Multicultural Science Curriculum Recommendations

October 1, 2018

MCD recommends cultural inclusiveness, inquiry as well as the Next Generation Science Standards as the key principles of the Framework for TUSD’s K–12 Science Education. Presenting science as a hands-on, activity-based, problem-solving instructional program couched in constructivist theory enables all students, including students of color, to excel in science.

A. Curriculum Reform

Review curriculum for Cultural Inclusion - science content must be culturally consistent, relevant, centered on the lives and cultures of students. Content is interdisciplinary. It helps to eliminate bias, to create a new standard of measure, and to provide equitable curriculum and pedagogical practices.

   a. Level 1 – Additive and Tangible - Science experiences, perspectives, and contributions of people of color and women are presented in isolation or as additives to the regular science curriculum.
   b. Level 11 – Infusion – Contributions of scientists of color and women are integrated into the science curriculum, not just tacked on.

B. Pedagogy/Instructional Practices

   a. Use of instructional strategies that are amenable to all students and are culturally diverse. Instruction begins with questions about phenomena (rather than with facts to be memorized); by investigating their questions, students construct new understandings.
   b. Encourage students to ask critical questions about all information they receive i.e., who wrote or edited the text? Whose voice am I hearing or not?
   c. Use Inquiry Based Learning/Constructivist Techniques that facilitate students to generate knowledge, learn from each other’s experiences, and create new understandings.

C. Professional Development

   a. Provide a learning community for teachers, to support the development of a constructivist multicultural curriculum. Beginning with small changes, sharing them and respectfully analyzing one’s own and one another’s work.

D. Equity Pedagogy – Learning must acknowledge and address a diversity of learning styles while challenging the dynamics of power and privilege in the classroom.

   a. Emphasize the larger purpose or value of the material being studying, by connecting teaching and learning to local community and larger global issues – transformative pedagogy/social action.
   b. Use a variety of teaching methods, modalities and groups rather than relying on one mode of engagement.
   c. Carefully frame objectives when raising potentially sensitive or uncomfortable topics.
   d. Understand the dynamics of power in the room to avoid perpetuating privilege and oppression.
e. Structure discussions to include a range of voices: e.g., take a queue; ask to hear from those who have not spoken, wait until several hands are raised to call on anyone, use think-pair-share activities.

f. Allow ample time for any in-class activities that require substantial reading, and provide scaffolding that reflects the fact that processing times will vary.

g. Clearly communicate the expectations and grading scheme for each assignment.

E. Student-Student Interactions – in an inquiry based classroom significant effort needs to be placed on developing a safe learning environment.

   a. Establish guidelines, ground rules, or community agreements for class participation.

   b. In class, explain the value of collaboration for learning. Speak of students’ diverse perspectives as an asset.

   c. Provide students opportunities to reflect on what they learned through collaborative activities (formal or informal).

   d. Deliberately assign students to small, heterogeneous groups that do not isolate underrepresented students.

   e. Establish ways for students to intervene if they feel a certain perspective is being undervalued or not acknowledged.

   f. Stop or intervene in a discussion if comments become disparaging or devalue other students’ experiences.