

Faculty Perceptions of the Benefits of Case Teaching

For a complete analysis, see: Yadav, A., Lundeberg, M., DeSchryver, M., Dirkin, K., Schiller, N.A., Maier, K., and Herreid, C.F. (2007). Teaching science with case studies: A national survey of faculty perceptions of the benefits and challenges of using case studies. *Journal of College Science Teaching* 37(1): 34-38.

The National Center for Case Study Teaching in Science has trained thousands of science teachers in the case study method over the past 20 years and counting. In 2006, we conducted a survey to assess the effectiveness of our training. We wanted to investigate whether faculty who had been taught by us to use case studies to teach science were actually doing so and, if they were, how they would characterize their experiences. One hundred and one out of 139 faculty invited to respond who had attended either our two-day fall conference, five-day summer workshop, or both events in 2004/January 2005 completed an online survey.

The majority of the faculty taught at the university level (only 4% were high school teachers), and less than half had tenure (17.6 % were lecturers, 36.5% were assistant professors, 23% were associate professors, and 19% were professors). Twenty-eight percent of the respondents were relatively new faculty, having taught five years or less; 25% had taught 6-10 years; 30% had taught 11-20 years; and 17% were very experienced, having taught over 20 years. The faculty represented a diversity of science disciplines, with biological sciences (44) and psychology (7) reported most often. Twenty-three of the survey participants attended a two-day conference, 65 attended a five-day workshop, and five attended both.

Below is a summary of the data related to the respondents' perceived instructional benefits to students (Table 1 and Figures 1-4).

Table 1 – Impact of using case study teaching on students

| Item | Agree | Neutral | Disagree |
|--|--------------|----------------|-----------------|
| Critical Thinking | | | |
| <i>Students are better able to view an issue from multiple perspectives</i> | 91.3 | 7.5 | 1.3 |
| <i>Students develop a deeper understanding of concepts</i> | 90.1 | 8.8 | 1.3 |
| <i>Students demonstrate stronger critical thinking skills</i> | 88.8 | 8.8 | 2.5 |
| <i>Students make connections across multiple content areas</i> | 82.6 | 17.5 | |
| <i>Students have increased their discussion of ethical issues</i> | 61.3 | 30.0 | 8.8 |
| <i>Students have difficulty making connections across multiple content areas</i> | 17.5 | 20.0 | 62.6 |

| Learning | | | |
|--|------|------|------|
| <i>Students have a better grasp of the practical application of core course concepts</i> | 91.3 | 8.8 | |
| <i>Students strengthen communication skills</i> | 78.8 | 16.3 | 5.0 |
| <i>Students find the format challenging</i> | 60.0 | 17.5 | 22.6 |
| <i>Students are frustrated by ambiguity</i> | 52.6 | 21.3 | 26.3 |
| <i>Students feel that they are not covering enough content</i> | 26.3 | 26.3 | 47.6 |
| <i>More content is covered in my classroom</i> | 18.8 | 33.8 | 47.6 |
| <i>Students feel that what they are learning is not applicable to their field of study</i> | 7.5 | 15.0 | 77.5 |
| <i>Students do worse on tests</i> | 2.5 | 32.5 | 65.1 |
| <i>Students retain less from class</i> | 1.3 | 11.3 | 87.5 |
| Participation | | | |
| <i>Students take a more active part in the learning process when they use case studies</i> | 95.1 | 5 | |
| <i>Students are more engaged in class</i> | 93.8 | 6.3 | |
| <i>Students develop positive peer-to-peer relationships</i> | 80.1 | 18.8 | 1.3 |
| <i>Attendance has increased on the days when cases are used</i> | 27.5 | 55.0 | 17.5 |
| <i>Students have difficulty working in small groups</i> | 16.3 | 18.8 | 65.1 |
| Other: | | | |
| <i>Student evaluate my teaching more positively</i> | 45.0 | 46.3 | 8.8 |

As illustrated in Figure 1, below, faculty believed students' critical thinking increased and their understanding deepened when learning via case-based instruction. The faculty reported that the students in the classes using case studies demonstrated stronger critical thinking skills (88.8%), were able to make connections across multiple content areas (82.6%), and developed a deeper understanding of concepts (90.1%). Most of the faculty also agreed that when they used case study teaching the students were better able to view an issue from multiple perspectives (91.3%).

