



TEACHING EFFECTIVENESS FRAMEWORK

INCLUSIVE PEDAGOGY DOMAIN

Inclusive Pedagogy is a student-centered teaching approach that considers all students' backgrounds, experiences, and learning variabilities. Instructors who ensure equitable access to course materials, foster belonging, and address the needs of a diverse student population create a more robust learning experience for all learners.

Effective instructors use evidence-based inclusive practices that are fundamental to student success.



Curriculum / Curricular Alignment

- Adopt [practices grounded in inclusive curriculum](#)
- Use [backwards design](#) to align all course content, assignments, and assessments
- Add an [inclusivity statement](#) to your syllabus
- Make sure your syllabus, textbooks, resources, and coursework are accessible to all learners according to the CSU [Accessibility by Design](#) website



Classroom Climate

- [Create an inclusive and welcoming environment](#)
- [Help students learn how to communicate](#) equitably and productively with each other
- Provide opportunities for [students to work with others](#) - and for students to see the value of diverse perspectives
- Use the [appropriate language](#) when referring to social groups



Pedagogical Content Knowledge

- [Keep current on issues](#) of racism/sexism, current racial tensions, and contemporary cultural issues in the United States, especially in relation to your discipline
- Proactively address [common student misconceptions](#)
- [Assess prior knowledge of learners](#); use it to plan/revise class sessions



Student Motivation

- [Use content and connections that align with your current group of students'](#) backgrounds, interests, and reasons for taking the course
- [Make content relevant](#) to all students' lives; [clearly link concepts/lessons](#) to industry, a broader purpose, [future classes/activities](#), or a transferable skill
- [Use varied names](#) and socio-cultural contexts in stories, test questions, and assignments



Feedback & Assessment

- Create [rubrics](#) for assignments, papers, and presentations; share rubrics with students when presenting the assignment
- Provide structure and guidelines for student [group work and group assignments](#); guide and reteach [skills](#) for productive, [inclusive group work](#)
- Provide transparent [assignment directions](#): start with this [template](#)
- Use [Classroom Assessment Techniques](#) to check for understanding and to promote mental retrieval and [deep learning](#); this can be done in [residential, hybrid, and online courses](#)
- Vary assessments: quizzes, exams, [assignments](#), papers, projects, simulations, and presentations



Instructional Strategies

- Use a [variety of teaching methods](#) and modalities (verbal, interactive, [Socratic](#), etc.) that align with learning objectives
- Incorporate [Classroom Assessment Techniques](#) for individual processing, partner processing, or small group activities in a variety of teaching modalities
- Use [accessible slide presentations, documents, videos, and other course materials](#)

LEVELED CRITERIA & SELF ASSESSMENT RUBRIC

Use this rubric to reflect on your current instructional practices, set a teaching goal, and monitor growth. TILT recommends revisiting this throughout the year to continue to reflect and adjust as you work towards your goal. TILT does not recommend using this as an observation tool or for direct evaluation. See [TILT's Recommended Process for Annual Review of Teaching](#) to learn more about how to utilize this resource.

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Evidence	Advanced	Proficient	Developing	Emerging
Inclusive Excellence, Training, and Practice: <ul style="list-style-type: none"> Learning about Inclusive Excellence Awareness of student identities in the classroom Mitigation of assumptions, biases, and microaggressions in the classroom 	<p>Has participated in much training on inclusive excellence in teaching and regularly engages in further reading and reflection.</p> <p>Has awareness of student identities in the classroom and uses this knowledge to support student success.</p> <p>Successful in mitigating their own and students' assumptions, biases, and microaggressions in the classroom.</p>	<p>Has participated in some training on inclusive excellence in teaching and has explored some further reading and reflection.</p> <p>Is developing awareness of student identities in the classroom and is beginning to use it to make instructional decisions that support students.</p> <p>Has awareness of their own and students' assumptions, biases, and microaggressions and is beginning to mitigate them in the classroom.</p>	<p>Has participated in some training or reading on inclusive excellence in teaching.</p> <p>Is beginning to develop an awareness of the student identities in the classroom and is beginning to use it to support students.</p> <p>Is developing awareness of their own and students' assumptions, biases, and microaggressions.</p>	<p>Has not yet participated in training or reading on inclusive excellence in teaching.</p> <p>Is not yet aware of all students' identities in their classroom or what impact it has on student success.</p> <p>Has not yet considered their own assumptions and biases in relation to teaching.</p>
Inclusive Teaching Practices <ul style="list-style-type: none"> Use of evidence-based practices from the other six domains of the TEF that are fundamental to being an inclusive instructor 	<p>Intentionally and actively incorporates inclusive teaching practices in all aspects of the curriculum and the classroom to increase awareness, content knowledge, cognitive sophistication, and sense of community for every individual.</p>	<p>Regularly incorporates inclusive teaching practices in planning and delivery of content.</p>	<p>Incorporates some inclusive teaching practices in planning and delivery of content.</p>	<p>Instructor has not yet developed inclusive content or teaching practices.</p>



TEACHING EFFECTIVENESS FRAMEWORK

CURRICULUM & CURRICULAR ALIGNMENT DOMAIN

Curriculum and Curricular Alignment provide the foundation for any course. Instructors who connect course learning objectives, assignments, activities, and assessments provide students with a clear path to success in their course.

Plan your course with evidence-based practices that provide an organized and inclusive foundation for students.



Inclusive Curriculum

- [Choose or create content](#) that deliberately reflects the diversity of contributors to the field
- Adopt [practices grounded in inclusive curriculum](#)
- Use a variety of course materials: [text](#), [video](#), [simulation](#), [games](#), etc. to appeal to a variety of learning preferences
- Use visuals, examples, analogies, and humor that do not reinforce stereotypes but do [include traditionally marginalized people or perspectives to ensure inclusivity](#)
- Know the implications of religious perspectives regarding [course content](#)
- Ensure all of your [course materials](#) are [accessible](#) to all learners




Learning Objectives/ Outcomes

- Use [Bloom's](#) or [Fink's](#) Taxonomy to write [clear and measurable learning outcomes](#)
- Write [outcomes](#) that align with the cognitive demands of the course
- Write short-term [outcomes](#) for units, modules, or daily activities





Course Alignment of Assessments & Activities

- Use [backwards design](#) to align all course content, assignments, and assessments 
- [Align assessments, assignments, and class activities with learning outcomes](#)
- [Align rigor](#) of class activities, discussions, i-clicker questions, etc. with rigor of exams
- Design activities where students [make connections between content and learning outcomes](#)



Syllabus

- Design a [learner-centered](#) syllabus (use [this rubric](#) to assess your syllabus)
- Add an [inclusivity statement](#) to your syllabus 
- Make sure your syllabus, textbooks, resources, and coursework are accessible to all learners according to the CSU [Accessibility by Design](#) website 
- Provide a visual map of the course, including [alignment of objectives to assessments](#)
- Include campus resources for students: [TILT Tutoring](#), [Student Resources and Campus Life](#)



This icon indicates inclusive teaching practices that are fundamental to being an inclusive instructor.

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Evidence	Advanced	Proficient	Developing	Emerging
Inclusive Curriculum <ul style="list-style-type: none"> Variety of curricular materials and assignments Representation and use of materials by scholars from minoritized groups 	Intentional variety is incorporated into most curricular materials and assignments. Purposeful use of materials outside the text with good representation of scholars from minoritized groups.	Variety in several curricular materials and assignments. Some use of materials outside the text, including scholars from minoritized groups.	Minimal variety of curricular materials and assignments. Use of some material other than the text - may or may not include scholars from minoritized groups.	Little to no variety in curricular materials and assignments. May be aware of the need for a variety of materials other than the text and need for materials by scholars from minoritized groups but has not yet integrated them.
Learning Objectives <ul style="list-style-type: none"> Specificity and measurability Aligned with course-level requirements 	All learning objectives are measurable and require evidence of critical thinking and abilities appropriate to the course level.	Most learning objectives are measurable and require evidence of critical thinking and abilities appropriate to the course level.	Some learning objectives are measurable and require evidence of critical thinking and abilities appropriate to the course level; others need specificity.	Learning objectives require more specificity to be measurable and/or require evidence of critical thinking and abilities appropriate to the course level.
Course Alignment <ul style="list-style-type: none"> Alignment between learning objectives, course materials, assessments, and other course content Alignment within the broader discipline Alignment with relation to the greater community/world 	Connections between objectives, course materials, and assessments are an explicit and consistent aspect of the course. Instructor provides clear guidelines and frequent opportunities for students to make connections within the course, the broader discipline, and the world.	Connections between objectives, course materials, and assessments are explicit. Instructor provides clear guidelines and some opportunities for students to make connections within course content and across courses.	Connections between objectives, course materials, and assessments are in the syllabus but not an explicit or consistent aspect of the course. Instructor occasionally provides opportunities for students to make a connection within course content.	Connections between objectives, course materials, and assessments are inconsistent and unclear. Instructor attempts to provide an opportunity for students to make connections within course content, but connections need development.
Syllabus <ul style="list-style-type: none"> Word choice and tone Resources and information Inclusivity statement Organization 	The syllabus sets a supportive, welcoming tone and contains an inclusivity statement, a visual representation of the course, and campus resources for students. It is a succinct and meaningful document that is used throughout the semester.	The syllabus sets a welcoming tone and contains most of the components listed in the "Advanced" column. It is sometimes referred to during the semester.	Syllabus has a neutral tone and contains some of the components listed in the "Advanced" column. It may contain too little or too much information, or the information may need to be more organized to be useful to students.	Word choice in the syllabus sets a negative or unsupportive tone. It does not contain much of the crucial information that supports student success as listed in the "Advanced" column, or the information is not organized well.



