

If this class helps you discover that some things you've believed for a long time are not true, how would you feel?

- A) Pleased to change my opinion.
- B) Irritated.
- C) Initially irritated, but eventually pleased.
- D) Some other feeling / Not sure.

In a lecture class with an interesting, clear, engaging teacher, what fraction of the material presented during the semester does a student typically learn well (well enough to explain to someone else)?

A) 90%

B) 70%

C) 50%

D) 25%

E) 15%

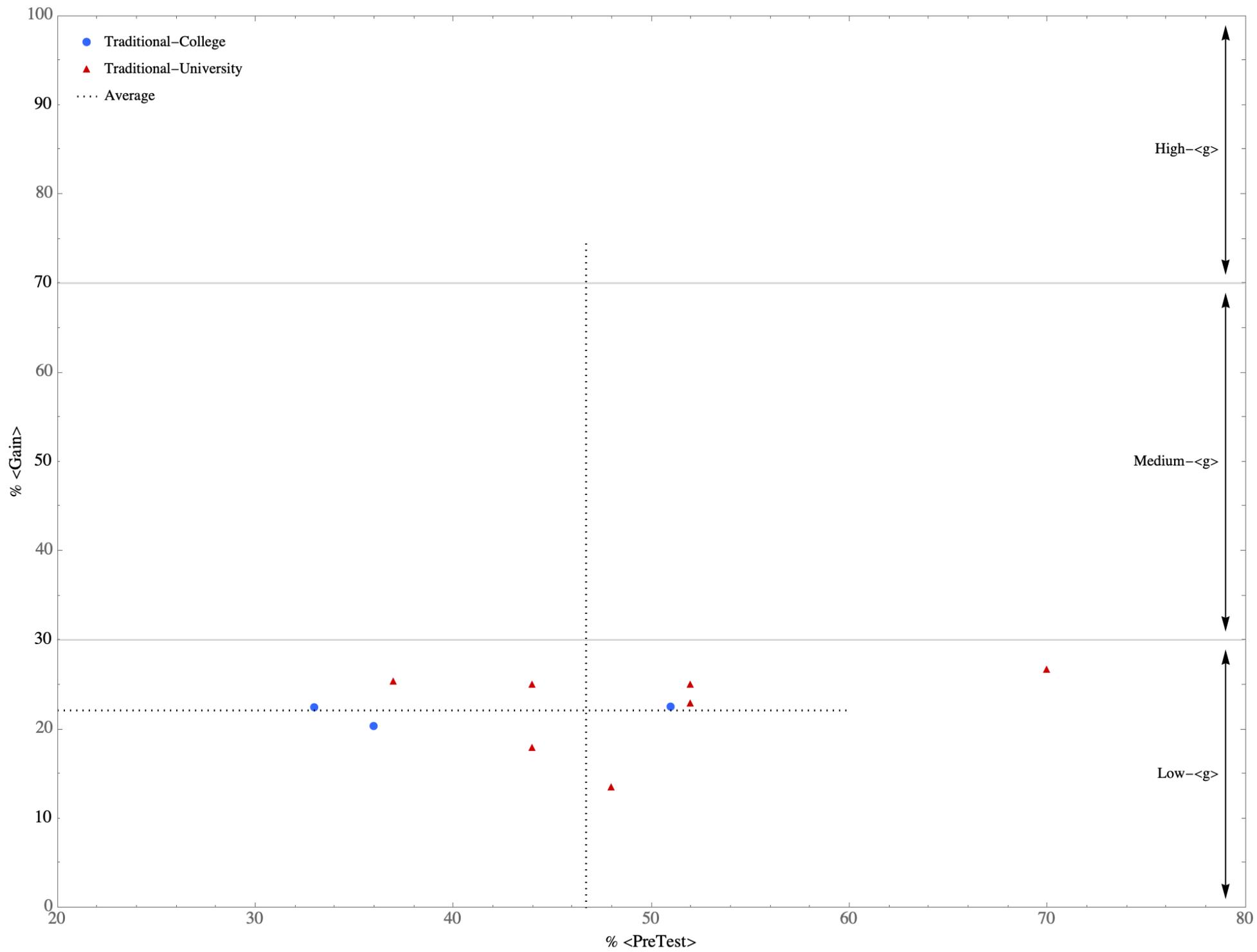


Figure 1. Normalized gain vs. pre-test score on the Force Concept Inventory diagnostic for traditional courses surveyed by Hake.

