

PUTTING EQUITY INTO PRACTICE:

Culturally Responsive Teaching and Learning

EQUITY-MINDED DIGITAL LEARNING Strategy Guide Series



Keith, H.R., Kinnison, S. Garth-McCullough, R & Hampton, M (2023, July) Putting Equity into Practice: Culturally Responsive Teaching and Learning; Equity-Minded Digital Learning Strategy Guide Series. Every Learner Everywhere.

PUTTING EQUITY INTO PRACTICE: CULTURALLY RESPONSIVE TEACHING AND LEARNING

Culturally responsive pedagogy is a framework that is inclusive of culturally responsive and relevant teaching, and culturally affirming and sustaining instructional methodologies that validate and engage students' cultural identities. These practical instructional strategies and practices guide the implementation of culturally responsive teaching and learning into educational spaces.

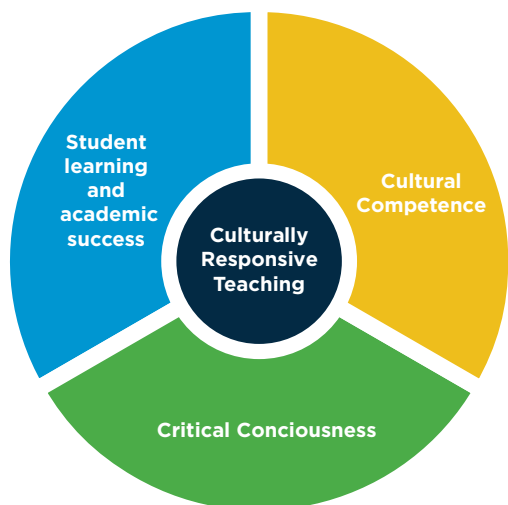
Culturally Responsive Pedagogy (CRP) centers students in the teaching process and takes instructional approaches that connect student language, family structure, background, and cultural identity to learning. CRP aims to improve the academic success of Black, Latine and Indigenous students while affirming their lived experiences and identities.

Ladson-Billings (1995) coined the term culturally relevant pedagogy and defines it as, “a pedagogy that empowers students intellectually, socially, emotionally, and politically by using cultural referents to impart knowledge, skills, and attitudes” (Ladson-Billings, 1994)

Ladson-Billings (1995) proposed three main components of CRP:

- Address student learning and academic success.
- Develop students' cultural competence to assist students in developing positive ethnic and social identities.
- Support students' critical consciousness or their ability to recognize and critique societal inequalities.

Gay (2002, p. 106) states that culturally relevant teaching is “using the cultural characteristics, experiences, and perspectives of ethnically diverse students as conduits for teaching them more effectively”.



CRP includes teaching practices that attend to the specific cultural characteristics that constitute students’ whole identity. Cultural characteristics include concepts such as values, traditions, and language, but also extend to communication, learning styles, and relationship norms (Gay, 2002). Culturally Responsive Pedagogy allows educators to be intentional about providing an education that Black, Indigenous, Latine, and people of color (BILPOC) students are entitled to.

Culturally responsive pedagogy will be utilized as the umbrella framework to support educators as they implement teaching and learning strategies outlined in the guides. As This theoretical framework continues to evolve, the evidence-based approaches of culturally responsive, relevant, affirming, and sustaining teaching and learning are presented as a catalyst for a paradigm shift in instructional practices, transformation of student experiences, and advancement of equitable outcomes.

Culturally Responsive Teaching and Learning



Culturally Responsive Teaching focuses on students' cultural knowledge and frames of reference. To meet the needs of our students and communities, we have to know who they are (Gay, 1999). This kind of teaching validates and affirms students of color while ensuring they see themselves and their communities as belonging in schools and other academic spaces. This leads to high engagement and academic success (Ladson-Billings, 1995; Gay, 2000; Hammond, 2017). Culturally

responsive teaching aims to provide liberatory educational experiences that support learners in gaining an understanding of social, political, and historical knowledge so they can critique and challenge society.

Culturally Responsive Teaching is:

- **Validating:** uses the cultural knowledge and frames of reference of historically marginalized and ethnically diverse students to make learning encounters more relevant and effective
- **Comprehensive:** teaches the whole student
- **Multidimensional:** examines and creates curriculum from multiple perspectives
- **Empowering:** enables students to be more successful learners by cultivating academic competence, personal confidence, and agency
- **Transformative:** analyzes the effects of inequalities
- **Emancipatory:** supports students in understanding there isn't a single truth

Culturally Responsive Teaching



Click on the Play button to watch a video from Ed-Week that describes some of the terminology used in this guide series.

Culturally Responsive Teaching requires upholding and embracing the identities, cultures, and lived experiences Black, Latine, and Indigenous students bring to educational spaces.

Culturally Responsive Teaching places value on understanding what cultural knowledge students have and leveraging this asset for optimal learning. Through this process, students move from memorizing information to rich, meaningful learning experiences and engagement with course content.

Culturally Responsive Teaching



Click the Play button to hear Dr. Nicole West-Burns describe the components of Culturally Responsive and Relevant Pedagogy, and suggest actions that faculty can take.

Culturally Affirming Teaching and Learning

Culturally Affirming Teaching and Learning is an intentional and strategic practice that can mitigate the potential racialized experiences of students from communities of color and marginalized identities. Affirming students' backgrounds, cultures, and experiences upholds these aspects of each student's identity with high regard, respect, and esteem. Through this approach, educators are committed to creating learning spaces that affirm self-knowledge and racial identity development while honoring the historical legacy and contemporary contributions of racialized groups and communities.

[Centering culture] is an important part of decolonizing the curriculum and being more inclusive of different experiences that different cultures bring.

Renee Restivo, Student at Northwestern Connecticut Community College, 2022



Luyt (2013) similarly recognizes the importance of giving students opportunities to write about their experiences and identity and encourages faculty to incorporate texts and perspectives from a variety of racial groups/tribes in their curricula. This process is not limited to history or literature classes but should be a comprehensive commitment involving science and math, as well. Sterenberg (2013) notes that this is “a process of determining what was meaningful and relevant to the students that honored the ancestors of the place in which her students lived and learned”.

Culturally Responsive and Sustaining Education...involves teachers, students, and — yes — community members in expanding opportunity for more engaging, relevant, and equitable learning.

Dr. Tyra Good Activist, Educator, Professor

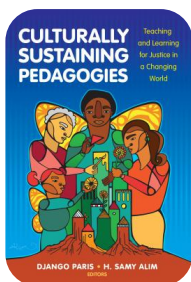
Good, T. [@tyrathegooddr]. (2020, March 8).
<https://twitter.com/remakelearning/status/1236653308930150401?lang=en>

Culturally Sustaining Pedagogy

Culturally Sustaining Pedagogy (CSP) builds on the foundation of the strengths-based teaching and learning practices of:

- Culturally Relevant Pedagogy (Ladson-Billings, 1995)
- Culturally Responsive Teaching (Gay, 2002; Hammond, 2015), and
- Linguistic Pedagogy (Hollie, 2011)

CSP sustains the languages, literacies, and cultural practices of students and communities of color. When utilizing CSP, faculty must go beyond merely sustaining the aspects of a student’s life that they are most comfortable to engage with or which are easily navigated in educational spaces and should interact with the personal, complex, and most authentic aspects of students’ cultural identities. When faculty are mindful of healthy relationship building and set the tone for respectful discussions at the onset of the course, engagements around personal and complex issues can be approached responsibly and appropriately.



Culturally Sustaining Pedagogy requires that educational institutions sustain and maintain the cultural ways of communities of color in those spaces rather than eradicating the cultural wealth of those communities. When employing CSP, there is a genuine focus on fostering students' sense of belonging, intellectual, social and emotional well-being, and academic and workplace success. Validation across racial and ethnic communities is foundational to Culturally Sustaining Pedagogy.



To learn more about Culturally Sustaining Pedagogy, visit the following websites:

[Culturally Sustaining Pedagogy \(California Department of Education\)](#)

[Culturally Sustaining Pedagogy: An introduction \(Center for Professional Education of Teachers\)](#)

Culturally Sustaining Pedagogy



Click the Play button
to see the *Teaching and Learning Central* describe research (Paris & Alim, 2017) around Culturally Sustaining Pedagogy.



Click the Play button
to hear from Django Paris, author of *Culturally Sustaining Pedagogy* as he discusses the approach in a keynote speech.

WHO BENEFITS?

Students



For students who experience Culturally Responsive Pedagogy in an environment with equity-minded faculty, knowledge becomes a wide spectrum of relative experiences, empowering students to identify with, relate to, and more freely absorb and apply content and skills (Georges, 2020; Webb et al., 2019). Utilizing these validating approaches inspires students to take ownership of concepts because they are included within a highly relatable and relevant context (Quiñonez & Olivas, 2020). As an instructional approach in post-secondary education, Culturally Sustaining Pedagogy supports academic success by promoting “cultural competence and social-political awareness” (Ladson-Billings, 1995). Studies have demonstrated that Culturally Responsive Pedagogy improves students’ educational experiences and outcomes (Georges, 2020; Webb et al., 2019; Quiñonez & Olivas, 2020).