TEACHING EFFECTIVENESS FRAMEWORK

Choose from these evidence-based teaching practices to create a safe space for students to learn and to support each other.

CLASSROOM CLIMATE DOMAIN

Classroom Climate refers to the intellectual, social, emotional, and physical environment in which students learn. Instructors who intentionally create a safe space and foster a community of learners find that students are more engaged.




Inclusive and Welcoming Environment

- [Use students' names and pronounce them correctly](#) - use name tents or seating charts in large classes
- Use students' [preferred pronouns](#)
- [Co-create class norms](#) with your students, and establish a system to adhere to them
- [Connect the content to the lived experiences of a variety of students](#)
- Incorporate practices that create a [sense of belonging](#) for students, including [international](#) students, [students of color](#), and students of all gender [identities](#) and all [abilities](#)
- Incorporate [CSU Principles of Community](#) into your class
- Ensure inclusivity and [cultural awareness](#) in your non-verbal communication, language, and symbolic representations
- Be intentional about your [first day](#) of class





Instructor-Student Rapport

- Make time to [answer student questions/create a system](#) where all [students ask questions](#)
- [Talk with students instead of at them](#)
- [Ask students for feedback](#) on your teaching several times a semester; do something with their feedback
- [Be authentic and vulnerable](#)
- [Create a welcoming and respectful environment](#)
- Address bias and [microaggressions](#) in your classroom
- Use the [appropriate language](#) when referring to social groups 
- Do not ask [individuals to speak](#) for an entire group of people



Student-Student Rapport

- Create a system for everyone to [call each other by name](#)
- [Help students learn how to communicate](#) equitably and productively with each other 
- [Encourage students to be experts](#); allow them to teach concepts to each other
- Provide opportunities for [students to work with others](#) - and for students to see the value of diverse perspectives 
- Teach and model [appropriate small group behaviors](#)
- Model [productive disagreement](#), showing how to critique a statement or idea rather than the speaker
- Assess the [physical space](#) of the classroom; consider the space and movement for discussions and activities
- [Engage students in the content](#) - through [discussion](#), activities, and time to think



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Evidence	Advanced	Proficient	Developing	Emerging
Inclusive and Welcoming Environment <ul style="list-style-type: none"> Instructional techniques that build safety and community for all students 	Integrates teaching practices that foster a safe, challenging, supportive, engaged community of learners into all aspects of the course.	Integrates several teaching practices that foster a sense of community and create a challenging, safe, supportive, mostly engaged classroom.	The instructor periodically attempts teaching practices that build community.	Does not attempt teaching practices that build community or does this only during the first week of class.
Instructor-Student Rapport <ul style="list-style-type: none"> Relationship between instructor and students Opportunities for students to provide feedback on teaching Instructor awareness of bias and microaggressions 	Instructor is welcoming, authentic, vulnerable, and respectful of all students. Students actively participate without prompting. Feedback on the course is collected several times throughout the course, shared with students and is used to make instructional decisions. The instructor recognizes and takes action to mitigate bias in their own actions.	Instructor is welcoming, authentic, vulnerable, and respectful of all students much of the time. Students participate with some prompting. Feedback on the course is collected early and/or mid-course and is used to make instructional decisions. Instructor recognizes and takes action to mitigate bias in their own actions.	Instructor is welcoming. Students are encouraged to participate, and some attempt is made to keep them engaged. Feedback on the course is collected mid-course but not shared with students and/or used.	Student engagement is not addressed. Feedback is collected at the end of the course.
Student-Student Rapport <ul style="list-style-type: none"> Frequency and quality of student-student interaction Frequency and quality of opportunities to learn about and from each other 	Teaching practices foster a high level of student-student interaction throughout the course. Instructor creates opportunities for students to learn classmates' names and use protocols for productive communication and group work. Instructor mitigates bias in classroom interactions and brings this awareness to students. Nearly all students engage with and support each other regularly - with and without prompting from the instructor.	Teaching practices prompt student-student interaction throughout the course. Instructor encourages students to learn classmates' names and use protocols for productive communication and group work. Instructor takes action to mitigate bias in classroom interactions and brings this awareness to students. Many students engage with and support each other regularly - with and without prompting from the instructor.	Teaching practices occasionally encourage student-student interaction. Instructor takes action to mitigate bias in classroom interactions. Some students engage with and support each other; some students engage only with prompting from instructor; some do not engage with others at all.	Teaching practices do little to promote student-student engagement. Instructor does not recognize implicit biases that affect classroom interactions. Most students generally do not engage with each other about course content.



TEACHING EFFECTIVENESS FRAMEWORK


PEDAGOGICAL CONTENT KNOWLEDGE DOMAIN

Pedagogical Content Knowledge is the intersection of content and pedagogical expertise. When instructors know their students' prior knowledge and preconceptions, they intentionally choose instructional strategies that work best in their discipline for their current students.

Effective instructors use evidence-based practices to make the connection between their students, the content area, and instructional strategies.





Knowledge of Content and Instructional Strategies

- Determine breadth and depth of content necessary for course level: [align with pre- co-, and subsequent courses](#)
- Present information in a [sequence that makes](#) sense to a (new, intermediate, advanced) learner
- [Scaffold](#) lessons and activities to support students in reaching the level of critical thinking needed to master course objectives
- [Keep current on issues](#) of racism/sexism, racial tensions, and contemporary cultural issues in the United States, especially in relation to your discipline 
- Use a variety of [instructional strategies](#) to engage a [variety of learners](#)
- Determine which [instructional strategies](#) work best for your teaching style and your students
- [Teach students about Bloom's Taxonomy](#) and how it relates to higher level thinking required for course concepts
- Provide [explicit reading strategies for your discipline](#)



Knowledge of Students

- Proactively address [common student misconceptions](#) 
- [Assess prior knowledge of learners](#); use it to plan/revise class sessions 



Information Literacy

Collaborate with librarian to:

- Introduce students to [discipline-specific databases](#) to find relevant information for your assignments
- Support students in [evaluating information sources](#) for credibility and accuracy using the standards of your discipline
- Teach students how to consume information sources (e.g., [research papers](#), blogs, audio visual, data sets, news articles, primary sources) in your discipline
- Demonstrate how to [use information ethically](#)—in accordance with the [CSU Academic Integrity and Honesty](#) guidelines.
- Teach students to [create products](#) (e.g., research papers, blogs, audio visual, data sets, news articles, primary sources) that align with your discipline



