

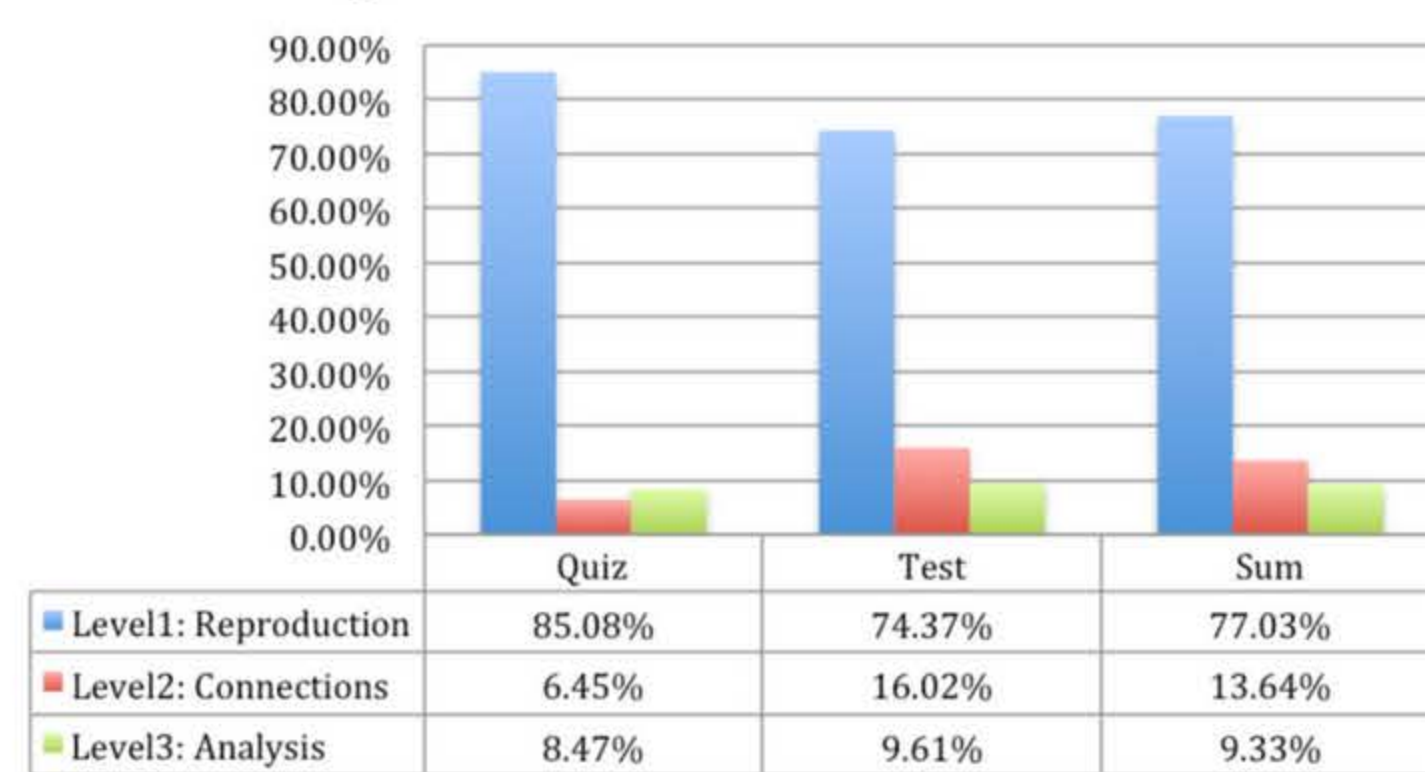
Data Analyses & Result

Question 1

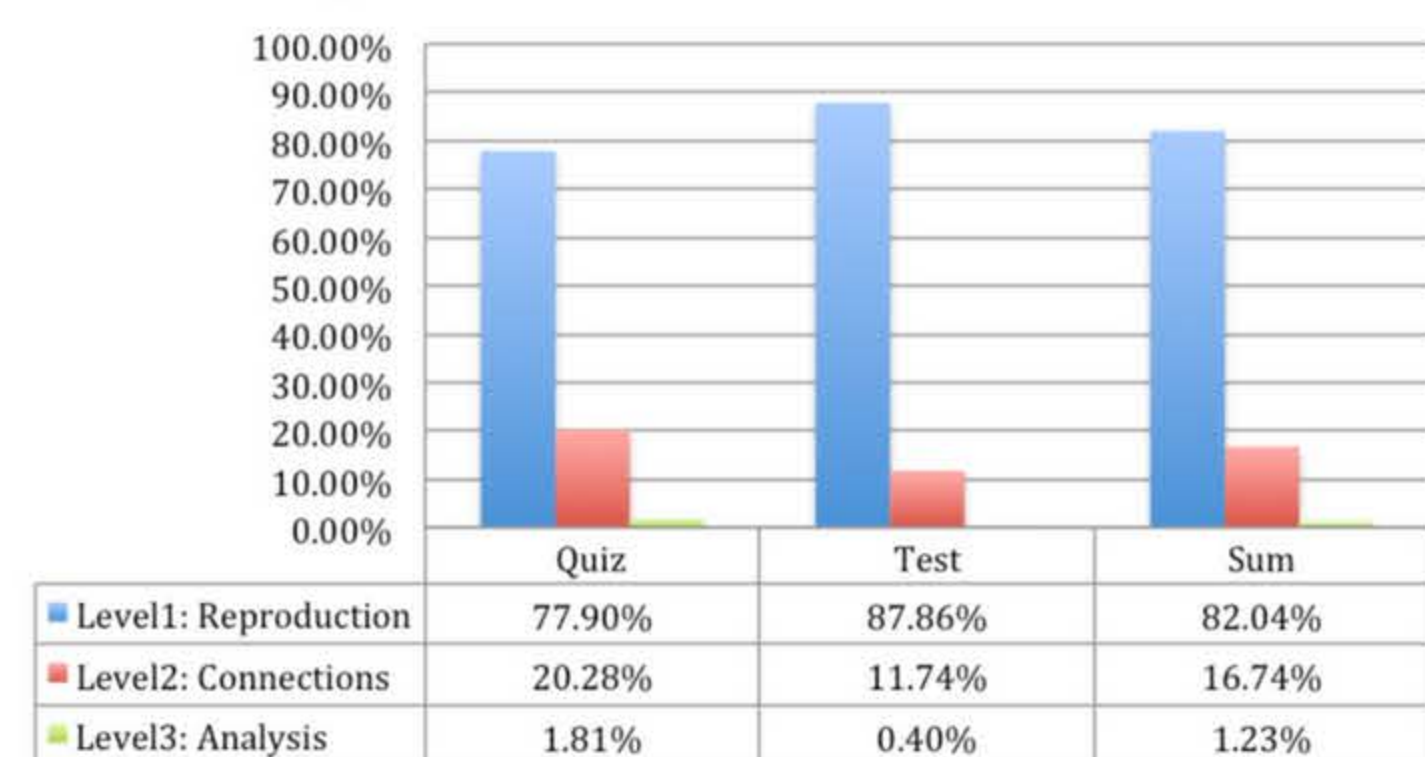
- Chinese teachers tended to use more level 1 questions.
- There is a much greater use of level 3 questions in China than in the U.S.

DIVE DEEPER

Thinking Level Distribution in Data from China



Thinking Level Distribution in Data from The U.S.



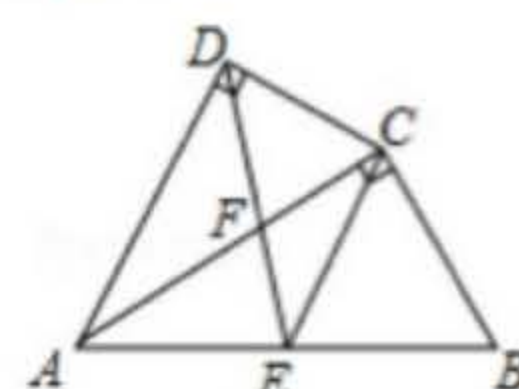
Even though the percent of level three questions used in China is greater than in the U.S based on these two samples, the diversity and variety of these questions are limited. In fact, 46 of 93 of the level three questions focus on proving a given statement or making a conjecture and then proving it in geometry.

As shown in the figure, in the quadrilateral $ABCD$, line segment AC bisects $\triangle DAB$. $\angle ADC = \angle ACB = 90^\circ$, E is the midpoint of line segment AB .