Faculty



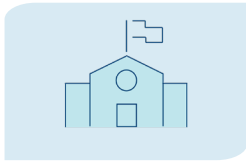
Culturally Responsive Teaching strategies support faculty in their efforts to connect the discipline-based content to their students’ interests, experiences, and academic and professional goals. Through the process of examining the curriculum and how their own identity impacts their teaching practices, faculty can leverage Culturally Responsive Pedagogy to not only reach students, but also to more effectively develop their knowledge and skills. By creating welcoming online or in-person learning environments, creating assignments that identify students’ assets, and building on curricular connections with students’ cultural funds of knowledge, students are better equipped to achieve their academic and professional goals.

“An educator cannot proclaim to be truly equity-minded without being conscious of the realities of race, the mundane racialized experiences of students of color, and the ways in which institutional racism shapes educational access, opportunity and success in both historical and contemporary U.S. contexts.”



Dr. Frank Harris III, Professor of postsecondary education and Co-Director of the Community College Equity Assessment Lab (CCEAL) at San Diego State University

Institutions



Culturally Responsive Pedagogy influences key performance indicators for institutions including faculty and student retention and graduation rates (Howard & Terry, 2011). Institutions benefit when students and faculty learn and experience success. By developing faculty's teaching capacity, they are better equipped to affirm students and ensure they view themselves and their communities as belonging in the curriculum, departments, and other academic spaces. With a coordinated effort to implement policies and processes that center culturally sustaining pedagogies in the curriculum, institutions will experience higher engagement and academic success metrics.

CULTURALLY RESPONSIVE PEDAGOGY AND POST-SECONDARY EDUCATION

As higher education grapples with equity, diversity, inclusion, students' experiences, and outcomes, institutions must be committed to engaging students' socio-cultural assets in all aspects of learning. Scholars have found that culturally responsive pedagogy in higher education is not only imperative as the student demographics of colleges and universities have become more racially, ethnically, and economically diverse but also academically beneficial. Studies demonstrate the impact of Culturally Responsive Pedagogy across disciplines including STEM courses, such as Computer Science (Coddington et al., 2021; Mack et al., 2019), Calculus (Huang, 2019), and Microbiology (Vasquez, 2022).

Authentic implementation of Culturally Responsive Pedagogy intentionally addresses equitable outcomes by:

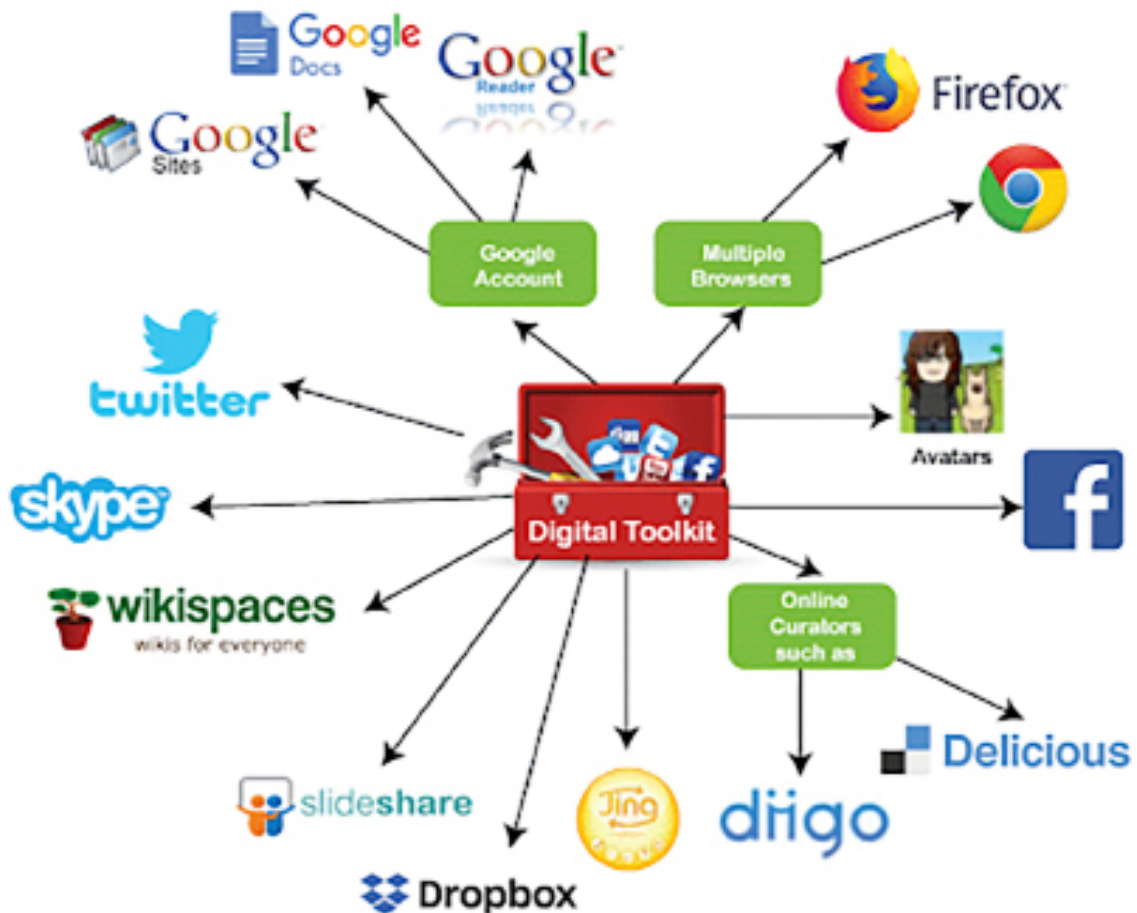
- Centering students' cultural experiences while leveraging their cultural knowledge as a cognitive scaffold
- Providing meaningful, relevant, and effective instructional practices that best serve student learning
- Utilizing inclusive strategies that advance the academic success of students

Responsiveness to students' culturally-based experiences, perspectives, and longer-term goals allows faculty to contribute to students' educational experiences and to support the path for success in their education and careers. (Simonsmeier et al., 2018; Rendón, 1994)

DIGITAL LEARNING AND CULTURALLY RESPONSIVE PEDAGOGY

This guide includes ways to intentionally implement culturally responsive pedagogy and provides suggestions for using digital learning tools to meet these teaching and learning goals. Digital learning tools vary in their effectiveness, requiring thoughtful selection and use that promotes active and collaborative student-centered learning.

Digital Toolkit



(Every Learner Everywhere, 2023) Every Learner Everywhere. (2023, March 24). Digital Learning - Every Learner Everywhere.

Digital learning comprises the technology and teaching practices that use technology to enhance learning. Digital learning includes a broad range of content and communication tools, curricular models, design strategies, and services that personalize instruction for students in blended and online learning environments. Evidence demonstrates active and adaptive learning has the potential to improve course outcomes and digital solutions lower the cost of course materials, particularly for poverty-affected students, and Black, Latine, and Indigenous

students. Through digital learning, faculty can adapt instruction to students' needs and capabilities, promote active and collaborative learning, more easily support learners with timely feedback, and improve academic outcomes. Digital learning expands opportunities for blended and online learning based on the people, processes, and technologies supporting students.

Digital Learning tools are useful because they:

- Provide faculty with important data on student engagement and skill development that faculty can then use to personalize instruction.
- Provide students with flexibility in when/how they connect with learning content, particularly for students who have competing life challenges that prevent them from fully engaging in traditional face-to-face classes.
- Allow students to engage in active learning, peer-to-peer engagement, faculty-student engagement, and culturally relevant learning.

“Educational technology has the potential to improve processes and practices, such as instructional and learning effectiveness, that can positively impact student outcomes, such as access and success. Yet, it is important that institutions of higher education, especially researchers and practitioners in the education field, recognize that educational technology is not the solution. Rather, it is an element of a solution that should be carefully and intentionally considered as well as implemented...”

Joosten et al. (2021)

**PEDAGOGICAL PRACTICE:
CULTURALLY RESPONSIVE INSTRUCTIONAL STRATEGIES**

Culturally Responsive Practice views the culture, language, experiences and learning modalities of each student as an asset in the classroom, not as a deficit.

Strategy 1: Assess and activate culturally bound prior knowledge.

Strategy 2: Empower students by using cultural referents.

- Affirm and reflect students' cultures.

- Create opportunities for students to analyze and research topics from a social-cultural perspective.
- Use cultural information to differentiate instruction to support student engagement and learning.

Strategy 3: Foster learning environments that validate cultural identity and experiences.

- Intentionally nurture culturally informed peer-to-peer and student-faculty relationships.
- Democratize the classroom.
- Leverage the students community cultural wealth and funds of knowledge.