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Evidence	Advanced	Proficient	Developing	Emerging
Knowledge of Content and Instructional Strategies <ul style="list-style-type: none"> Discipline based evidence informed instruction Sequencing and level Instructional strategies 	Instructor consistently uses evidence informed instructional strategies for that specific discipline. Instruction and assessments are effectively sequenced, appropriate for the level of students in the course, and consider abilities of current students. Instruction is dynamic and adapted in the moment when necessary.	Instructor uses several instructional strategies known to work for their discipline. Most instruction and assessments are effectively sequenced, appropriate for the level of learners in the course, and consider abilities of current students. Instruction is sometimes adapted in the moment when necessary.	Instructor uses some instructional strategies known to work for their discipline. Some instruction and assessments are effectively sequenced, appropriate to the level of learners in the course, and consider abilities of current students. Instruction is mostly static, one or two adjustments made when necessary.	Instructor uses some instructional strategies that may or may not work for their discipline. Instructor is unaware or unsure of whether concepts are effectively sequenced or appropriate for the level of learners in the course or consider abilities of current students. Instruction is static, no adjustments made for student needs.
Knowledge of Students <ul style="list-style-type: none"> Misconceptions, alternative conceptions, and preconceptions Connections within the course, curriculum and beyond 	The instructor intentionally addresses misconceptions, alternative conceptions, or preconceptions. They regularly make essential connections between course content, other courses in the curriculum, and to contemporary issues in the field.	The instructor addresses several misconceptions, alternative conceptions, or preconceptions. They make many relevant connections between course content, other courses in the curriculum, and to contemporary issues in the field.	The instructor addresses some misconceptions, alternative conceptions, or preconceptions. They occasionally make connections between course content, between courses in the curriculum, and to contemporary issues in the field.	The instructor addresses an occasional misconception. They do little to make clear connections between course content, other courses, and contemporary issues in the field.
Information Literacy <ul style="list-style-type: none"> Collaboration with library resources Level of support 	The instructor works with the discipline-specific librarian to develop students' information literacy skills in relevant course assignments. Students are provided ongoing feedback (commensurate with experience level) in using discipline-specific databases and the ethical evaluation and consumption of data sources—in accordance with academic integrity and honesty guidelines.	The instructor works with the discipline-specific librarian to develop students' information literacy skills in relevant course assignments. Students are provided some feedback (commensurate with experience level) in using discipline-specific databases and the ethical evaluation and consumption of data sources—in accordance with academic integrity and honesty guidelines.	The instructor refers students to library resources for research assignments. Students are encouraged to use discipline-specific databases and ethical evaluation and consumption of data sources—in accordance with academic integrity and honesty guidelines.	The instructor briefly addresses evaluating information sources for accuracy and credibility and the ethical evaluation and consumption of data sources—in accordance with academic integrity and honesty guidelines.
Learning Assistant (LA) and Graduate Teaching Assistant (GTA) Implementation (If applicable)	The instructor acts as instructional guide for colleagues, GTA's, and/or LA's. Weekly meetings are held to prepare LA's and GTA's for upcoming classes to ensure they are ready to support students during class time.	The instructor acts as instructional guide for GTA's and/or LA's. Weekly meetings are held to prepare LA's and GTA's for upcoming classes to ensure they are ready to support students during class time.	One or two meetings are held during the semester to prepare LA's and GTA's. The instructor encourages LA's and GTA's to assist students when asked.	The main role of LA's and GTA's is to grade student work. Little to no interaction with students is encouraged.





TEACHING EFFECTIVENESS FRAMEWORK

Choose from these evidence-based teaching practices to motivate students, especially when content is difficult.




Instructional Motivation Techniques

- [Use content and connections that align with your current group of students'](#) backgrounds, interests, and reasons for taking the course 
- Share your [enthusiasm](#), professional research interests, and experiences with the content
- Promote [growth mindset](#) and students' [resilience](#) by shifting attention to problem solving, appropriately scaled challenges, and working through failure 
- Support students when [working in groups](#)
- Provide opportunities for students to [teach and learn from their peers](#)
- [Teach from everywhere in the room](#), not just from behind the podium



Instructional Language

- Use [positive language](#) when discussing challenging topics
- If students struggle, remind them [they don't know it yet](#) to reinforce that you believe they will eventually reach their goal
- When giving feedback, [use language that honors attempts, promotes growth, and provides hope to students](#)
- [Use varied names](#) and socio-cultural contexts in stories, test questions and assignments 



Instructional Design for Motivation

- Provide opportunities for students to engage in a [variety of learning modalities](#): group learning, [peer learning](#), individual learning, learning with technology, etc.
- Challenge students with deep learning ([case studies](#), [community engaged learning](#), collaborative projects, etc.)
- Acknowledge student effort; [allow room in your grading](#) for risk-taking and error
- [Gauge the rigor of your instruction](#). Is it at a level that will provide the correct learning edge for students?
- [Make content relevant](#) to all students' lives; [clearly link concepts/lessons](#) to industry, a broader purpose, [future classes/activities](#), or a transferable skill



Student Engagement

- Encourage [behavioral, emotional, and cognitive engagement in your course](#)
- Engage students' [emotions](#) to see their potential to make the world a better place

STUDENT MOTIVATION DOMAIN

Student Motivation is sparked by the perceived value or benefit of the academic content or task. When instructors use a variety of researched motivation techniques, student involvement and commitment to learning increases.



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Evidence	Advanced	Proficient	Developing	Emerging
Instructional Motivation Techniques <ul style="list-style-type: none"> Use of motivation techniques 	The instructor connects content with all current students' backgrounds and interests, teaches about and promotes growth mindset, and provides direct support and other motivators for students throughout the semester.	The instructor connects content with most current students' backgrounds or interests, promotes growth mindset and provides support and other motivators for students most of the time.	The instructor connects content with many current students' backgrounds or interests, remains positive and provides some support and other motivators for students when engaging in difficult tasks.	The instructor connects content with some current students' backgrounds or interests and attempts to remain positive.
Instructional Language <ul style="list-style-type: none"> Frequency and quality of motivational/inclusive language used during class 	The instructor consistently uses language that includes all students, encourages students, honors effort, and demonstrates belief in student abilities.	The instructor often uses language that includes all students, encourages students, honors effort, and demonstrates belief in student abilities.	The instructor occasionally uses language that encourages students or demonstrates belief in student abilities. The language might not feel inclusive to all students.	Instructor occasionally uses standard phrases to encourage students (e.g., "good job," "you can do it," "if you read (study, pay attention...), you'll do better on the test") or does not encourage students.
Instructional Design for Motivation <ul style="list-style-type: none"> Variety of learning modalities Modeling of classroom engagement Connections within the course, curriculum, and beyond 	Instructional design is intentional and includes a variety of learning modalities, activities, and connections to engage students with content. Instructor frequently models how students can best engage with content and each other.	Instructional design includes some variety of learning modalities, activities, and connections to engage students with content. Instructor sometimes models how students can best engage with content and each other.	Instructional design includes little variety of learning modalities, activities, or connections to engage students with content. Instructor occasionally models how students can best engage with content and each other.	Instruction includes minimal to no variety of learning modalities or activities, or connections to engage students with content. Instructor does not model how students can engage with content and each other.
Student Engagement <ul style="list-style-type: none"> Frequency and level of student participation 	Most students remain engaged in classroom activity (independently and collaboratively) and demonstrate active pursuit of content knowledge.	Many students remain engaged in classroom activity (independently and collaboratively) and demonstrate interest in content.	Some students are actively engaged in classroom activities either independently or collaboratively; some students appear to not be engaged.	Few students appear to remain engaged in classroom activity or the level of student engagement is unknown.



TEACHING EFFECTIVENESS FRAMEWORK


FEEDBACK & ASSESSMENT DOMAIN

Feedback and Assessment are used to continuously monitor performance and communicate progress and levels of mastery to students. Instructors who incorporate frequent and ongoing assessments are able to use these data to adjust teaching strategies and provide feedback to students about their learning- motivating students to be more self-directed.

Choose from these evidence-based assessment practices to give students frequent and valuable feedback on their learning.






First Four Weeks

- Use low-stakes assessments during the [First Four Weeks](#) of class
- Administer a [mini-exam](#) at the same difficulty level as larger exams
- Structure time for students to engage in [self/peer assessment](#)
- Provide structure and guidelines for student [group work and group assignments](#); guide and reteach [skills](#) for productive, [inclusive group work](#) 




Summative Assessment

- [Align assessments](#) with objectives; share this alignment with students
- Create [rubrics](#) for assignments, papers, and presentations; share rubrics with students when presenting the assignment 
- Use rubrics as a [teaching and learning tool](#)
- Vary assessments: quizzes, exams, [assignments](#), papers, projects, simulations, and presentations 
- Create real-world, [authentic assessment opportunities](#)
- Scaffold large [assignments](#): divide large assignments into small segments, allow for rough drafts, revisions, and [peer feedback](#)
- Give students opportunities to engage in [self/peer](#) assessment drafts of their assignment using the rubric
- Consider [group quizzes or tests](#) in addition to individual testing
- Provide transparent [assignment directions](#): start with this [template](#) 
- Engage students in [project "exemplar" analysis](#) before an assignment is due



Formative Assessment

- Use [Classroom Assessment Techniques](#) to check for understanding and to promote mental retrieval and [deep learning](#) in [residential, hybrid, and online courses](#) 
- Use technology tools to engage students and check for understanding: [iClickers](#), [Kahoot](#), [Jamboard](#), Google
- Use "on the fly" in-class [checks for understanding](#): fist to five, think-pair-share, think-ink-pair-share, thumb-o-meter, etc.
- Be willing to [diverge from your teaching plan](#) if checks for understanding reveal student confusion or knowledge gaps



Feedback

- Give [timely feedback](#)
- Give [specific feedback](#); ask questions or use [sentences like](#), "The best part of this is _____ because" or "I don't have a clear picture of _____"
- Provide guidelines, practice, and support for students to [engage in problem solving](#) or [give feedback](#) to each other
- Make sure students know that formative assessment is a [form of supportive feedback](#)—not all formative assessment needs to be graded
- Encourage students to develop test-preparation and test-taking skills by conducting a [post-test analysis](#)



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LEVELED CRITERIA & SELF ASSESSMENT RUBRIC

Use this rubric to reflect on your current instructional practices, set a teaching goal, and monitor growth. TILT recommends revisiting this throughout the year to continue to reflect and adjust as you work towards your goal. TILT does not recommend using this as an observation tool or for direct evaluation. See [TILT's Recommended Process for Annual Review of Teaching](#) to learn more about how to utilize this resource.

