

Strengths and Limitations of Evidence for Teaching Effectiveness

Evidence	Strengths	Limitations	Suggested Use	Research
Student Feedback				
Course Surveys	<ul style="list-style-type: none"> • These provide the user experience – the student point of view • Students see the instructor many times in a semester. • Student evaluations are fairly low cost and low time to administer. 	<ul style="list-style-type: none"> • Students may not know how to compare their instructor to “best practices” particularly if this is one of the first times they’ve taken a course in this field • Research shows that under-represented instructors (women, people of color) are rated lower than men (and white men in particular) even when skills of each are equivalent. • Student ratings alone are ok for formative decisions but when used for summative, they need to be augmented with other data sources. • Provide little guidance for improvement 	<ul style="list-style-type: none"> • Administered online and connected with an exam or another assignment (Berk, 2005) • Use in conjunction with at least two other forms of evidence (triangulation) 	<ul style="list-style-type: none"> • Carl Wieman - A Better Way to Evaluate Undergraduate Teaching • Ron Berk - A Survey of 12 Strategies to Measure Teaching Effectiveness
Letters, email, informal surveys, and other written comments from current and/or former students:	<ul style="list-style-type: none"> • Genuine comments of impact 	<ul style="list-style-type: none"> • Represents feedback from only a small portion of students • Credibility is hard to measure (skewed either negative or positive) 	<ul style="list-style-type: none"> • Use in conjunction with at least two other forms of evidence (triangulation) 	
Formative Assessment Data				
Scores on exam questions, quizzes, class activities, or assignments	<ul style="list-style-type: none"> • Demonstrates student proficiency in the knowledge and skills outlined in the learning outcomes. • Demonstrates trends in student success over time. • Use of the LMS can aid in data collection and analysis to see trends in student success. 	<ul style="list-style-type: none"> • New teaching practices take time to master and may result in lower student scores during early implementation. • New practices may take multiple attempts to impact student outcomes. • Students’ preconceived notions of how and what is done by instructors may be different than the instructor intends. • Collecting data is time consuming if one does not use the LMS.. 	<ul style="list-style-type: none"> • Choose a key course objective and 1 or 2 associated assessment questions that are aligned with the objective. 	



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<p>Student engagement as captured in checks for understanding, response rates with clickers, etc.</p>	<ul style="list-style-type: none"> • The evidence can be collected frequently and easily. • It gives you an opportunity for “in the moment” changes in teaching practices based on student engagement evidence. • There are numerous formative assessment techniques that are research based. 	<ul style="list-style-type: none"> • Formative assessment techniques are most effective when varied. • A formative assessment technique can lose effectiveness if over used. 		
Peer Feedback				
<p>Peer Observation</p> <p>Possible Tools:</p> <ul style="list-style-type: none"> • COPUS • TILT Observation forms that align with Teaching Effectiveness Framework • Other observation forms in circulation on campus 	<ul style="list-style-type: none"> • Gives an opportunity to receive feedback and develop teaching effectiveness • Could have a positive impact on department culture if done correctly • Gives faculty a chance to see exemplary practices (and not so exemplary ones) and apply to their own practice • Allows instructors to become “diagnosticians” • Opens the door for discussion about teaching among faculty 	<ul style="list-style-type: none"> • It can be a challenge to define who is a peer. • Too much time: 1 or 2 class observations is not sufficient for determining level of effectiveness • Subjective - observers have different ideas of “effectiveness,” potential for bias • Observation training required • Could have a negative impact on department culture if done incorrectly • Departments might need some language on who is a peer. Is it someone in the dept who is at a different/same level in the career? What about someone who is an observer from another dept? • Be careful to not use too many resources (time, etc) 	<ul style="list-style-type: none"> • COPUS aligns with Teaching Practices Inventory (TPI). (See Self-Assessment) 	<ul style="list-style-type: none"> • Berk (2005): distinguishes between peer observation and peer review of teaching materials. • COPUS materials



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<p>COPUS (Classroom Observation Protocol for Undergraduate STEM)</p>	<ul style="list-style-type: none"> Provides an “objective” picture of how time is spent in class - by instructor and students There is a STEM version and a Liberal Arts version and a Learning Assistant version. It provides a third person perspective of what is happening in the class. It captures activity between instructor and student and between students. Hits 2/3 of data triangulation if used in conjunction with the TPI Can be used across disciplines 	<ul style="list-style-type: none"> This scoring format does not stand alone. It requires inter-rater reliability training. It is a snapshot of one class period. The COPUS has observer record student engagement. Engagement behaviors are not clearly articulated or easily observed 	<ul style="list-style-type: none"> Use in conjunction with at least two other forms of evidence (triangulation) 	<ul style="list-style-type: none"> Carl Wieman - A Better Way to Evaluate Undergraduate Teaching COPUS research and materials
<p>Peer Review of Course Material(s)</p> <ul style="list-style-type: none"> Syllabus Assignment(s) Exam(s) Newly developed material, etc. 	<ul style="list-style-type: none"> Can demonstrate alignment between course objectives, class activities, assignments & assessment. Can portray intended tone of course/instruction Opens the door for discussion about teaching among faculty 	<ul style="list-style-type: none"> Might not accurately represent actual teaching Sometimes course materials are inherited from department so they do not represent a particular instructor There are no set standards for quality - control or improvement Departments should determine the measures included in the syllabus (what ought to go in there if it will be used to determine teaching effectiveness) 	<ul style="list-style-type: none"> Use in conjunction with at least two other forms of evidence (triangulation) 	<p>Stanford Teaching Commons Creating a Syllabus</p>