STRATEGY 1: ASSESS AND ACTIVATE PRIOR KNOWLEDGE

For Culturally Responsive Teaching and Learning to occur, the new information taught must be integrated with information students already know by providing strategies to activate students' prior knowledge.

Education leader Hammond (2015) uses a neurological lens to examine how instructors can support students in applying their existing knowledge to new problems, challenges, or situations. She advises faculty to connect new things students are learning to their brain's existing schema (also known as background knowledge) that comes from their cultures, communities, and experiences. She notes that faculty should provide authentic tasks that build meaning and connections.

Culturally Responsive Teaching and Learning places value on recognizing and understanding the cultural knowledge students have and leveraging this as an asset to fuel optimal learning. Through this process, students' learning moves beyond memorizing concepts toward critical and higher order thinking about course content and creation of opportunities for learning that is meaningful to students.

Julianne Castillo, a student at the West O’ahu University of Hawai’i, describes this experience from a film class where the instructor “balanced [resources] between authors and writers from the mainland, like the continental United States and people that are local to Hawai’i...that was the first time I ever covered material that was relatable to me...I knew all the places they described. I knew some of the people they mentioned in the stories. It was something that made [it] easier to connect with.



Assessing Prior Knowledge

Students come to colleges and universities with a broad range of pre-existing knowledge. When faculty understand what information students know when courses begin or before they begin a new topic, they can design instructional activities that acknowledge misconceptions and build on areas of strength in understanding. Methods for assessing prior knowledge include entrance and exit tickets, concept maps, and poll responses.



Activating Prior Knowledge



Click the Play button to watch a video from Columbia University for further explanation and examples of activating prior knowledge.

Activating Prior Knowledge

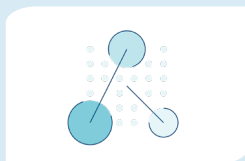
Activating prior knowledge is a process designed to support students in connecting new information with the information they already have about a particular subject or concept. When faculty are aware of the depth and range of students' content knowledge as it relates to a unit, they can anticipate what they will encounter in their course materials and tailor their delivery and instructional activities in ways that leverage existing connections to new, discipline-based content.

To ensure greater comprehension and information processing, faculty should activate and engage students' culturally-bound prior knowledge to connect and integrate their lived experiences with course content. This provides students authentic ways to process content. This approach to Culturally Responsive Pedagogy creates learning experiences that cultivate a sense of scholar identity through affirming culturally-bound prior knowledge that can support student engagement and success (Simonsmeier et al., 2018).



Cause to Wonder: Pause and Reflect

Do you have a practice for understanding students' prior knowledge? Is it tightly focused on one way of understanding the topic? How can you ensure that your practice uncovers connections to lived experiences and diverse funds of knowledge?



Connection and Application of Strategy to Adapted Hammond Framework: Information Processing

Understanding how to expand students' intellectual capacity so they can engage in deeper, more complex learning is a critical success factor for faculty. This requires faculty to consider information processing strategies common to oral cultures including metaphors, storytelling, and relevant discipline-based examples while utilizing formative assessments and feedback to increase cognitive/learning capacity. Examples can include:

- Provide students authentic opportunities to process content.
- Connect new content to culturally-relevant examples and metaphors from students' communities and everyday lives.

Benefits: *Faculty can affirm the knowledge students bring to the learning environment. When their prior knowledge is validated, students can make meaning of course content and materials by connecting it to their own cultural context. These culturally-responsive practices engage students' arsenal of knowledge and community cultural wealth and assist in supporting equitable outcomes.*

AWARENESS:

Knowing and owning
your own culture

Recognizing cultural archetypes of
individualism and collectivism

Acknowledging the socio-political
context around culture and language

LEARNING PARTNERSHIP:

Reimagine the student
and teacher relationship
as a partnership

Take responsibility to reduce
students' emotional stress

Support students in seeing themselves
as capable learners and
co-constructors of knowledge

COMMUNITY OF LEARNERS & LEARNING ENVIRONMENT:

Create an environment that is
intellectually and socially safer for learning

Make space for student
voice and agency

Build classroom culture and learning
around sociocultural talk and
task structures

INFORMATION PROCESS:

Provide students authentic
opportunities to process content

Connect new content to culturally
relevant examples and metaphors
from students' communities and
everyday lives



Storytelling: Researchers found that storytelling as a methodology improved students' critical thinking skills, helped them link new information with pre-existing knowledge, and connected their lived experiences to the subject matter in a meaningful way (Csikar & Stekanik, 2018). Approaches include:

- Using storytelling by way of group discussion to teach academic strategies.
- Allowing storytelling to be a tool for students to question their own preconceived biases and beliefs about minoritized social backgrounds.
- Incorporating storytelling as a tool to help visualize the experiences of individuals in students' minds and reflect on what they would do in a similar situation. This exercise can open doors to challenge and interrogate beliefs and dated practices performed by dominant groups.

PUTTING IT INTO PRACTICE: HOW DO YOU DO IT?

Scan instructional materials for essential prior knowledge.

The goal of a thorough scan of instructional materials is to identify the prior knowledge assumed or required to comprehend the key concepts in the unit.

Faculty should scan the module or unit readings, instructional activities, and assessments to determine the prior knowledge assumed and required to understand the discipline-based content. Two types of prior knowledge should be considered: general and culture-specific or culturally bound prior knowledge (Garth-McCullough, 2008).

- General prior knowledge is background information that students can access equally regardless of their social identities.

For example:

Knowing how to properly cite sources

- Culturally bound knowledge is not limited by or only valid within a particular culture. Students' culturally bound prior knowledge could vary based on their economic, geographic, religious, gender, racial/ethnic, and/or linguistic experiences.

This approach can support comprehension by enabling students to draw on their own experiences as a frame of reference for understanding the context and details of the story or information.

According to Ruddell's (1994) definition, comprehension increases when readers can invoke their schemata, or conceptual frameworks, the meaning of the words they already know, their relationship with the text, and previous social interactions involving the word.

Through this process, faculty are equipped with the skills to engage students' prior knowledge.

Reading culturally relevant materials can provide access to culturally bound prior knowledge in an English Composition course. This, in turn, supports increases in student comprehension because it enables students to draw on their own experiences as a frame of reference for understanding the context and details of the course materials.



Cause to Wonder: Pause and Reflect

Take a moment to practice scanning course materials of your first unit. What prior knowledge does the unit assume or require?

Develop a Prior Knowledge Assessment Tool









Create a short assessment that determines the extent and accuracy of the students' prior knowledge and understanding of the key concepts critical to understanding the unit's content. A mix of multiple choice and short answer questions (for more complex concepts) is one way to help faculty identify knowledge gaps and locate any sources of misinformation students have about the topic. It is not enough to ask students how much they know about the topic. Assessment questions should elicit whether what a student knows about the topic aligns with the course objectives.

By creating assignments that highlight main themes in the cultural context that students bring to the learning environment, faculty can use assessment results to inform content delivery and instructional activities based on students' prior knowledge.

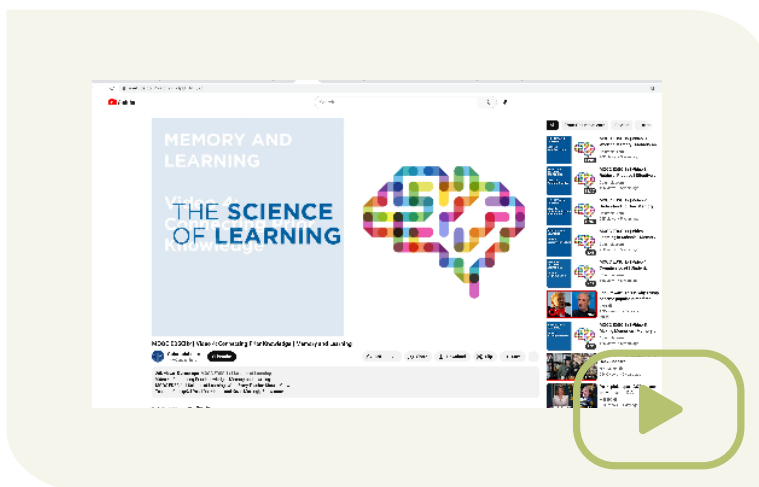
The following common tools can be used to activate prior knowledge:

- Graphic organizers
- Concept maps
- Finding-out tables
- Learning grids

APPROACHES TO ASSESS AND ACTIVATE STUDENTS' PRIOR KNOWLEDGE USING DIGITAL TOOLS

What can this strategy look like?	When in the term does it happen?	What digital learning tools can support the implementation of this strategy?	
Utilize formative, low-stakes assessments to understand what students know and the knowledge they bring into the learning environment.	Intermittently as new content and key concepts are introduced	Digital Tools <ul style="list-style-type: none"> Graphic organizers: Visualize the relationship between facts and ideas within course topics. Graphic organizers can be built in Google slides, Google docs and other editable digital spaces. 	LMS/Courseware Features <ul style="list-style-type: none"> Utilize LMS survey tools to gather students' prior knowledge about a topic. Students can create a blog post that connects course concepts and objectives to their prior knowledge.
Examples in the Field:   			
		Digital Tools <ul style="list-style-type: none"> Interactive Information-Gathering Tools: Assess student background knowledge using short- or long-form questions about course content. 	LMS/Courseware Features <ul style="list-style-type: none"> Launch low- stakes mini quizzes or assignments and discussion boards within LMS and/or courseware.
Examples in the Field:  			
		Digital Tools <ul style="list-style-type: none"> Polling: Assess student knowledge and determine what instructional adjustments to course delivery, if any. 	LMS/Courseware Features <ul style="list-style-type: none"> Utilize polls to gain understanding of students' knowledge and ways they are making meaning of course content.
Examples in the Field:   			

Memory and Learning



Click the Play button to watch Nicole Brittingham Furlonge describe the science and process of connecting prior knowledge in the classroom.



