

CULTURALLY RESPONSIVE TEACHING IN SCIENCE

by:

Diana Rose M. Gimpaya

Teacher I, Jose C. Payumo Jr. Memorial High School

A teaching strategy known as culturally responsive teaching (CRT) acknowledges and values students' varied cultural origins and integrates their experiences into the curriculum. When it comes to science education, CRT highlights how crucial it is to take into account the cultural settings of all pupils in order to make the information relevant and approachable. This method improves students' involvement and academic performance in addition to making them feel appreciated. CRT fosters an inclusive learning environment that supports diversity and equity in science education by recognizing and embracing students' cultural identities.

Integrating culturally relevant content is one of the main elements of culturally responsive science instruction. Students are more likely to interact deeply with the content when they perceive that the curriculum values their cultural knowledge and experiences. Teachers can, for instance, highlight scientific achievements from various cultural backgrounds or talk about how science relates to difficulties that students face in the real world. This method promotes increased interest and involvement in scientific learning by bridging the gap between students' real-world experiences and the abstract ideas frequently covered in science classrooms.

Using instructional tactics that are sensitive to the learning preferences of students from a variety of cultural backgrounds is another crucial component of CRT in science. According to research, social, linguistic, and community aspects might influence how various cultural groups approach learning. Teachers can design more successful learning experiences for every student by modifying their teaching methods to account for these

variations. For instance, students from cultures that place a strong emphasis on oral communication, group projects, or real-world problem-solving may benefit most from collaborative learning, practical exercises, and visual aids.

Critical thinking abilities are also fostered by culturally sensitive science instruction. CRT creates an environment where students can challenge presumptions and apply scientific knowledge to real-world problems by pushing them to investigate how scientific concepts connect to their particular cultural contexts. This method challenges students to consider the social function of science and its effects on their local communities. Ladson-Billings (2020) asserts that culturally responsive education fosters a more comprehensive understanding of science by encouraging students to consider the social and cultural ramifications of scientific knowledge.

Furthermore, by fostering an inclusive learning environment for all students—especially those from historically underrepresented groups—CRT in science seeks to address educational fairness. Given that conventional science education frequently promotes a Western-centric viewpoint, many students from other cultural backgrounds may feel alienated from it. CRT assists in removing these obstacles and giving students the chance to thrive in science by implementing culturally relevant teaching strategies. This method helps dispel preconceived notions about who belongs in the scientific community and gives students the confidence to believe that they are competent scientists regardless of their background.

Teachers must continue their professional development in order to use CRT in scientific classes. In order to successfully engage students from a variety of cultural backgrounds, teachers must be conscious of their own cultural biases and possess the necessary resources and techniques. This could entail learning about the cultures of the students, comprehending how cultural differences can impact learning, and developing the ability to design lessons that are culturally appropriate. Teachers may foster a more

welcoming and encouraging learning atmosphere where all students feel appreciated and capable of achieving in science as they gain more expertise in these areas.

Implementing culturally responsive education in science can be difficult, despite all of its advantages. Instructors may encounter opposition to altering conventional teaching techniques or may not have access to materials that promote CRT. Additionally, teachers could struggle to strike a balance between the need of culturally responsive practices and the expectations of standardized curricula. Nevertheless, the increasing amount of evidence demonstrating CRT's efficacy in raising student achievement indicates that overcoming these obstacles is well worth the effort. Teachers can create environments where all students can succeed in their scientific classes with the correct assistance.

Science instruction that is culturally sensitive is a successful strategy that increases student engagement, creates an inclusive learning environment, and advances educational fairness. All students, especially those from varied cultural backgrounds, benefit from CRT's integration of culturally appropriate information, modification of teaching methods, and promotion of critical thinking in science classes. Culturally responsive science instruction gives students the confidence to perceive themselves as engaged members of the scientific community, which promotes a feeling of achievement and community, claims Ladson-Billings (2020). All children will benefit from more inclusive, equitable, and interesting science instruction as long as schools continue to use this strategy.

References:

Ladson-Billings, G. (2020). Culturally responsive teaching: A framework for equity in science education. *Journal of Science Education*, 38(3), 45-59