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Self-Reflection and Self-Assessment				
<p>Teaching Effectiveness Framework</p> <ul style="list-style-type: none"> Setting and reflecting on a teaching goal Self-placement on Teaching Effectiveness Framework 	<ul style="list-style-type: none"> Can demonstrate willingness (or lack thereof) to grow as an instructor Self-analysis allows the instructor to get a clearer sense of “what is important” and what the research says about high quality instruction. It gives the instructor ideas. Those who are self-reflective are more effective instructors (Giovannelli 2003) Self-reflection when done in conjunction with departmental goals provides a more holistic picture of status. 	<ul style="list-style-type: none"> Might not accurately represent actual teaching Self-evaluation can be misconstrued; it can be seen as an end point rather than coupled with goals to work toward increasing mastery. (Giovannelli (2003). It can be challenging to determine if faculty are holding themselves to similar standards. 	<ul style="list-style-type: none"> Department determines self-evaluation process and the questions to be addressed by instructor. Berk (2005). 	<p>Giovannelli, M. (2003). J of Ed Research 96(5), pp. 293-309</p>
<p>Examples of Course Improvements (that have been implemented) (with written explanation)</p> <p>Possible improvements:</p> <ul style="list-style-type: none"> Active learning Service learning Alignment of objectives, activities, and assessments Formative assessments 	<ul style="list-style-type: none"> Demonstrates willingness to grow as an instructor Provides an opportunity to measure student growth with tangible results Can help create a culture within a department of continual improvement of teaching 	<ul style="list-style-type: none"> Department will need to determine standards for “improvements” Course improvements may not be implemented based on a pre-set goal. 	<ul style="list-style-type: none"> Course improvements should be strategic and be evaluated based on a pre-set goal. 	
<p>Integration of Service Learning</p>	<ul style="list-style-type: none"> Service learning is proven to improve student engagement and success 	<ul style="list-style-type: none"> Takes planning and coordination with community partners 	<ul style="list-style-type: none"> Faculty will need to demonstrate how service learning ties into course objectives and how students demonstrate this knowledge 	<p>How Service Learning Affects Students</p>



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<p>Integration of Active Learning (samples with written explanation)</p>	<ul style="list-style-type: none"> Active learning is proven to improve student engagement and learning Active learning has been connected to increasing student self-efficacy in the subject area (Sarah Eddy's work) Brain research supports the use of active learning for engagement and student processing of information Teaching with multiple modalities improves learning 	<ul style="list-style-type: none"> Instructor may need to learn how to connect instructional strategies to content knowledge acquisition in order to intentionally promote learning in that field of study 	<ul style="list-style-type: none"> Research suggests active learning supports student success for traditionally underrepresented groups 	<ul style="list-style-type: none"> Teaching as Brain Changing: Exploring... Owens & Tanner Active Learning Increases Student performance...Freeman, Eddy, et al Lee Schulman - Pedagogical Content Knowledge (PCK)
<p>Improvements based on student feedback to instructors/outcomes of improvements</p>	<ul style="list-style-type: none"> Demonstrates willingness to grow as an instructor Feedback is most powerful when faculty use it to inform their teaching (Hattie, 2015) Reacting to student feedback and making adjustments allows students to have a voice in their learning 	<ul style="list-style-type: none"> The instructor might not have control over some feedback Some student expectations might be unrealistic Instructor might not choose feedback that will improve student success It can be cumbersome to analyze large quantities of student feedback. 	<ul style="list-style-type: none"> Will need to define student feedback and/or outcomes 	
<p>Teaching Portfolios</p>	<ul style="list-style-type: none"> Allows for unique characteristics of an instructor Helpful for hiring practices Showcase values of the instructor Showcase a range of skills, attributes and/or dispositions More longitudinal 	<ul style="list-style-type: none"> Time consuming to create and review Variable in what they contain and how they are judged It is more longitudinal 	<ul style="list-style-type: none"> Suggested as evidence for tenure and promotion, rather than annual review 	<p>CSU Evaluating Teaching Effectiveness Task Force recommendations</p>
<p>TPI - Teaching Practices Inventory</p>	<ul style="list-style-type: none"> Promotes/reminds instructors of a range of teaching practices that research indicates improve student learning Much research conducted on the TPI Effective teaching practices can 	<ul style="list-style-type: none"> Relies on faculty self-reporting Measures the use of practices, not how well they are implemented or the impact It is not appropriate for project based courses or seminars that are largely student driven. 	<ul style="list-style-type: none"> Suggest pairing with COPUS. The TPI is a self-reporting tool; COPUS is a peer observation tool that demonstrates integration of actions reported in the TPI. 	<p>TPI research and materials</p>



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	<p>be shared and become “norm” in a department</p> <ul style="list-style-type: none"> • Can be used to collect and analyze data on effective teaching practices • Hits $\frac{2}{3}$ of data triangulation if used in conjunction with the COPUS 			