Cause to Wonder: Pause and Reflect

Take a moment to develop a few probing questions that assess or activate course-related culturally based prior knowledge. Questions should align with key learning objectives.

“Culturally responsive pedagogy builds on a student’s prior knowledge. In this case, we’re talking about prior cultural knowledge, making connections between what is known and what is to be taught and understood.”



*Geneva Gay, Emeritus Professor of Education
at the University of Washington-Seattle*

Pedagogical Resources

[Assess Prior Knowledge](#)

[Activate Prior Knowledge](#)

[The Science of Learning](#)

STRATEGY 2: EMPOWER STUDENTS BY USING CULTURAL REFERENTS

Using cultural referents from students' cultures empowers them to engage more deeply in their learning experiences: intellectually, socially, and emotionally. Through the decentering of dominant norms such as whiteness and maleness, students can think and act in ways that affirm their community's cultural wealth. The use of cultural referents holistically engages students by centering multifaceted aspects of their own identities. To utilize this approach, faculty actively challenge the status quo by educating themselves on the cultural, historical, and linguistic connections of their disciplinary content and intentionally incorporate these aspects of life into their teaching.

Empowering students by using cultural referents ties into Culturally Responsive Teaching. It connects learning to students' lived experiences, cultural backgrounds, and identities in ways that advance engagement, achievement, and empowerment. By upholding their students' cultures throughout the course, faculty can serve important roles in affirming and reflecting students' cultures in areas such as values, traditions, language, communication, learning, and relationship norms.

Through this approach, faculty commit to creating learning spaces and experiences that reflect their students' while honoring the historical legacy and contemporary contributions of racialized groups and communities to the course content.

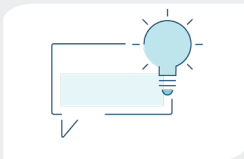
“Creating learning communities where cultural heritages are valued and using cultural knowledge of the diverse communities [should be used] to guide curriculum development and to challenge the status quo.”

Teel & Obidah, authors of Because of the Kids: Facing Racial and Cultural Differences in Schools

PUTTING IT INTO PRACTICE: HOW DO YOU DO IT?

Affirm and reflect students' cultures.

Affirming students' cultures requires integrating course materials, assignments, and assessments that are intentional about amplifying the diverse cultures of students. This three-step process includes discovering students' cultural factors, modifying teaching based on the discovery process, and assessing students' learning in a recursive process (Webb, Gonzales & Trent, 2019). Faculty can work with others in their department to review the cultural relevance of their texts with the support of an equity review tool or rubric.



The use of multiethnic photos, pictures, and authors to illustrate concepts and content is essential for establishing culturally responsive course and content materials that activate prior knowledge (Ladson-Billings, 1995; Gay, 2000; Hammond, 2017).

Use materials that highlight multiple perspectives on each topic of the course instead of focusing on a single perspective to access prior knowledge. For example, when teaching about issues in society related to the focus of the course, include various experiences and views of people with different racial, religious, and socio-economic statuses.

Suggested tools: ATD's Equity Review Tool or Culturally Responsive Curriculum Analysis Scorecard (contact teachingandlearning@achievingthedream.org for more information on the scorecard) [Equity Review Tool](#)

Create opportunities for students to research and analyze topics from a social-cultural perspective.

Culturally Responsive Pedagogy provides opportunities for students of diverse backgrounds to view course topics from their cultural points of view. Student voices and perspectives should be affirmed and sustained.

When students add their voices to course assignments such as research, writing, and projects, this process decenters dominant voices and normative hierarchies and makes room for alternate viewpoints.

Research projects centered around student interests, identities, and cultures provide opportunities for students to engage in learning and co-construction of knowledge in ways meaningful to them.

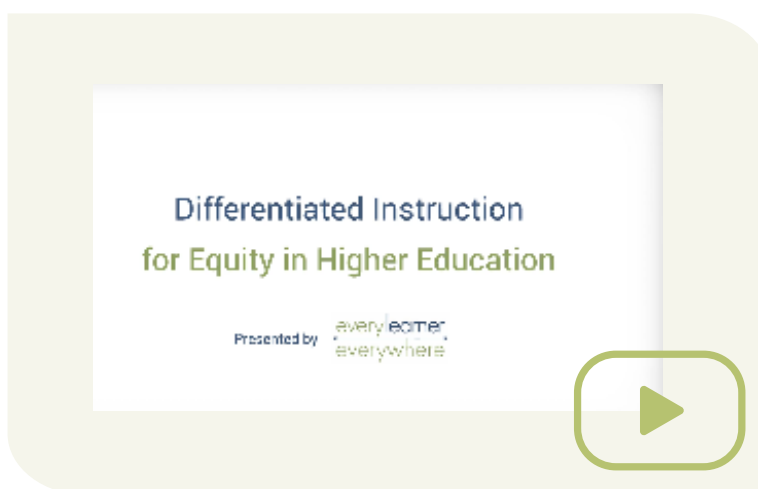
Differentiate instruction using cultural information to support learning.

Differentiated instruction describes a variety of strategies, many of which are evidence based, that focus primarily on holistically centering students in their learning. In the case of culturally responsive, affirming, and sustaining pedagogy, differentiation means using cultural referents to bolster learning. Evidence-based differentiation strategies include:

- Use a variety of instructional approaches to support students.
- Present lessons in multiple modalities including readings, videos, illustrated graphics, and podcasts that allow students to comprehend materials in many ways.

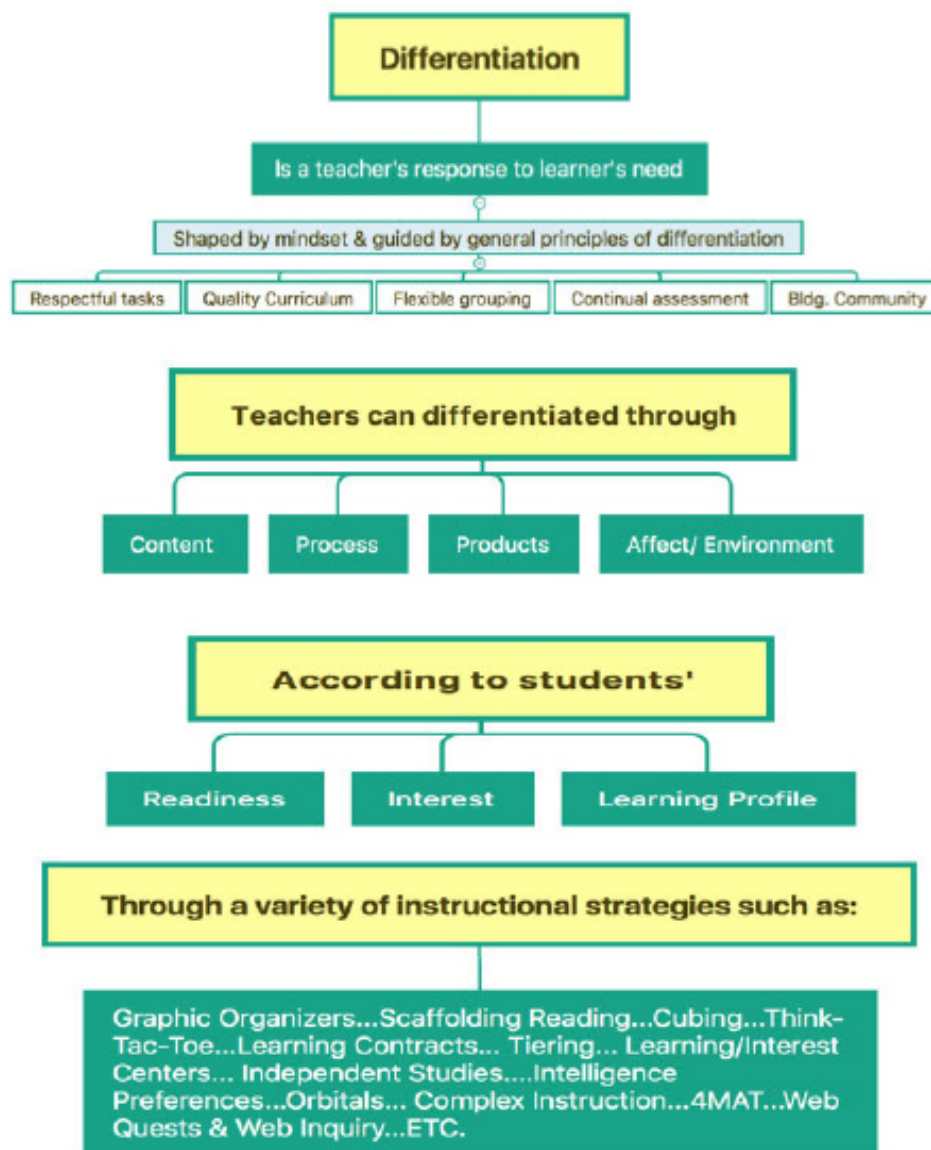
- Center course materials from diverse authors that reflect multiple ways to approach problems.
- Alter assignments to meet students' where they are.
- Adapt pacing and cadence of assignments in ways such as “chunking” sections to make learning more manageable and accessible.
- Scaffold multiple components of assignments.
- Assess students on an ongoing basis to determine their levels of understanding.
- Provide ongoing low-stakes formative assessments.
- Use assessment results to adjust instruction.
- Provide a variety of options for how students can learn and demonstrate their knowledge.
- Provide options for students to demonstrate their learning in ways that reflect their strengths.
- Engage students' interests with meaningful lessons that activate students' prior knowledge and reflect their lived experiences.
- Structure the learning environment with options such as community versus independent projects, online and in-person office hours, and asynchronous and synchronous assignments.