FEEDBACK & ASSESSMENT DOMAIN

Feedback and assessment are used to continuously monitor performance and communicate progress and levels of mastery to students. Instructors who incorporate frequent and ongoing assessments are able to use these data to adjust teaching strategies and provide feedback to students about their learning-motivating students to be more self-directed.

Evidence	Advanced	Proficient	Developing	Emerging
Summative Assessment <ul style="list-style-type: none"> Variety and frequency Alignment with course objectives Scaffolding Assignment examples Assessment criteria 	Assessments are varied, frequent, and aligned with course objectives. At least one real-world authentic assessment is given. All students find assignment directions clear. Large assignments are broken into several parts with instructor or peer feedback. Students engage in analyzing/discussing examples of assignments. Rubrics are co-created with students.	Assessments are mostly varied, frequent, and aligned with course objectives. Most students find assignment directions clear. Large assignments are broken into several parts with instructor or peer feedback. Students engage in analyzing/discussing examples of some assignments. Rubrics are shared with students when an assignment is introduced.	Assessments could be more varied, more frequent, and better aligned with course objectives. Some students may be confused by assignment directions. Large assignments may require a rough draft, but little feedback is given. Students may be provided assignment examples. Assessment criteria is in list form or rubrics shared with students when grade is given.	Assessment variety, frequency, and alignment with course objectives is inconsistent. Many students are confused by assignment directions. Large assignments are turned in for a final grade with little or no opportunity for feedback or improvement. Assessment criteria are simply listed or not shared with students.
Formative Assessment and Feedback <ul style="list-style-type: none"> Class activities Low-stakes assignments/quizzes Formative assessments 	The instructor regularly uses formative assessment strategies and low-stakes activities, assignments, and/or quizzes to gauge student understanding, modify future lessons, make in-the-moment instructional adjustments, and give feedback to students.	The instructor uses several formative assessment strategies and low-stakes activities, assignments, and/or quizzes to gauge student understanding, modify future lessons, make in-the-moment instructional adjustments, and give feedback to students.	The instructor uses one or two formative assessment strategies and low-stakes assignments to give students feedback.	The instructor does not yet use formative assessment strategies or low-stakes assignments to give students feedback.
First Four Weeks <ul style="list-style-type: none"> Early low-stakes assignments and feedback 	The instructor provides an ample number of low-stakes assessments and feedback to students during the first four weeks of class.	The instructor provides some low-stakes assessments and feedback to students during the first four weeks of class.	The instructor provides little feedback to students during the first four weeks of class.	The instructor does not provide feedback to students during the first four weeks of class.
Feedback <ul style="list-style-type: none"> Timely, supportive, constructive, and specific feedback Peer feedback 	Instructor feedback is prompt, supportive, constructive, and specific. Students are taught how to give quality feedback to each other, and peer feedback is a regular component of the course. Students use feedback to improve work before it is assessed.	Instructor feedback is timely, constructive, and specific. Peer feedback is occasionally incorporated into an assignment or activity. Students are encouraged to use feedback to improve work before it is assessed.	Instructor feedback is timely but may have limited detail. Students are encouraged to use instructor feedback to improve future work. Students may engage in peer feedback for one assignment.	Instructor feedback is limited and is not returned to students in time to use it to inform subsequent work. Students do not engage in peer feedback.



TEACHING EFFECTIVENESS FRAMEWORK



Choose from these evidence-based teaching practices to engage students in their learning.

INSTRUCTIONAL STRATEGIES DOMAIN

Instructional Strategies that are most effective provide an active and engaging experience for learners. Instructors who use a variety of evidence-based teaching strategies create an environment for increased student engagement and critical thinking.




Active Learning

- Use a [variety of teaching methods](#) and modalities (verbal, interactive, [Socratic](#), etc.) that align with learning objectives 
- Use [Think Pair Share](#) to engage students, [break up lecture](#), or check for student understanding
- Incorporate [Classroom Assessment Techniques](#) for individual processing, partner processing, or small group activities in a variety of teaching modalities 
- Engage students in [Community Engaged Learning](#) that meets academic and community needs
- Support deep understanding of concepts with [peer-to-peer instruction](#)
- Use [discussion protocols](#) for an equitable discussion experience
- Grab students' attention during the [first five minutes](#) of class; finish strong in the [last five minutes](#)
- Support content retention and critical thinking with [Writing Across the Curriculum](#) activities
- Promote deep learning and problem solving with [case studies](#): ([science case studies](#))
- Host [online discussions](#) in the Canvas LMS
- Use instructional strategies that have a [proven effect size](#) on student learning:
 - Use the [Jigsaw Method](#) for peer learning
 - Give students the opportunity to be the expert with [Reciprocal Teaching](#)
 - Reverse the traditional order of teaching with [Inductive Teaching](#)
 - Provide [graphic organizers](#) to students to support student understanding
 - Provide support, clarity, and structure to students by [scaffolding](#) learning and assignments
 - Prime students for learning by activating [prior knowledge](#)
 - Help students organize knowledge with [Concept Mapping](#), ([student directions](#))
 - Add structure to [Collaborative Learning](#) for successful groupwork
 - Enhance critical thinking with [Problem Solving Teaching](#) or [Problem-based Learning](#)



Learning Technology

- Use [accessible slide presentations, documents, videos, and other course materials](#) 
- Provide students with the [ATRC Quick Start Guides](#) to share the free assistive technology tools available at CSU
- Intentionally choose learning technologies that enhance student engagement. Popular apps include: [Padlet](#), [Kahoot](#), [Jamboard](#), [Flippity](#), [Quizlet](#), [Edpuzzle](#), [Flipgrid](#), [iClickers](#)
- Ensure your [Canvas](#) classroom materials are accessible:
 - Run the [UDOIT for Canvas](#) tool to check your course for accessibility compliance
 - Share [ReadSpeaker for Canvas](#) tool with students
- Use Canvas, [Echo360](#), or [Microsoft Teams](#) to record videos; limit instructional videos to [less than 15 minutes](#)
- Work with [Classroom Support Services](#) to learn how to use classroom technology as well as report classroom technology problems



Science of Learning

- Intentionally embed [Science of Learning](#) practices into your instruction
- Align [questions with the level of thinking](#) you want from students
- Guide students in the [three phases of learning](#) (surface, deep, and transfer) to retain, understand, and then apply knowledge to a new context
- Design classes so that students engage in [Predicting](#), [Interleaving](#), [Connecting](#), [Practicing](#)
- Avoid cognitive overload for students and allow time for [metacognition](#)
- Incorporate [elaboration](#), [spacing](#), and [frequent quizzing/testing](#)



This icon indicates inclusive teaching practices that are fundamental to being an inclusive instructor.

See [TILT's Recommended Process for Annual Review of Teaching](#) to learn more about how to utilize this resource

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LEVELED CRITERIA & SELF-ASSESSMENT RUBRIC

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INSTRUCTIONAL STRATEGIES DOMAIN

Instructional Strategies that are most effective provide an active and engaging experience for learners. Instructors who use a variety of evidence-based teaching strategies create an environment for increased student engagement and critical thinking.