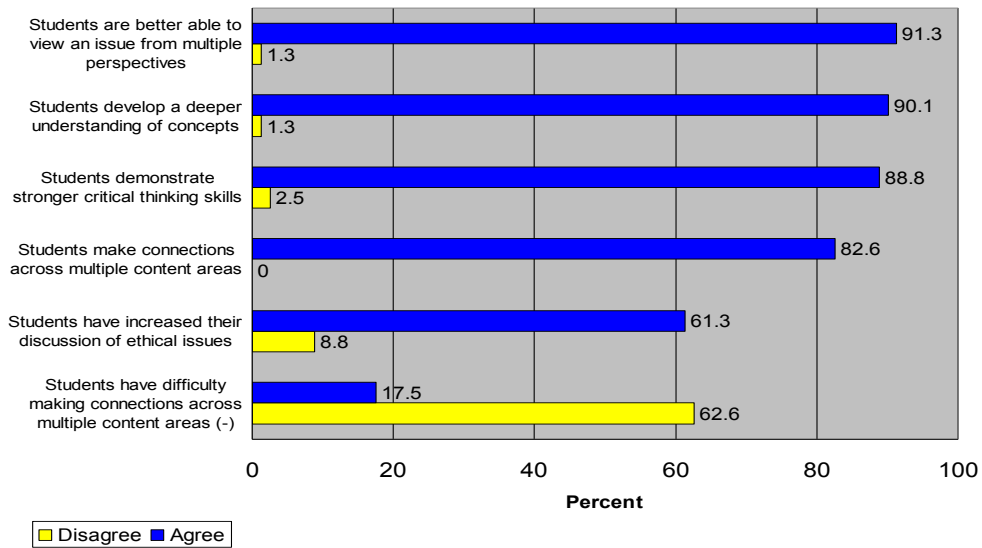


Figure 1 - Student Learning Perceptions: Critical Thinking

Figures 2-3 below illustrate perceptions of student learning and show that students gained much from cases. Although content coverage remained about the same, faculty reported that students retained more and did as well on tests using case instruction. The majority of the faculty disagreed with the statement that students using cases retained less from class (87.5%) and did worse on tests (65.1%). Instead, faculty reported that students had a better grasp of the practical applications of core course concepts when learning via case-based instruction (91.3%). When asked whether more content was covered in their classroom when using case studies, only 18.8% of the faculty agreed, while 33.8% were neutral and 47.6% disagreed.

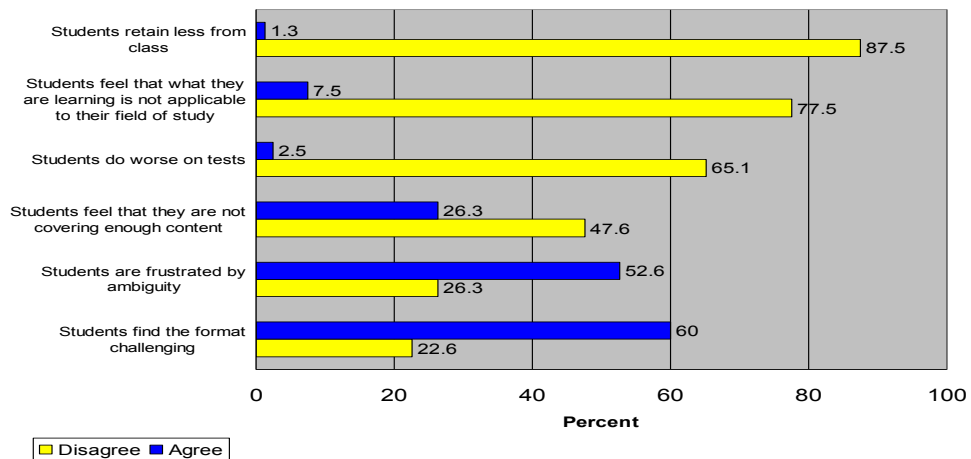


Figure 2 - Student Learning Perceptions: Learning (Negative)