Differentiated Instruction for Equity in Higher Education



Click the Play button
*to learn more about
Differentiated Instruction
from Every Learner
Everywhere.*

The key is to orchestrate the learning environment, curriculum, assessments, and instruction so all students learn what is taught. For example, while learning discipline-based vocabulary in any field, multilingual students, who are more proficient in a language other than English, benefit when they can work on assignments in their first language before approaching assignments in English. Research indicates that college students can benefit from this instructional approach (Tomlinson (1999, 2008).



Cause to Wonder: Pause and Reflect

Take some time to explore the [Equity Review Tool](#) . What did you learn? What would you like to learn more about? In what new ways can you invite students to share their cultural perspectives, and how will you affirm those perspectives?



Connection and Application of Strategy to Hammond Framework: *Learning Partnerships*

For learners from diverse cultural backgrounds to have successful educational experiences and outcomes, there must be a partnership between faculty and students. To create these relationships, faculty should build trust with students, develop inclusive learning environments, and provide opportunities for students to take ownership of their learning.

- Reimagine the student and faculty relationship as a partnership.
- Affirm students' strengths and academic abilities while creating educational experiences that authentically engage students in the learning process.
- Believe and acknowledge students as capable learners and co-constructors of knowledge.

Benefits:

- Create cross-cultural learning experiences.
- Connect course content to students' cultures and intersectional identities.
- Discipline-specific course content becomes relevant to students and enhances their abilities to apply learning in the real world, and the discipline should accurately reflect the contributions of made to the field by individuals that hold diverse racial identities regardless of student population in the course.

Faculty invite students to share cultural knowledge through instructional activities and assessments.

Students are empowered to bring culturally relevant components of their lives into their learning when these components support the objectives of the curriculum.

For example:

- Students conduct a comparative analysis of a discipline-related current event from a country outside of the United States.
- Students can share a short story by an author with their cultural background with a similar theme to course readings.
- Faculty include videos, presentations, and articles by authors who have the same cultural identities as students of the diverse contributors to the field- to ensure students are learning the true content of their disciplines and not a 'white washed' version.
- Faculty intentionally provide space for students to relate disciplinary content to a cultural belief, value, or behavior to produce a test question or prompt that could be used in an assessment.
- Faculty design assignments that require students to apply course content in ways that address a social justice issue that impacts a particular cultural group.

Faculty intentionally design course content and curriculum to be more contextual and relevant to the cultures of their students.

Faculty use teaching practices that recognize and acknowledge the specific cultural characteristics of diverse students. Diverse perspectives, experiences, and identities of experts in the field are represented in course content and curriculum.

Faculty can be intentional in making their courses relevant to the cultures of their students by:

- Getting to know students and their cultural identities
- Creating assignments that challenge students to expand their worldview through exploration and examination of global topics and course content specific to the discipline
- Embedding cultural referents to make the course content and curriculum relevant to students



Cause to Wonder: Pause and Reflect

If you find yourself thinking that your discipline is culture neutral, dig deeper through a culturally responsive approach to identify, understand, and recognize that culture aligns with all disciplines. Consider how the content was developed, who is credited for the content development, and how the content has been applied around the world and throughout history. Furthermore, consider the content that impacts students today.

Students research and analyze topics from a social-cultural perspective.

These types of assignments empower students to choose and engage in research topics that are meaningful and relevant to them. They increase engagement in the learning experience through intentional examination of social-cultural perspectives and lived experience within the discipline. Students' voices are amplified and their cultures are centered in discipline-specific content.




















Cause to Wonder: Pause and Reflect

Think about the students you've interacted with most recently. What do you know to be meaningful and relevant to them in the course? What types of assignments lead to students being most engaged in the content? How can you use this information to inform creating course assignments, assessments and activities that engage their socio-cultural knowledge? How can you use this information to foster understanding of course content?

“As a culturally responsive educator, I focus on how to connect to all students' lived experiences by affirming and validating their own identities.”

Vivian Yun, teacher, (Ferlazzo, 2020)

APPROACHES TO AFFIRM AND CONNECT STUDENTS' CULTURES TO COURSE DISCIPLINE AND CONTENT USING DIGITAL TOOLS

What learning tools can support the implementation of this strategy?	
Digital Tools <ul style="list-style-type: none"> • Discussion Tools: Ask students effective, open-ended questions that spark curiosity. 	LMS/Courseware Features <ul style="list-style-type: none"> • Facilitate online discussions within the LMS to support students in making course connections to cultural knowledge, examples, and experiences
What does this strategy look like?	When in the term does it happen?
Intentionally use affirming language that demonstrates high expectations while providing high levels of support for students who have historically been marginalized.	This happens incrementally and iteratively at the start of the course and throughout the term. Embed this approach in projects, texts, discussions, and student feedback loops.
Examples in the Field:  	
Digital Tools <ul style="list-style-type: none"> • Digital Storytelling: Create digital stories leveraging audio/visual tools. 	LMS/Courseware Features <ul style="list-style-type: none"> • Facilitate online discussions within the LMS to support students in making course connections to cultural knowledge, examples, and experiences
Examples in the Field:    	
Digital Tools <ul style="list-style-type: none"> • Research Assignments: Add cultural connections to research-based assignments to encourage students to explore the global community. 	LMS/Courseware Features <ul style="list-style-type: none"> • Faculty can partner with students to draft or edit a module based on diverse community learning needs. • Students can share research with peers.
Examples in the Field:       	
Digital Tools <ul style="list-style-type: none"> • Blogs: Students can use their own words to share their cultural perspectives. 	LMS/Courseware Features <ul style="list-style-type: none"> • Create assignments for which students can upload recordings of their cultural experiences, world views, and values while making course connections.
Examples in the Field:    	

“The brain already comes with hardware [that is programmed] with our contextualized experiences within our community. That means that culture then is the software that helps organize the new information we take [in] and organize and store in our brains.”

Hammond, educator and author

Pedagogical Resources

[The Norton Guide to Equity-Minded Teaching](#)

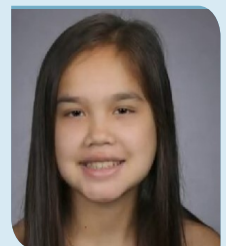
[Students Are Affirmed in Their Cultural Connections](#)

[Affirming Student Differences: Creating an Environment of Inclusion](#)

[Benefits of Liquid Syllabus](#)

Weingarten and Deller (2010) discuss that differentiation is an equitable strategy that aims to disrupt traditional forms of pedagogy in higher education. However, research does not always provide practical strategies that are relevant in the college setting. In this article, differentiation in higher education is defined as an equitable tool, and applied examples of differentiation that can be used to promote equity in college classrooms are included.

Students recognize that...“there is a key difference between simply recognizing diversity and incorporating those teaching practices in the classroom. Application is key to progressing student success in the classroom.”



Lillian Nguyen, student at the University of Central Florida

STRATEGY 3: FOSTER CLASSROOMS THAT VALIDATE DISTINCT RACIAL IDENTITIES AND EXPERIENCES.



Effective and validating learning experiences value the whole student while recognizing and acknowledging the diverse academic and personal backgrounds students bring to the classroom. These classrooms intentionally center students' cultures, backgrounds, and abilities. Validating instructional practices are mindful of how traditional practices can exclude students with racialized and marginalized identities.