Evidence	Advanced	Proficient	Developing	Emerging
Active Learning <ul style="list-style-type: none"> Variety of instructional strategies Frequency of opportunities for participation 	The instructor uses a variety of instructional strategies during all class sessions to increase student engagement, critical thinking, understanding, and connections to learning objectives.	The instructor uses a variety of instructional strategies during many class sessions to increase student engagement, critical thinking, understanding, and connections to learning objectives.	The instructor uses a few instructional strategies during some class sessions to increase student engagement, critical thinking, understanding, and connections to learning objectives.	The instructor uses one or two instructional strategies during some class sessions to increase student engagement, critical thinking, understanding, and connections to learning objectives.
Learning Technology <ul style="list-style-type: none"> Presentation slides Canvas content Learning apps Adherence to assistive technology resource guidelines 	All technology and visual presentations are used intentionally, align with course outcomes, and adhere to assistive technology resource guidelines. Instructor provides rationale and support for all technology use during class.	Most technology and visual presentations are used intentionally, align with course outcomes, and adhere to assistive technology resource guidelines. Instructor provides support for most technology use during class.	Some technology and visual presentations are used intentionally, align with course outcomes, and adhere to assistive technology resource guidelines. Instructor provides support for technology use during class if students ask.	Technology and visual presentations are used but do not yet align with course outcomes or adhere to assistive technology resource guidelines. Instructor may provide support for technology use during office hours.
Science of Learning <ul style="list-style-type: none"> Course structure Structure of assignments and class activities 	The instructor designs the entire course with the science of learning in mind with an emphasis on practice, metacognition, and learning for transfer. During class, students practice the level of thinking needed to complete tasks, assignments, or assessments.	The instructor makes many curricular and instructional decisions with the science of learning in mind. Students are aware of the level of thinking needed to complete tasks, assignments, or assessments.	The instructor makes a few instructional and curricular decisions that align with the science of learning.	Course design and instructional practices do not yet align with the science of learning.

References

- Adams, M., Bell, L.A., & Griffin, P. (Eds) 2007. *Teaching for Diversity and Social Justice* (2nd ed). Routledge, Taylor & Francis Group, NY
- "Am I overreacting?" *Understanding and Combating Microaggressions*. (2016, July 27). Higher Education Today. <https://www.higheredtoday.org/2016/07/27/understanding-and-combatting-microaggressions-in-postsecondary-education/>
- Bernacchio, C., Ross, F., Washburn, K. R., Whitney, J., & Wood, D. R. (2007). Faculty Collaboration to Improve Equity, Access, and Inclusion in Higher Education. *Equity & Excellence in Education*, 40(1), 56-66. <https://doi.org/10.1080/10665680601066511>
- Brown McNair, T., Albertine, S., Cooper, M. A., McDonald, N., Major Jr., T. (2016). *Becoming a student-ready college: A new culture of leadership for student success*. San Francisco, CA: Jossey-Bass.
- Chávez, A. F., Longerbeam, S. D. (2016). *Teaching across cultural strengths*. Sterling, VA: Stylus Publishing.
- Friere, P. (2005). *Pedagogy of the oppressed*. (30th anniversary ed). New York, NY: Continuum International Publishing Group Inc.
- Fuentes, M. A., Zelaya, D. G., & Madsen, J. W. (2020). Rethinking the Course Syllabus: Considerations for Promoting Equity, Diversity, and Inclusion. *Teaching of Psychology*, 48(1), 009862832095997. <https://doi.org/10.1177/0098628320959979>
- Gunwardena, C. N., Ortegano-Layne, L., Carabajal, K., Frechette, C., Lindemann, K., & Jennings, B. (2006). New Model, New Strategies: Instructional design for building online wisdom communities. *Distance Education*, 27(2). <https://doi.org/10.1080/01587910600789613>
- Hackman, H. W. (2005). Five Essential Components for Social Justice Education. *Equity & Excellence in Education*, 38(2), 103-109. <https://doi.org/10.1080/10665680590935034>
- Holroyd, J., Scaife, R., & Stafford, T. (2017). Responsibility for implicit bias. *Philosophy Compass*, 12(3), e12410. <https://doi.org/10.1111/phc3.12410>
- Johnson, D., Johnson, R., & Smith, K. (2013). *Cooperative Learning: Improving University Instruction By Basing Practice On Validated Theory* *Journal on Excellence in University Teaching*. https://karlsmithmn.org/wp-content/uploads/2017/08/Johnson-Johnson-Smith-Cooperative_Learning-JECT-Small_Group_Learning-draft.pdf
- Ladson-Billings, G. (1995). Towards a theory of culturally relevant pedagogy. *American Educational Research Journal*, 32(3), pp. 465-491.
- Lee, A., Poch, R. O'Brien, M. K., Solheim, C. (2017). *Teaching interculturality: A framework for integrating disciplinary knowledge and intercultural development*. Sterling, VA: Stylus Publishing.
- Lieberman, M. (2018, April 11). What online teachers have learned from teaching online. Inside Higher Ed. Retrieved from <https://www.insidehighered.com/digital-learning/article/2018/04/11/veteran-online-instructors-share-tips-improving-their-practices>
- LSE Resources. (2017). LSE Resources. <https://lse.ascb.org/evidence-based-teaching-guides/inclusive-teaching/developing-self-awareness/>
- Meyer, A., Rose, D. H. & Gordon, D. (2014). *Universal Design for Learning: Theory and Practice*. Wakefield, MA: CAST, Inc.
- Milheim, K. (2017). A fundamental look at cultural diversity and the online classroom. eLearn Magazine. Retrieved from <https://elearnmag.acm.org/archive.cfm?aid=3041614>.
- Pedagogical Choices - LSE Resources*. (n.d.). Retrieved July 18, 2023, from <https://lse.ascb.org/evidence-based-teaching-guides/inclusive-teaching/pedagogical-choices/#belonging>
- Quaye, S. J. & Harper, S. R. (2007). Faculty accountability for culturally inclusive pedagogy and curricula. *Liberal Education*, 93(3), AAC&U.
- Rendón, L. I. (2014). *Sentipensante pedagogy: Educating for wholeness, social justice and liberation*. Sterling, VA: Stylus Publishing.
- Whistling Vivaldi*. (n.d.). Wwnorton.com. Retrieved July 18, 2023, from <https://wnorton.com/books/9780393339727>

Curriculum & Curricular Alignment

References

- Ambrose, S. A., Bridges, M. W., DiPietro, M., Lovett, M. C., & Norman, M. K. (2010). How Do Students Develop Mastery? How learning works (pp. 91-120). John Wiley & Sons.
- Boettcher, J. V., & Conrad R. (2016), The online teaching survival guide: Simple and practical pedagogical tips (2nd ed.). San Francisco, CA: Jossey-Bass.
- Derting, T. L., & Ebert-May, D. (2017, October 13). *Learner-Centered Inquiry in undergraduate biology: Positive relationships with long-term student achievement*. CBE-Life Sciences Education. <https://www.lifescied.org/doi/10.1187/cbe.10-02-0011>
- Fink, L. D. (2013) Creating significant learning experiences: An integrated approach to designing college courses (2nd ed.). San Francisco, CA: Jossey-Bass.
- Horsley, M., Knight, B., & Huntly, H. (2010). The role of textbooks and other teaching and learning resources in higher education in Australia: change and continuity in supporting learning. *IARTEM E-Journal*, 3(2), 43-61. <https://doi.org/10.21344/iartem.v3i2.787>
- Maxwell, J., & Stang, J. (2015). *Making the most of demonstrations, videos, animations, or simulations in lectures and laboratories*. https://cwsei.ubc.ca/sites/default/files/cwsei/resources/instructor/Demo_WorkshopSummary_CWSEI-EOY2015_2page.pdf
- Meyers, N. M., & Nulty, D. D. (2009). How to use (five) curriculum design principles to align authentic learning environments, assessment, students' approaches to thinking and learning outcomes. *Assessment & Evaluation in Higher Education*, 34(5), 565-577. <https://doi.org/10.1080/02602930802226502>
- Uchiyama, K.P., Radin, J.L. Curriculum Mapping in Higher Education: A Vehicle for Collaboration. *Innov High Educ* 33, 271-280 (2009). <https://doi.org/10.1007/s10755-008-9078-8>
- Wiggins, G., & McTighe, J. (2005), Understanding by design (2nd ed.). Alexandria, VA; Association for Supervision and Curriculum Development
- Yakovleva, N. O., & Yakovlev, E. V. (2014). Interactive teaching methods in contemporary higher education. *Pacific Science Review*, 16(2), 75-80. <https://doi.org/10.1016/j.pscr.2014.08.016>