(1) Proof $AC^2 = AB \cdot AD$; ↩

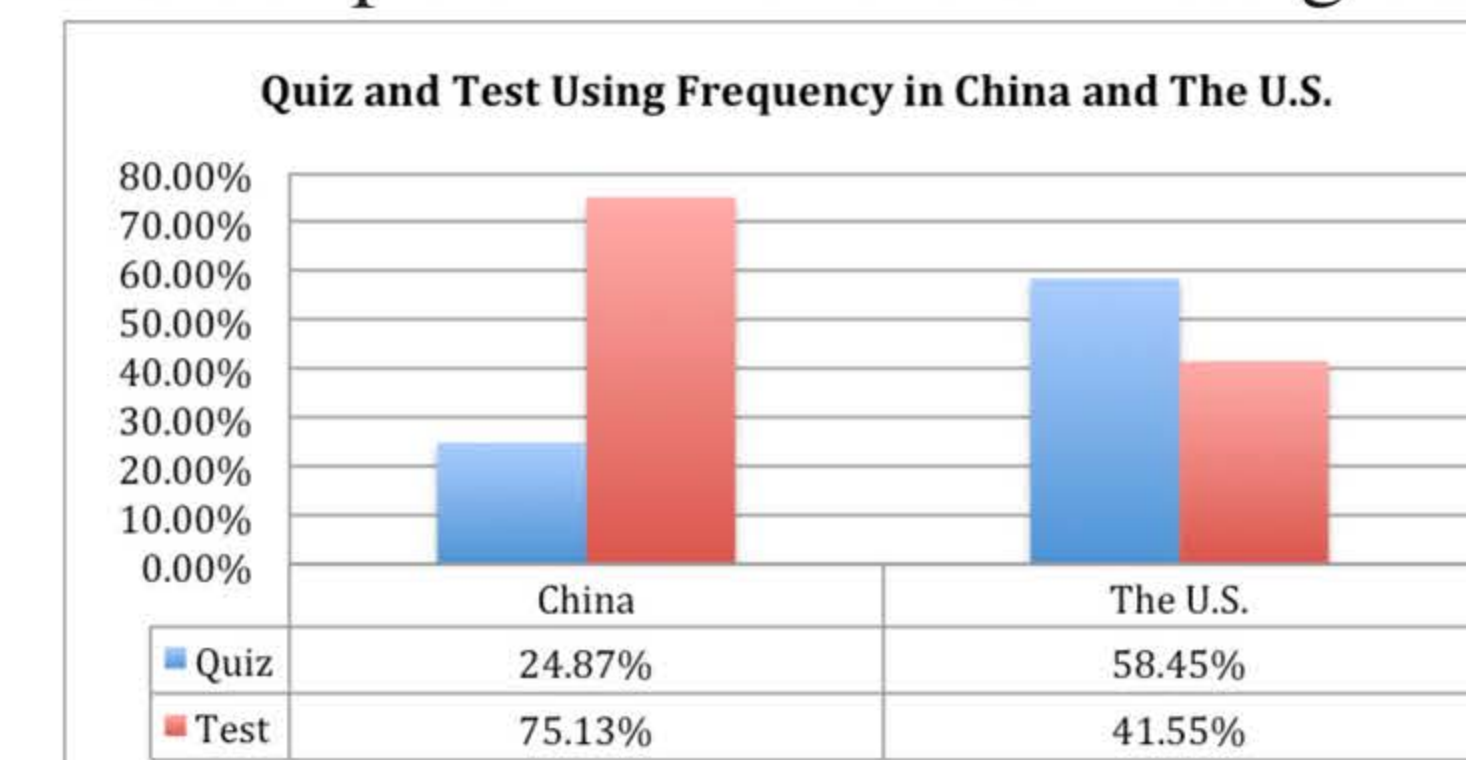
(2) Proof $CE \parallel AD$; ↩

(3) If $AD=5$, $AB=7$, find out the value of $\frac{AC}{AF}$; ↩



Question 2

Quizzes are used more frequently with the U.S sample than with the Chinese group.



Is that true?

When interviewed, teachers from the Chinese group stated :

- I like using quizzes!*
- I prefer quizzes more than formal exams.*
- I am able to know how much did students understand by using the quizzes.*

Why didn't it show on the data?

- I normally don't keep the quizzes files.*
- Sometimes I just write the quizzes on the blackboard.*

what's next

"I don't really understand the meaning of mathematical thinking level. Maybe it is similar to mathematical understanding? And it's really difficult to be evaluated in the classroom assessment" --a middle grade teacher in China



**How do teachers understand the mathematical thinking and reasoning levels?
How can this understanding facilitate and guide the design of classroom assessment?**