Culturally responsive faculty embed asset and strengths-based ideologies and practices that elevate and uphold the community cultural wealth and funds of knowledge of Black, Latine, Asian American and Pacific Islander, and Indigenous students, in order to disrupt and counter dominant norms, standards, and ideologies.

Counter Narrative: A culturally responsive classroom should help students build an academic mindset that leverages engagement, effort, and a shift in narrative by supporting them in countering the existing narrative about their identities as learners. This particular narrative is designed to tell a different story that counters the dominant message that students experience every day. "This new narrative responds to experiences based on reality, not just inspirational positive thinking" (Hammond, 2015, p. 117).

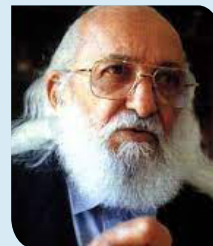
"It's not just about being sensitive to the particular social, cultural background of the person. It is important to offer examples or exemplars of achievement. I have a lot of Hispanic students, some with a background in Mexico. So I use Cesar Chavez.

I use the work of the great Nobel Laureate, Mexican poet, Octavio Paz... I [also] have these photo quotes on my course home page and in the relevant modules."

Garth-McCullough et al., 2022

Dr. Pedro Noguera (2003), Dean of University of Southern California's Rossier School of Education, suggests that culturally responsive faculty tailor their practices to better serve students of color in ways these students learn best while also shifting expectations that students assimilate their learning to the ways they are taught. When faculty are equipped to make ideas and knowledge meaningful to students of color, students' culture and interests become tools for teaching and learning. This approach provides learning within the context of culture.

"The more people participate in the process of their own education, and the more people participate in defining what kind of production to produce, and for what and why, the more people participate in the development of their selves. The more people become themselves, the better the democracy."



Paolo Freire in Horton et al., 1990.

PUTTING IT INTO PRACTICE: HOW DO YOU DO IT?

Intentionally nurture peer to peer and student-faculty relationships.

Student-faculty relationships are fundamental to culturally responsive teaching and learning. Getting to know students and validating their cultures are important steps to building authentic relationships. In addition, encourage students to engage with peers in ways that break down barriers and allow learning to flourish. Student-faculty relationships founded in mutual trust and rapport lead to students feeling that faculty care about them as people.

Research indicates that students who are culturally and linguistically diverse excelled academically when they built a community that merged academic and social lives. University of California, Davis (UC Davis). Implementing surveys is a simple and effective way to get to know your students.

Sample Getting to Know You Survey



Cause to Wonder: Pause and Reflect

Imagine a student enters your course for the first time. How do you interact with students to foster an environment that validates and affirms cultural identities and experiences? Are students' diverse cultures and identities represented in the course syllabus? During the first week of the semester, what strategies do you use to build community and learn about students?

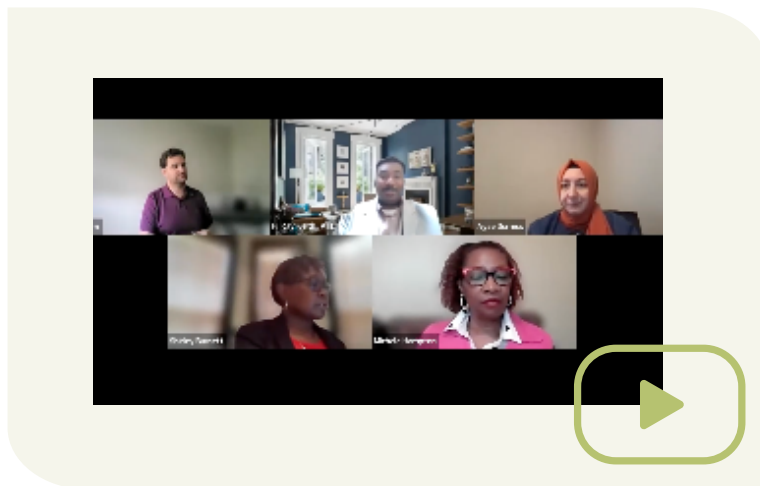
Democratize the Classroom

The democratized classroom engages students by promoting and valuing student voice and choice and authentically embraces diverse representation of ideas, perspectives, and experiences. A democratized approach to teaching and learning recognizes and dismantles traditional hierarchies within the learning environment.

Characteristics of a democratized classroom include:

- High trust relationships and shared power between faculty and students
- Centered student voice and agency
- Respect for students' ideas and contributions
- Intentional sharing of diverse perspectives, including those about challenging topics and content
- Group decision-making and open dialogue as a protocol for building community
- A holistic approach to learning, including students' critical consciousness

Operationalizing Equity Series: Democratizing Learning Environments



Click the Play button
to watch an entire *Every
Learner Everywhere/
Achieving the Dream*
webinar on democratizing
learning environments.

Leverage student's community cultural wealth and funds of knowledge.

Caring and trusting relationships are critical to equity-minded and student-centered teaching. This requires faculty to recognize and engage students' cultural, academic, and social skill sets and assets. Leveraging students' cultures can advance their engagement and educational experiences.

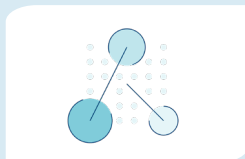
Yosso (2005) defines community cultural wealth as “an array of knowledge, skills, abilities and ways of learning utilized by Communities of Color to navigate and be resilient in traditional and dominant educational systems.” In leveraging the community cultural wealth that students bring from their homes and communities, the educational experience of students of color can be transformed as their cultural funds of knowledge are centered in teaching and learning.

Connect strategy to a culturally responsive approach.

Ladson-Billings (1995) suggests that there are many ways faculty can embrace students and the cultures they bring to the classroom. These include:

- Demonstrate connectedness with all students.
- Encourage students to learn collaboratively and be responsible for each other.
- Develop a community of learners.

Culturally responsive educators create instructional opportunities that value their students' culture by using it as a resource. An assets-based model enables faculty to acknowledge, respect, and integrate students' cultural skills and knowledge. Leveraging funds of knowledge (Gonzalez et al., 2005) and tenets of validation theory creates space for students of color and first-generation students to bring their lived experiences, cultural backgrounds, and the values of their families and home communities to their learning experience. These are important, valuable, and tangible resources of knowledge (Rendón, 1994).



Connection and Application of Strategy to Adapted Hammond Framework: *Community of Learners and Learning Environment*

Community Building: Culturally responsive faculty work to create supportive, welcoming environments in their courses. Their classrooms are socially and emotionally inclusive places where students feel safe taking risks while providing opportunities to expand their knowledge and critical thinking.

- Create an environment that is intellectually and socially inclusive.
- Make space for student voice and agency.
- Build classroom culture and learning around sociocultural talk and relevant assignments tasks.

Benefits:

- Faculty intentionally create learning environments where students thrive rather through cultural responsiveness rather than just survive.
- Faculty provide opportunities for students to guide the teaching and learning experience as it relates to their own cultures and identities
- Through trusting and caring relationships, students engage as their whole and authentic selves and take ownership of their learning.
- Faculty allow students to fully engage in learning through their own cultural lenses and experiences
- Faculty take responsibility and accountability for transforming students' experiences by dismantling the status quo of teaching and learning.
- Faculty engage in underutilized pedagogies that intentionally focus on addressing inequities perpetuated by traditional teaching methods.

“Research shows that educational experiences that are active, social, contextual, engaging, and student-owned lead to deeper learning.”

(Cornell University, 2022, para.2)

Structure project-based learning to intentionally nurture peer-to-peer and student-faculty relationships.

- Culturally responsive project-based assignments allow students to participate in learning in ways that create in-depth engagement with course content while nurturing peer-to-peer learning. Through the process of group work, students can intentionally experience cross-cultural interactions as they make meaning of academic content, language, and materials through their own cultural lenses.
- To authentically nurture peer-to-peer and student-faculty relationships, faculty should create opportunities for students to validate each other through the following practices:
- Assign peer review groups.
- Create learning teams.
- Nurture a “familia” atmosphere built on trust and familiarity.
- Create assignments during which students work collectively using strategies such as jigsaw.
- Develop intentional student groups, and assign team roles for project-based assignments.
- Include collaborative and cultural criteria in assignment rubrics.

“I entered the classrooms with the conviction that it was crucial for me and every other student to be an active participant, not a passive consumer.”

bell hooks



Student Voice and Choice in the Learning Experience

Student-directed elements in course design are grounded in self-determination theory. Providing opportunities for student choice is a powerful tool for engaging students at all stages of the learning process. Additionally, this allows students to take an active role in their own learning. Although relatively new to higher education, embedding student voice and choice aligns with Self-Determination Theory (Ryan & Deci, 2000), an idea that fosters students' intrinsic motivation and can lead to self-directed learning, greater understanding of concepts, and improved academic performance. As faculty elevate student voice and choice, students are empowered to take ownership of their own learning and to share feedback on curriculum, assignments, and assessments. Additionally, students become more confident in sharing how they best learn and demonstrate their knowledge.