Classroom Climate

References

- Barr, J. J. (2016). Developing a positive classroom climate. The IDEA Center, IDEA Paper #61(October 2016).
https://www.ideaedu.org/Portals/0/Uploads/Documents/IDEA%20Papers/IDEA%20Papers/PaperIDEA_61.pdf
- Barry J. Fraser, David F. Treagust & Norman C. Dennis (1986) Development of an instrument for assessing classroom psychosocial environment at universities and colleges, *Studies in Higher Education*, 11:1, 43-54, DOI: 10.1080/03075078612331378451
- Benefits, Definitions, and Underpinnings* – LSE Resources. (n.d.). Retrieved July 18, 2023, from <https://lse.ascb.org/evidence-based-teaching-guides/group-work/benefits-definitions-and-underpinnings/>
- Blackmon, Zachary & O'Hara, Robert & Viars, Jordan. (2020). Microaggressions, Sense of Belonging, and Sexual Identity in the Residential Environment.
- Claro, S., Paunesku, D., & Dweck, C. S. (2016). Growth mindset tempers the effects of poverty on academic achievement. *Proceedings of the National Academy of Sciences*, 113(31), 8664-8668. <https://doi.org/10.1073/pnas.1608207113>
- College and University Classroom Environment Inventory (CUCEI) Fraser: 7 psychosocial dimensions of actual or preferred classroom environment: personalization, involvement, student cohesiveness, satisfaction, task orientation, innovation, and individualization. Fraser, B.J. & Treagust, D.F. *High Educ* (1986) 15: 37. <https://doi-org.ezproxy2.library.colostate.edu/10.1007/BF00138091>
- Contact Support*. (n.d.). Masterplan.highered.colorado.gov. Retrieved July 18, 2023, from [http://masterplan.highered.colorado.gov/wp-content/uploads/2020/09/CDHE-Creating-a-Positive-Classroom-Climate.pdf%20\(pp.%2010-11\)](http://masterplan.highered.colorado.gov/wp-content/uploads/2020/09/CDHE-Creating-a-Positive-Classroom-Climate.pdf%20(pp.%2010-11))
- Cooper, K. M., Haney, B., Krieg, A., & Brownell, S. E. (2017). What's in a Name? The Importance of Students Perceiving That an Instructor Knows Their Names in a High-Enrollment Biology Classroom. *CBE—Life Sciences Education*, 16(1), ar8. <https://doi.org/10.1187/cbe.16-08-0265>
- Fraser B.J. (2012) Classroom Learning Environments: Retrospect, Context and Prospect (pp. 1191-1239). In: Fraser B., Tobin K., McRobbie C. (Eds.). *Second International Handbook of Science Education*. Springer International Handbooks of Education, vol 24. Springer, Dordrecht
- Freeman, T. M., Anderman, L. H., & Jensen, J. M. (2007). Sense of Belonging in College Freshmen at the Classroom and Campus Levels. *The Journal of Experimental Education*, 75(3), 203-220. <https://doi.org/10.3200/jexe.75.3.203-220>
- Fuentes, M. A., Zelaya, D. G., & Madsen, J. W. (2020). Rethinking the Course Syllabus: Considerations for Promoting Equity, Diversity, and Inclusion. *Teaching of Psychology*, 48(1), 009862832095997. <https://doi.org/10.1177/0098628320959979>
- Google Scholar. (n.d.). Scholar.google.com. Retrieved July 18, 2023, from https://scholar.google.com/scholar_lookup?hl=en&volume=13&publication_year=1980&pages=321-341&journal=Res+High+Educ&author=P+Cohen&title=Effectiveness+of+student-rating+feedback+for+improving+college+instruction%3A+a+meta-analysis+of+findings
- Google Scholar. (n.d.). Scholar.google.com. Retrieved July 18, 2023, from https://scholar.google.com/scholar_lookup?hl=en&volume=5&publication_year=2004&pages=217-231&journal=Active+Learn+Higher+Educ&author=M+Diamond&title=The+usefulness+of+structured+mid-term+feedback+as+a+catalyst+for+change+in+higher+education+classes
- Howard, Jay R., and Weimer, Maryellen. 2015. *Discussion in the College Classroom: Getting Your Students Engaged and Participating in Person and Online*. San Francisco: Jossey-Bas
- Johnson, D. I. (2009). Connected Classroom Climate: A Validity Study, *Communication Research Reports*, 26(2), pp. 146-157, DOI: 10.1080/08824090902861622
- Strayhorn, T. L. (2019). *College students' sense of belonging: A key to educational success for all students*. (2nd ed.). New York, NY: Routledge.
- Syllabus Design*. (n.d.). Vanderbilt University. <https://cft.vanderbilt.edu/guides-sub-pages/syllabus-design/>
- Vaccaro, A., Daly-Cano, M., & Newman, B. M. (2015). A Sense of Belonging Among College Students With Disabilities: An Emergent Theoretical Model. *Journal of College Student Development*, 56(7), 670-686. doi: 10.1353/csd.2015.0072
- Wagner, J. L., Smith, K. J., Johnson, C., Hilaire, M. L., & Medina, M. S. (2022). Best Practices in Syllabus Design. *American Journal of Pharmaceutical Education*, 8995. <https://doi.org/10.5688/ajpe8995>

Pedagogical Content Knowledge

References

- Derting, T. L., & Ebert-May, D. (2017, October 13). *Learner-Centered Inquiry in undergraduate biology: Positive relationships with long-term student achievement*. CBE-Life Sciences Education. <https://www.lifescied.org/doi/10.1187/cbe.10-02-0011>
- Guerriero, S. (2017). *Teachers' Pedagogical Knowledge and the Teaching Profession Background Report and Project Objectives*. https://www.oecd.org/education/cei/Background_document_to_Symposium_ITEL-FINAL.pdf
- Herring, M. C., Koehler, M. J. & Mishra, P. (Eds.). (2016). *Handbook of Technological Pedagogical Content Knowledge (TPACK) for Educators* (2nd ed.). New York, NY: Routledge.
- Lee, C., Saat, R., Loke, H., Pendidikan, I., Kampus, G., Razak, T., & Com, S. (2015). The Knowledge of Teaching-Pedagogical Content Knowledge (PCK). In *The Malaysian Online Journal of Educational Science*. <https://files.eric.ed.gov/fulltext/EJ1085915.pdf>
- Magnusson, S. J., Borko, H., & Krajcik, J. S. (1999). Nature, sources, and development of pedagogical content knowledge for science teaching. In J. Gess-Newsome & N. Lederman (Eds.), *Examining Pedagogical Content Knowledge* (pp. 95-132). Boston, MA: Kluwer Press.
- NARST. (2018). *Pedagogical Content Knowledge: Teachers' Integration of Subject Matter, Pedagogy, Students, and Learning Environments* NARST. Narst.org. <https://narst.org/research-matters/pedagogical-content-knowledge>
- Oleson, A. & Hora, M. T. (October 23, 2013). Teaching the way they were taught? Revisiting the sources of teaching knowledge and the role of prior experience in shaping faculty teaching practices. *Higher Education*. DOI 10.1007/s10734-013-9678-9
- Porter, L., Bailey Lee, C., & Simon, B. (2013, March). Halving fail rates using peer instruction: a study of four computer science courses. In *Proceeding of the 44th ACM technical symposium on Computer science education* (pp. 177-182).
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, vol 15(2), pp. 4-14.

