



**Estimate ratio of
teacher questions to
student questions**



**Ratio = 58 teacher
to 1 student**



**What is percentage
of CLOSED (fact-
based) questions?**

CLOSED = 80%
OPEN = 10%

Using Reasoning Questions

- Increasing the use of higher cognitive questions (50%+) produces superior learning gains for students above the primary grades and particularly for secondary students.
- Teaching students to draw inferences and giving them practice in doing so result in higher cognitive responses and greater learning gains.
- Increases in the use of higher cognitive questions in recitations does not reduce student performance on lower cognitive questions on tests.



Wait Time I

Between Question & Answer



What is recommended
WAIT I Time?

Wait Time II

Between Answer & Response



What is recommended
WAIT II Time?

Increasing wait-time beyond three seconds is positively related to the following:



- (1) Improvements in the student achievement
- (2) Improvements in student retention
- (3) Increases in the number of higher cognitive responses generated by students
- (4) Increases in the length of student responses
- (5) Increases in the number of unsolicited responses
- (6) Decreases in students' failure to respond
- (7) Increases in the amount and quality of evidence students offer to support their inferences
- (8) Increases in contributions by students who do not participate much when wait-time is under three seconds
- (9) Expansion of the variety of responses offered by students
- (10) Decreases in student interruptions
- (11) Increases in student-student interactions