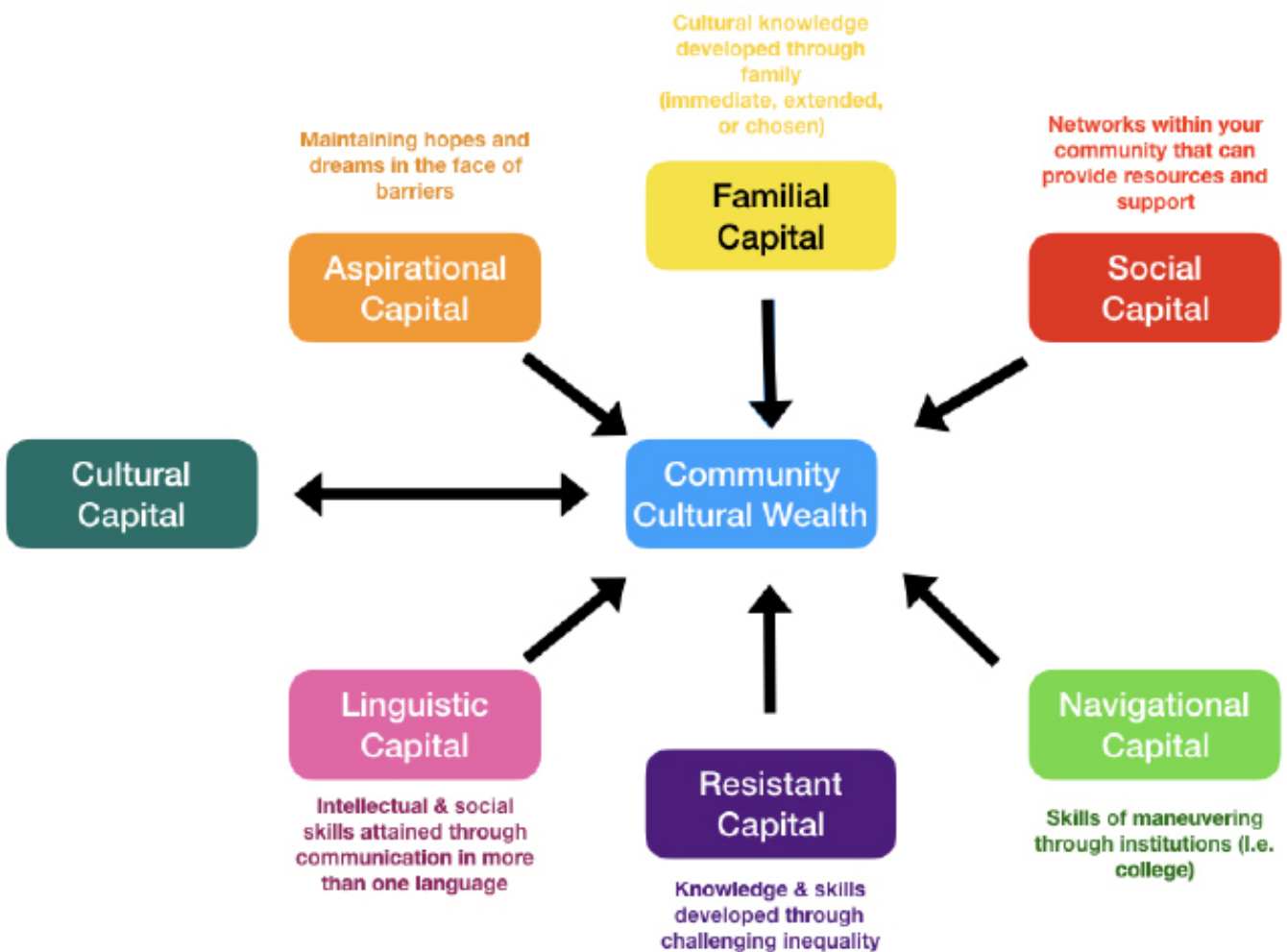
This approach asks faculty to:

- Offer a menu of formatted options for major assignments and assessments.
- Provide students with multiple ways to showcase their knowledge and understanding of course content through the use of technology, community cultural wealth, and multilingual, artistic, oral, performance or vocational skills.
- Share power and positionality between student and faculty by co-creating community norms.
- Invite student feedback through formal and informal surveys.
- Provide thoughtful formative feedback, clear instructions, and transparency to guide students through this process of more self-directed learning.

Community Cultural Wealth Framework.

Yosso's (2005) Cultural Wealth Model examines six forms of cultural wealth that students of color bring to their educational experiences. These forms of cultural wealth include aspirational, linguistic, familial, social, navigational, and resistance. Faculty must recognize and value these skills and understand how they can positively impact student learning when leveraged and validated as legitimate ways of knowing, making meaning, and engaging with course content.

In practice, faculty choose to focus on one form of cultural wealth, for example, linguistic capital. This speaks directly to the rich cultural language and communication skills students bring to the learning environment. This form of capital includes storytelling which can play a major role in students' lived experience. In the classroom, storytelling can be leveraged as a way to deliver course content and can be a meaningful way students can demonstrate their knowledge. Yosso suggests that faculty use these forms of community cultural wealth to support and guide academic success.



For example, instead of traditional written forms of communication, faculty may incorporate digital storytelling, community asset mapping, oral presentations, and culturally relevant writing assignments that leverage authentic skills students bring to the learning space. This instructional practice can be applied across disciplines, as the real-life examples below illustrate.” I think you can keep the examples as they are (indented).

Humanities







Janet Mitchell-Lambert, English faculty at Cerritos College, asks students to read several poems and then go to a location referenced in a poem. Students then submitted a video on Flipgrid reflecting on why they selected that particular poem, how their location connected to it, and recited their favorite lines from the poem, not only connecting the course curriculum with the real world, making learning more relevant, but it also increases opportunities for students to discover similarities with their peers that are shown to foster relationships (Gehlbach et al., 2016).

Sciences

Jaime Hannans, nursing faculty at California State University, Channel Islands asks students to venture into their local communities to identify locations of automatic external defibrillators (AEDs). Through student-student and faculty-student interactions, the class discovered that based on the students county, the AEDs were in different locations.

Data from student surveys of online community college students conducted by Pacansky-Brock (2017) showed that when asynchronous voice/video tools are used consistently, students’ sense of belonging to a community increased and their verbal communication skills improved. Videos allow students to explore their own communities and visually and virtually share aspects of their environments with peers. This digital tool approach to learning can inspire faculty to design engaging assignments that encourage students to connect the course content with their daily lives.

APPROACHES TO FOSTER LEARNING ENVIRONMENTS THAT VALIDATE CULTURAL IDENTITY AND EXPERIENCES USING DIGITAL TOOLS

What does this strategy look like?	When in the term does it happen?	What learning tools can support the implementation of this strategy?	
Intentionally use affirming language that demonstrates high expectations while providing high levels of support for students who have historically been marginalized.	This should happen throughout the semester during group projects and peer-to-peer discussions. Throughout the semester, faculty should create opportunities to meet with students.	Digital Tools <ul style="list-style-type: none"> Avatars: Allow customization of faculty or students' digital appearances and dialogue to enhance communication and celebrate culture. 	LMS/Courseware Features <ul style="list-style-type: none"> Enable peer review LMS features for assignments. Leverage communication features to provide space for content-based dialogue amongst students, and between students and faculty. Utilize audio and video features to provide WISE feedback.
		Examples in the Field: <div>       </div>	

Pedagogical Resources

[Democratizing Learning Environments](#)

[Supporting Positive Peer Relationships](#)

[Funds of Knowledge Toolkit](#)

[Developing an Inclusive Classroom Culture](#)

[The Role of Peer Relationships in Adjustment to College](#)

[Equity Accelerator Classroom Practices Library](#)

[Implementing Student Choice Within an Assignment](#)

References

Culturally sustaining pedagogy. (2022, February 11). California Department of Education. <https://www.cde.ca.gov/pd/ee/culturallysustainingped.asp>

Codding, D., Alkhateeb, B., Mouza, C., & Pollock, L. (2021). From professional development to pedagogy: An examination of computer science teachers' culturally responsive instructional practices. *Journal of Technology and Teacher Education* 29(4), 497-532. <https://par.nsf.gov/biblio/10379682>

Coman, D. (2009). Identity & learning: a zine project. *Capstone Projects and Master's Theses*. 321. https://digitalcommons.csumb.edu/caps_thes/321

Cornell University. (2022). Collaborative learning. Teaching.cornell.edu. <https://teaching.cornell.edu/teaching-resources/active-collaborative-learning/collaborative-learning>

Csikar, E., & Stefaniak, J. E. (2018). The utility of storytelling strategies in the biology classroom. *Contemporary Educational Technology*, 9(1), 42-60.