Student Motivation

References

- Belcher, A., Hall, B. M., Kelley, K., & Pressey, K. L. (2015) An analysis of faculty promotion of critical thinking and peer interaction within threaded discussions. Online Learning, (19)4. <https://doi.org/10.24059/olj.v19i4.544>
- Canning, E. A., Muenks, K., Green, D. J., & Murphy, M. C. (2019). STEM faculty who believe ability is fixed have larger racial achievement gaps and inspire less student motivation in their classes. ScienceAdvances, 5(2). DOI: [10.1126/sciadv.aau4734](https://doi.org/10.1126/sciadv.aau4734)
- Chaiklin, S. (2003). The zone of proximal development in Vygotsky's analysis of learning and instruction. In Kozulin, A., Gindis, B., Ageyev, V. S. & Miller, S. M. (Eds.), Vygotsky's educational theory in cultural context (39-64). Cambridge: Cambridge University Press.
- Claro, S., Paunesku, D. & Dweck, C.S. (2016). Growth mindset tempers the effects of poverty on academic achievement. Proceedings of the National Academy of Sciences of the United States of America, (116)31, 8664-8668. <https://doi.org/10.1073/pnas.1608207113>
- Dweck, C. (June 26, 2018). Growth mindset interventions yield impressive results. The Conversation. Retrieved from <https://theconversation.com/growth-mindset-interventions-yield-impressive-results-97423>
- Eccles, J. S., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M., Meece, J. L. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), Achievement and achievement motivation (pp. 74-146). San Francisco: W.H. Freeman.
- Eddy, S. L. & Brownell, S. E. (2016). Beneath the numbers: A review of gender disparities in undergraduate education across science, technology, engineering, and math disciplines. Physical Review Physics Education Research, 12(2). DOI <https://doi.org/10.1103/PhysRevPhysEducRes.12.020106>
- Freeman, T. M., Anderman, L. H., & Jensen, J. M. (2007). Sense of Belonging in College Freshmen at the Classroom and Campus Levels. *The Journal of Experimental Education*, 75(3), 203-220. <https://doi.org/10.3200/jexe.75.3.203-220>
- Fuentes, M. A., Zelaya, D. G., & Madsen, J. W. (2020). Rethinking the Course Syllabus: Considerations for Promoting Equity, Diversity, and Inclusion. *Teaching of Psychology*, 48(1), 009862832095997. <https://doi.org/10.1177/0098628320959979>
- Gibbs, G., & Simpson, C. (2005). Conditions Under Which Assessment Support Students' Learning [Review of *Conditions Under Which Assessment Support Students' Learning*]. *Learning and Teaching in Higher Education*, 1, 10-11. <https://eprints.glos.ac.uk/3609/1/LATHE%201.%20Cond>
- Good, C., Rattan, A., & Dweck, C. S. (2012). Why do women opt out? Sense of belonging and women's representation in mathematics. *Journal of Personality and Social Psychology*, 102(4), 700-717. <http://dx.doi.org/10.1037/a0026659>
- Google Scholar. (n.d.). Scholar.google.com. Retrieved July 18, 2023, from https://scholar.google.com/scholar_lookup?hl=en&volume=13&publication_year=1980&pages=321-341&journal=Res+High+Educ&author=P+Cohen&title=Effectiveness+of+student-rating+feedback+for+improving+college+instruction%3A+a+meta-analysis+of+findings

Student Motivation

References (continued)

- Google Scholar. (n.d.). Scholar.google.com. Retrieved July 18, 2023, from https://scholar.google.com/scholar_lookup?hl=en&volume=5&publication_year=2004&pages=217-231&journal=Active+Learn+Higher+Educ&author=M+Diamond&title=The+usefulness+of+structured+mid-term+feedback+as+a+catalyst+for+change+in+higher+education+classes
- Guo, P. J. (2013, November 13) Optimal video length for student engagement. Retrieved from <https://blog.edx.org/optimal-video-length-student-engagement>
- Hulleman, C. S., Barron, K. E., Kosovich, J. J. & Lazowski, R. A. (2016). Student motivation: Current theories, constructs, and interventions within an expectancy-value framework. In Lipnevich, A. A., Preckel, F. & Roberts, R. D. (Eds.), *Psychosocial skills and school systems in the 21st century*. (pp. 241-278). Switzerland: Springer.
- Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and Research in Education*, 7(2), 133-144.
- Pajares, F. (1996). Self-efficacy beliefs in achievement settings. *Review of Educational Research*, 66, pp. 543-578.
- Pintrich, P. R. (2003). A Motivational Science Perspective on the Role of Student Motivation in Learning and Teaching Contexts. *Journal of Educational Psychology*, 95(4), 667-686. <https://doi.org/10.1037/0022-0663.95.4.667>
- Shibboleth Authentication Request. (n.d.). Ezproxy2.Library.colostate.edu. Retrieved July 18, 2023, from <https://www.proquest.com/docview/917232897/fulltextPDF/920E706642544FC0PQ/1?accountid=10223>
- Sisk, V. F., Burgoyne, A. P., Jingze, S., Butler, J. L. & Macnamara, B. N. (2018). To what extent and under which circumstances are growth mind-sets important to academic achievement? Two Meta-analyses. *Psychological Science*, 29 (4), 549-571. <https://doi.org/10.1177/0956797617739704>
- Vygotsky, L. S. (1978). Interaction between learning and development (M. LopezMorillas, Trans.). In M. Cole, V. John-Steiner, S. Scribner, & E. Souberman (Eds.), *Mind in society: The development of higher psychological processes* (pp. 79-91). Cambridge, MA: Harvard University Press.
- Weiner, B. (1972). *Theories of motivation: From mechanism to cognition*. Oxford, England: Markham.
- Zhou, H. (2015). A systematic review of empirical studies on participants' interactions in internet-mediated discussion boards as a course component in formal higher education settings. *Online Learning* (19)3. <https://doi.org/10.24059/olj.v19i3.495>

Feedback and Assessment

References

- Angelo, T., & Cross, K. (1993). *Classroom assessment techniques : a handbook for college teachers* (2nd ed.). San Francisco: Jossey-Bass Publishers.
- Barr, J. J. (2016). Developing a positive classroom climate. The IDEA Center, IDEA Paper #61(October 2016).
https://www.ideaedu.org/Portals/0/Uploads/Documents/IDEA%20Papers/IDEA%20Papers/PaperIDEA_61.pdf
- Black, P., & Wiliam, D. (2009). Developing the theory of formative assessment. *Educational Assessment, Evaluation and Accountability*, 21(1), 5-31.
<http://dx.doi.org/10.1007/s11092-008-9068-5>
- Caldwell, J. E. (2007). Clickers in the Large Classroom: Current Research and Best-Practice Tips. *CBE– Life Sciences Education*, 6(1), 9-20. <https://doi.org/10.1187/cbe.06-12-0205>
- Darby, F. (2019). *Small Teaching Online*. San Francisco, CA: Jossey-Bass.
- Gibbs, G., & Simpson, C. (2005). Conditions Under Which Assessment Support Students' Learning [Review of *Conditions Under Which Assessment Support Students' Learning*]. *Learning and Teaching in Higher Education*, 1, 10-11. <https://eprints.glos.ac.uk/3609/1/LATHE%201.%20Cond>
- Ladyshevsky, R. K. (2013). Instructor presence in online courses and student satisfaction. *International Journal for the Scholarship of Teaching and Learning*, 7(1).
<https://doi.org/10.240429/ijstol.2013.070113>
- Lehman, R. M., & Conceicao, S. C. (2010). *Creating a Sense of Presence in Online Teaching: How to "Be There" for Distance Learners*. San Francisco, CA: Jossey-Bass.
- Lipnevich, A. A and Smith, J. K. (2008). Response to Assessment Feedback: The Effects of Grades, Praise, and Source of Information. ETS Research Report ETS RR-08-30. Princeton, NJ: Educational Testing Service. <https://www.ets.org/Media/Research/pdf/RR-08-30.pdf>
- McDaniel, M. A., Anderson, J. L., Derbish, M. H., & Morrisette, N. (2007). Testing the testing effect in the classroom. *European Journal of Cognitive Psychology*, 19(4-5), 494-513.
- Meer, N. M., Chapman, A. (2014). Assessment for confidence: Exploring the impact that low stakes assessment design has on student retention. *The International Journal of Management Education*, 12, 186-192. <https://doi.org/10.1016/j.ijme.2014.01.003>
- Myers, C.B. & Myers, S.M. (2007). Innovation in High Education 31: 227. <https://doi-org.ezproxy2.library.colostate.edu/10.1007/s10755-006-9020-x>
- Pennebaker JW, Gosling SD, Ferrell JD (2013). Daily Online Testing in Large Classes: Boosting College Performance while Reducing Achievement Gaps. *PLoS ONE* 8(11): e79774. <https://doi.org/10.1371/journal.pone.0079774>
- Policy Review: Creating Student-Centered Course Policies – Equity Accelerator*. (n.d.). Retrieved July 18, 2023, from <https://collegetransitioncollaborative.org/policy-review/>
- Rhodes, M., Cleary, A., & DeLosh, E. (2020). *A guide to effective studying and learning: practical strategies from the science of learning*. New York, NY: Oxford University Press.
- Roediger, H. L. (2013). Applying cognitive psychology to education: Translational educational science. *Psychological Science in the Public Interest*, 14, 1-3.
- Sadler, D. R. (2008). Transforming Holistic Assessment and Grading into a Vehicle for Complex Learning. *Assessment, Learning and Judgement in Higher Education*, 1-19.
https://doi.org/10.1007/978-1-4020-8905-3_4
- Stevens, D. D. & Levi, A. J. (2012) *Introduction to rubrics: An assessment tool to save grading time, convey effective feedback and promote student learning* (2nd ed.). Sterling, VA: Stylus Publishing.
- Syllabus Design*. (n.d.). Vanderbilt University. <https://cft.vanderbilt.edu/guides-sub-pages/syllabus-design/>
- Tanner, K. D. (2013). Structure Matters: Twenty-One Teaching Strategies to Promote Student Engagement and Cultivate Classroom Equity. *CBE–Life Sciences Education*, 12(3), 322-331. <https://doi.org/10.1187/cbe.13-06-0115>
- Two-Stage Exams*. (2014). https://cwsei.ubc.ca/sites/default/files/cwsei/resources/instructor/Two-stage_Exams.pdf
- Walck-Shannon, E. M., Cahill, M. J., McDaniel, M. A., & Frey, R. F. (2019). Participation in Voluntary Re-quizzing Is Predictive of Increased Performance on Cumulative Assessments in Introductory Biology. *CBE–Life Sciences Education*, 18(2), ar15. <https://doi.org/10.1187/cbe.18-08-0163>
- Walvoord, B. E., & Anderson, V. J. (2010). *Effective grading: A tool for learning and assessment in college* (2nd ed.). San Francisco, CA: Jossey-Bass.