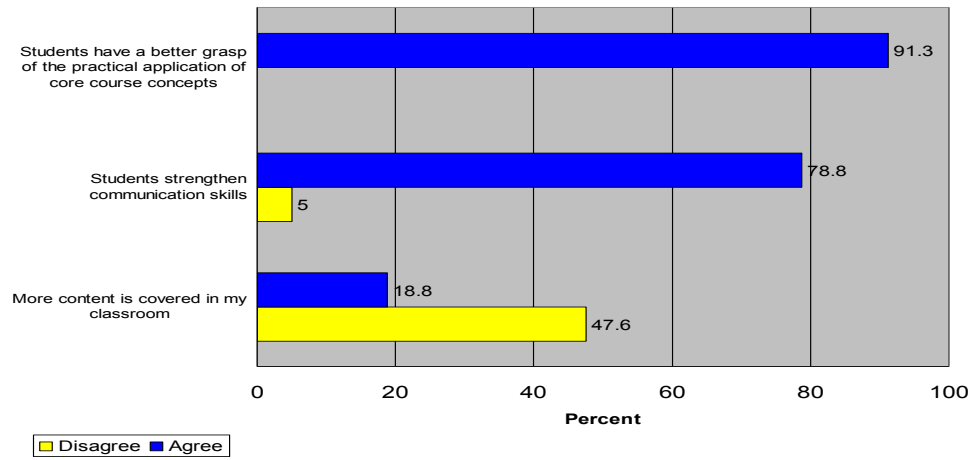


Figure 3 - Student Learning Perceptions: Learning (Positive)

As shown in Figure 4, participation of students increased when cases were used in class. The overwhelming majority of the faculty (95.1%) agreed that students took an active part in the learning process when they used cases and that students did not encounter any difficulty working in small groups (65.1%). The majority (93.8%) of faculty using case study teaching also agreed that students were more engaged in the class when using cases. However, it is interesting to note that 55% of the faculty were neutral and 17.5% of them disagreed when asked if attendance increased on the days when cases were used, which is contrary to other research showing that students tend to attend class more when cases are used (Hoag et al. 2005).

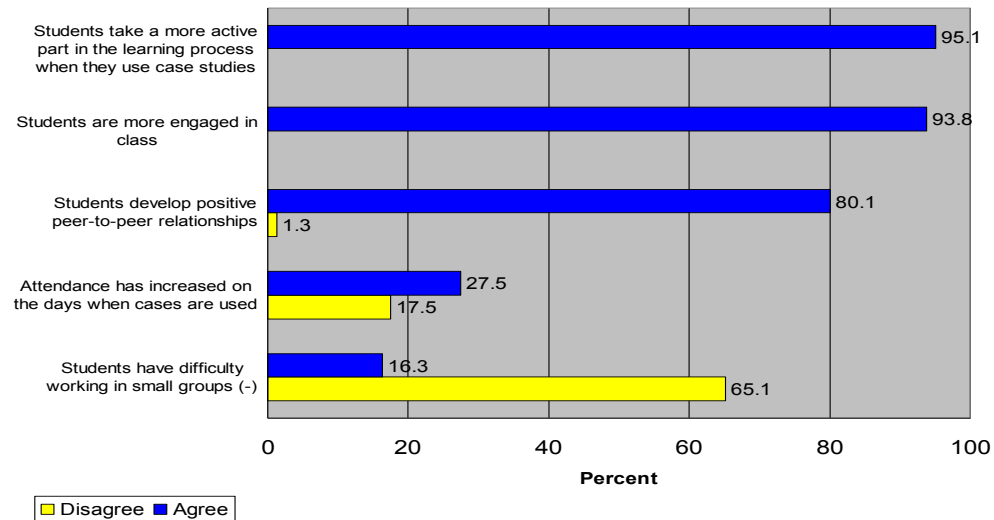


Figure 4 - Student Learning Perceptions: Participation