Ferlazzo, L. (2020, August 13). Teachers Need to Focus on What We Can Control This Year. Retrieved from Teachers Need to Focus on What We Can Control This Year. <https://www.edweek.org/teaching-learning/opinion-teachers-need-to-focus-on-what-we-can-control-this-year/2020/08>

Garth-McCullough, R., Kinnison, S., Adams, S., Castillo, J., Nguyen, L., and Rivera, R. (2022, April 22) Student Voices Panel: Students Explore their Experiences with Culturally Responsive Teaching [Video] Every Learner Everywhere. https://youtu.be/16dcD3_nIRE

Garth-McCullough, R. (2008). Untapped cultural support: The influence of culturally bound prior knowledge on comprehension performance. *Reading Horizons: A Journal of Literacy and Language Arts*, 49 (1). https://scholarworks.wmich.edu/reading_horizons/vol49/iss1/3

- Gay, G. (1999). Ethnic identity development and multicultural education. In R.H. Sheets & E.R. Hollins (Eds.) *Racial and ethnic identity in school practices aspects of human development*, 195-211 . L. Erlbaum Associates.
- Gay, G. (2002). Preparing for culturally responsive teaching. *Journal of Teacher Education*, 53(2), 106–116. <https://doi.org/10.1177/0022487102053002003>
- Gehlbach, H., Brinkworth, M. E., King, A. M., Hsu, L. M., McIntyre, J., & Rogers, T. (2016). Creating birds of similar feathers: Leveraging similarity to improve teacher–student relationships and academic achievement. *Journal of Educational Psychology*, 108(3), 342.
- Georges, Jr., C. T., (2020). Establishing culturally responsive pedagogical practices via ‘storytelling’. *Feature*, 5(3), 1-7. <https://files.eric.ed.gov/fulltext/ED606052.pdf>
- Gonzalez, N., Moll, L.C., & Amanti, C. (Eds.). (2005). *Funds of Knowledge: Theorizing Practices in Households, Communities, and Classrooms* (1st ed.). Routledge. <https://doi.org/10.4324/9781410613462>
- Hammond, Z. L. (2015). *Culturally Responsive Teaching and the Brain*. Corwin Press.
- Hampton, M. M. (2017). Designing for immediacy and culture. In K. Milheim (Ed.), *Cultivating diverse online classrooms through effective instructional design*. IGI Global.
- Hollie, S. (2011). *Responsive Teaching and Learning – Classroom Practices for Student Success, Grades K-12 (1st ed.)*. Shell Education.
- Horton, M., Paulo Freire, Bell, B., Gaventa, J., & Peters, J. (1990). *We make the road by walking : conversation on education and social change*. Temple University Press. ISBN: 9780877227755
- Huang, Y. (2019). Undergraduate students’ perceptions of culturally responsive teaching and their sense of belonging and academic self-efficacy in higher education. *Purdue University Graduate School*. <https://doi.org/10.25394/PGS.9116885.v1>
- Hunt, B. D., & Oyarzun, B. (2020). Online learning perspectives of native american students. *Journal of Educational Technology Systems*, 48(3), 321–334. <https://doi-org.aurarialibrary.idm.oclc.org/10.1177/0047239519867921>
- Joosten, T., Harness, L., Poulin, R., Davis, V., & Baker, M. (2021). Research Review: Educational Technologies and Their Impact on Student Success for Racial and Ethnic Groups of Interest. WICHE Cooperative for Educational Technologies (WCET). <https://files.eric.ed.gov/fulltext/ED615058.pdf>
- Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal*, 32(3), 465–491. <https://doi.org/10.3102/00028312032003465>
- Luyt, I. (2013). Bridging Spaces: Cross-Cultural Perspectives on Promoting Positive Online Learning Experiences. *Journal of Educational Technology Systems*, 42(1), 3–20. <https://doi.org/10.2190/ET.42.1.b>

Lee, A. Y. (2017). Deepening sociopolitical consciousness in culturally relevant pedagogy. *Talking Points*, 29(1), 20-26.

LePeau, L., Silberstein, S., Sharp, S., Miller, D., & Manlove, J. (2022). Validation of the term 'cultural community' in the culturally engaging campus environments survey. *Education Sciences*, 12(12), 881.

Mack, K.M., Winter, K. and Soto, M. (Eds.) (2019). *Culturally Responsive Strategies for Reforming STEM Higher Education*, Emerald Publishing Limited, Bingley, pp. i-xii. <https://doi.org/10.1108/978-1-78743-405-920191018>

Marschall, C. (2021, July 27). The Power of a Democratic Classroom. *Edutopia*. <https://www.edutopia.org/article/power-democratic-classroom>

Najarro, I. (2022, April 18). Explainer: *What is culturally responsive teaching?* [Video]. YouTube. <https://www.youtube.com/watch?v=V2fe09mOFLs>

Nickels, W., McHugh, J. & McHugh, S. (2022). *Understanding Business (13th ed.)*. McGraw Hill.

Pacansky-Brock, M. (2017). *Best practices for teaching with emerging technologies*. Routledge.

Paris, D., & Alim, H. S. (2017). What is Culturally Sustaining Pedagogy and Why Does It Matter? In D. Paris & H. S. Alim (Eds.), *Culturally sustaining pedagogies: Teaching and learning for justice in a changing world* (pp. 1-21). Teachers College Press.

Prabhu, V. (2021, November 11). We look at adaptive learning and how it delivers custom learning experiences using technology. YoungWonks. <https://www.youngwonks.com/blog/What-is-Adaptive-Learning>

Pacansky-Brock, M. (2017). *Best practices for teaching with emerging technologies*. Routledge.

Quiñonez, T. L., & Olivas, A. P. (2020). Validation Theory and Culturally Relevant Curriculum in the Information Literacy Classroom. *Urban Library Journal*, 26 (1). Retrieved from <https://academicworks.cuny.edu/ulj/vol26/iss1/2>

Rendon, L. (1994). Validating culturally diverse students: Toward a new model of learning and student development. *Innovative Higher Education*, 19(1), 33-51. https://www.csuchico.edu/freespeech/_assets/documents/pedagogy/rendon,-l.-1994---validation-theory.pdf

Ruddell, M. R. (1994). Vocabulary knowledge and comprehension: A comprehension process view of complex literacy relationships. In R. B. Ruddell, M. R. Ruddell & H. Singer (Eds.), *Theoretical models and processes of reading* 4th ed., (pp. 414-447). International Reading Association.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78. <https://doi.org/10.1037/0003-066X.55.1.68>

Smith, A., & Chestnutt, C. (2021). Differentiation for equity. *Journal of Higher Education Theory and Practice*, 21(6). <https://doi.org/10.33423/jhetp.v21i6.4390>

Simonsmeier, B. A., Flaig, M., Deiglmayr, A., Schalk, L., & Schneider, M. (2018, June). Domain-specific prior knowledge and learning: A meta-analysis. Paper session presented at *Research Synthesis 2018, Trier, Germany*. <http://doi.org/10.23668/psycharchives.844>

Smith, A., & Chestnutt, C. (2021). Differentiation for equity. *Journal of Higher Education Theory and Practice*, 21(6). <https://doi.org/10.33423/jhetp.v21i6.4390>

Sterenberg, G. (2013) Considering Indigenous Knowledges and Mathematics Curriculum, *Canadian Journal of Science, Mathematics and Technology Education*, 13(1, 18-32). <http://doi.org/10.1080/14926156.2013.758325>

Teel, K. M., & Obidah, J. E. (2008). *Building Racial and Cultural Competence in the Classroom*. Teachers College Press.

Tyrone Howard & Clarence L. Terry Sr (2011) Culturally responsive pedagogy for African American students: promising programs and practices for enhanced academic performance, *Teaching Education*, 22:4, 345-362, DOI: 10.1080/10476210.2011.608424

Vasquez, S. (2022) Moving beyond content knowledge: Examining the impacts of a culturally responsive microbiology curriculum. *Frontiers in Education* 7(2022). <http://doi.org/10.3389/feduc.2022.956115>

Webb, A., Gonzales, R., & Trent, M. P. (2019). A Journey of Discovery. In K. Winter, K.M. Mack, & M. Soto (Eds.), *Culturally responsive strategies for reforming STEM Higher Education: Turning the tides on Inequity* (pp. 153-172). Emerald Publishing Limited.

Weingarten, H. P., & Deller, F. (2010). The benefits of greater differentiation of Ontario's university sector: Final report. Toronto, ON: Higher Education Quality Council of Ontario.

Williams-Black, T. H., Bailey, J. P., & Lawson, P.D.C. (2010). Differentiated instruction: Are university reading professors implementing it? *The Reading Matrix*, 10(1), 45-54.

Yosso, T. J. (2005). Whose culture has capital? A critical race theory discussion of community cultural wealth. *Race Ethnicity and Education*, 8, 69-91. <http://dx.doi.org/10.1080/1361332052000341006>