References

- Active Learning: A Practical Guide for College Faculty, Magna Publications 2017
- Ambrose, S.A., Brides, M.W., Lovett, M.C., DiPietro, M., & Norman, M.K. (2010). How learning works: Seven research-based principles for smart teaching. San Francisco: Jossey-Bass.
- Anderson, T. (1997). Integrating Lectures and Electronic Course Materials. *Innovations in Education and Training International*, 34(1), 24-31.
<https://doi.org/10.1080/1355800970340105>
- Atkinson, R. K., Derry, S. J., Renkl, A., & Wortham, D. (2000). Learning from Examples: Instructional Principles from the Worked Examples Research. *Review of Educational Research*, 70(2), 181-214. <https://doi.org/10.3102/00346543070002181>
- Benefits, Definitions, and Underpinnings - LSE Resources. (n.d.). Retrieved July 18, 2023, from <https://lse.ascb.org/evidence-based-teaching-guides/group-work/benefits-definitions-and-underpinnings/>
- Caldwell, J. E. (2007). Clickers in the Large Classroom: Current Research and Best-Practice Tips. *CBE— Life Sciences Education*, 6(1), 9-20. <https://doi.org/10.1187/cbe.06-12-0205>
- Contact Support. (n.d.). Masterplan.highered.colorado.gov. Retrieved July 18, 2023, from [http://masterplan.highered.colorado.gov/wp-content/uploads/2020/09/CDHE-Creating-a-Positive-Classroom-Climate.pdf%20\(pp.%2010-11\)](http://masterplan.highered.colorado.gov/wp-content/uploads/2020/09/CDHE-Creating-a-Positive-Classroom-Climate.pdf%20(pp.%2010-11))
- Crouch, C., Fagen, A. P., Callan, J. P., & Mazur, E. (2004). Classroom demonstrations: Learning tools or entertainment? *American Journal of Physics*, 72(6), 835-838.
<https://doi.org/10.1119/1.1707018>
- Fountain S. B., Doyle K. E. (2012) Learning by chunking. In Seel N.M. (eds) Encyclopedia of the Sciences of Learning.
- Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, 111(23), 8410-8415. <https://doi.org/10.1073/pnas.1319030111>
- Haak, D. C., HilleRisLambers, J., Pitre, E., & Freeman, S. (2011). Increased Structure and Active Learning Reduce the Achievement Gap in Introductory Biology. *Science*, 332(6034), 1213-1216. <https://doi.org/10.1126/science.1204820>
- Horsley, M., Knight, B., & Huntly, H. (2010). The role of textbooks and other teaching and learning resources in higher education in Australia: change and continuity in supporting learning. *IARTEM E-Journal*, 3(2), 43-61. <https://doi.org/10.21344/iartem.v3i2.787>
- Howard, Jay R., and Weimer, Maryellen. 2015. Discussion in the College Classroom: Getting Your Students Engaged and Participating in Person and Online. San Francisco: Jossey-Bass.
- Knight, J. K., & Wood, W. B. (2005). Teaching More by Lecturing Less. *Cell Biology Education*, 4(4), 298-310. <https://doi.org/10.1187/05-06-0082>
- Lang, J. (2016). Small teaching: Everyday lessons from the science of learning. Hoboken, NJ: Wiley.
- Mahdi, O. R., Nassar, I. A., & Almuslamani, H. A. (2020). The role of using case studies method in improving students' critical thinking skills in higher education. *International Journal of Higher Education*. <https://www.sciedu.ca/journal/index.php/ijhe/article/view/16580>
- Maxwell, J., & Stang, J. (2015). Making the most of demonstrations, videos, animations, or simulations in lectures and laboratories.
https://cwsei.ubc.ca/sites/default/files/cwsei/resources/instructor/Demo_WorkshopSummary_CWSEI-EOY2015_2page.pdf

Instructional Strategies

References (continued)

- National Research Council. (2000). *How people learn: Brain, mind, experience, and school*. Expanded edition. Washington, D.C.: National Academies Press.
<https://doi.org/10.17226/9853>.
- Nilson, L. (2014). *Creating Self-Regulated Learning*. Sterling, VA: Stylus.
- Porter, L., Bailey Lee, C., & Simon, B. (2013, March). Halving fail rates using peer instruction: a study of four computer science courses. In *Proceeding of the 44th ACM technical symposium on Computer science education* (pp. 177-182).
- Prince, M. (2004). Does Active Learning Work? A Review of the Research. *Journal of Engineering Education*, 93(3), 223-231. <https://doi.org/10.1002/j.2168-9830.2004.tb00809.x>
- Quaye, S., & Harper, S. (2015). *Student Engagement in Higher Education* (2nd ed.). New York, NY: Routledge.
- Rhodes, M.G., Cleary, A.M., & Delosh, E.L. (2019). A guide to effective studying and learning: Practical strategies from the science of learning. Oxford, 2019.
- Rivas SF, Saiz C, Ossa C. Metacognitive Strategies and Development of Critical Thinking in Higher Education. *Front Psychol*. 2022 Jun 15;13:913219. doi: 10.3389/fpsyg.2022.913219. PMID: 35783800; PMCID: PMC9242397. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9242397/>
- Rowe, M (1986), Wait Time: Slowing Down May Be a Way of Speeding Up!, *Journal of Teacher Education*.
- Tanner, K. D. (2013). Structure Matters: Twenty-One Teaching Strategies to Promote Student Engagement and Cultivate Classroom Equity. *CBE-Life Sciences Education*, 12(3), 322-331. <https://doi.org/10.1187/cbe.13-06-0115>
- To, J., Panadero, E., & Carless, D. (2021). A systematic review of the educational uses and effects of exemplars. *Assessment & Evaluation in Higher Education*, 1-16.
<https://doi.org/10.1080/02602938.2021.2011134>
- Woosley, S. A. (2003). How important are the first few weeks of college? The long-term effects of initial college experiences. *College Student Journal*, 37(2), 201-207.
- Cohen, Z. (2018, July 17). Small changes, large rewards: How individualized emails increase classroom performance The evoLLLution. Retrieved from:
<https://evolution.com/attracting-students/retention/small-changes-large-rewards-how-individualized-emails-increase-classroom-performance/>
- Darby, F. (2019). *Small Teaching Online*. San Francisco, CA: Jossey-Bass.
- Miller, M. D. (2014). *Minds online: Teaching effectively with technology*. Cambridge, MA: Harvard University Press.
- Wehby, J. H., & Lane, K. L. (2009). Proactive instructional strategies for classroom management. In A. Akin-Little, S. G. Little, M. A. Bray, & T. J. Kehle (Eds.), *Behavioral interventions in schools: Evidence-based positive strategies* (pp. 141-156). American Psychological Association. <https://doi.org/10.1037/11886-009>
- Wetzels, S. A. J., Kester, L., & van Merriënboer, J. J. G. (2011). Adapting prior knowledge activation: Mobilisation, perspective taking, and learners' prior knowledge. *Computers in Human Behavior*, 27(1), 16-21. <https://doi.org/10.1016/j.chb.2010.05.004>
- Yakovleva, N. O., & Yakovlev, E. V. (2014). Interactive teaching methods in contemporary higher education. *Pacific Science Review*, 16(2), 75-80.
<https://doi.org/10.1016/j.pscr.2014.08.016>
<https://www.qualitymatters.org/qa-resources/resource-center/articles-resources/research-video-length>