Examples of Classroom Observations

- Hendricks, J.E., Atchison, C.L., and Feig, A.D., 2017, Effective use of personal assistants for students with disabilities: Lessons learned from the 2014 accessible geoscience field trip: *Journal of Geoscience Education*, v. 65, p. 72-80, doi:10.5408/16-185.1.
- Lane, E.S., and Harris, S.E., 2015, A new tool for measuring student behavioral engagement in large university classes: *Journal of College Science Teaching*, v. 44, p. 83-91, doi:10.2505/4/jcst15_044_06_83.
- Smith, M.K., Jones, F.H.M., Gilbert, S.L., and Wieman, C.E., 2013, The Classroom Observation Protocol for Undergraduate STEM (COPUS): A new instrument to characterize university STEM classroom practices: *CBE-Life Sciences Education*, v. 12, p. 618-627, doi:10.1187/cbe.13-08-0154.

Examples of Interviews and Focus Groups

- LaDue, N.D., and Pacheco, H.A., 2013, Critical experiences for field geologists: emergent themes in interest development: *Journal of Geoscience Education*, v. 61, p. 428-436, doi:10.5408/12-375.1.
- Libarkin, J.C., Anderson, S.W., Science, J.D., Beilfuss, M., and Boone, W., 2005, Qualitative analysis of college students' ideas about the earth: Interviews and open-ended questionnaires: *Journal of Geoscience Education*, v. 53, p. 17-26, doi:10.5408/1089-9995-53.1.17.