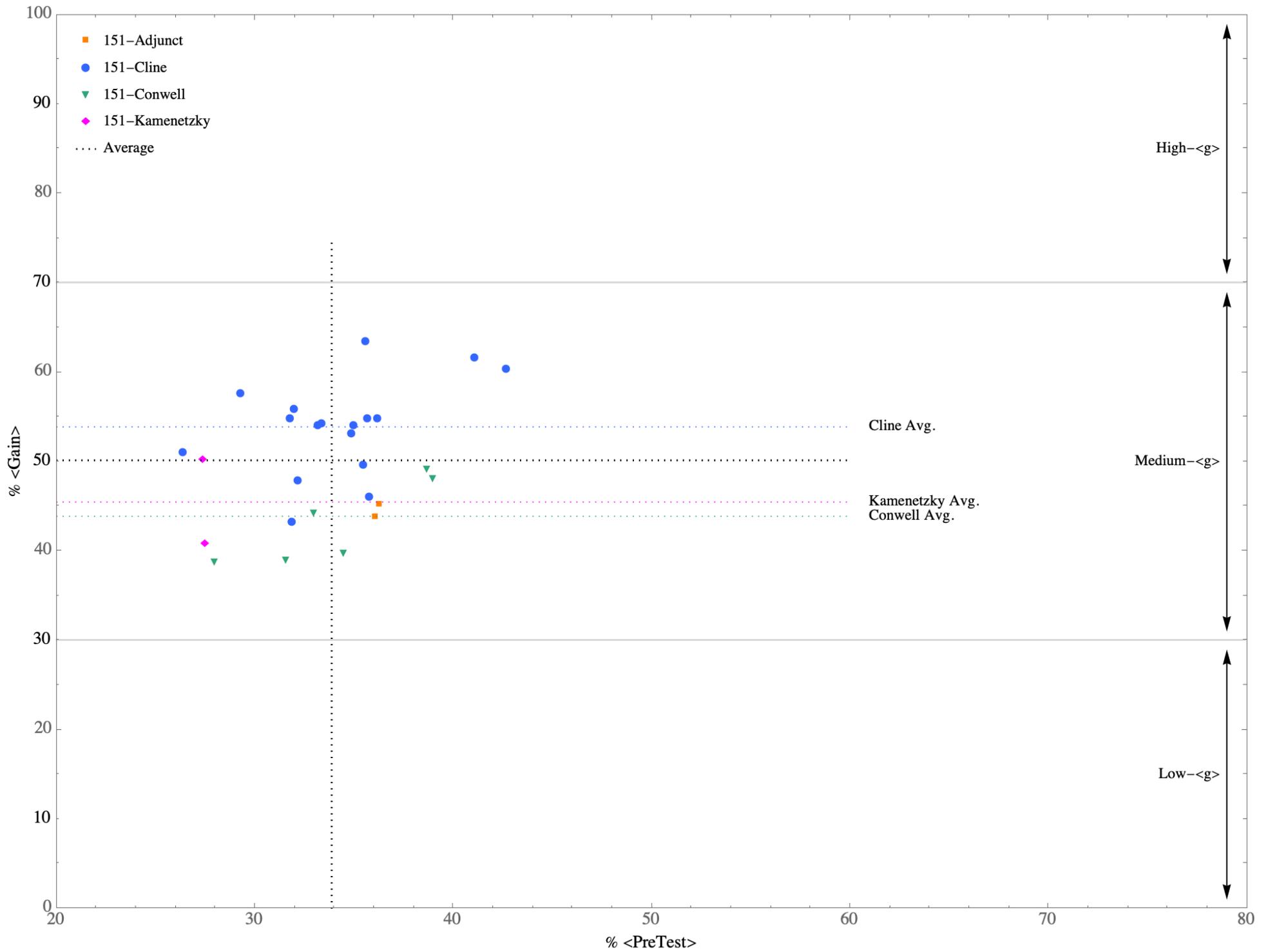


Figure 3. Normalized gain vs. pre-test score on the Force Concept Inventory diagnostic for Physics 151, Westminster College.

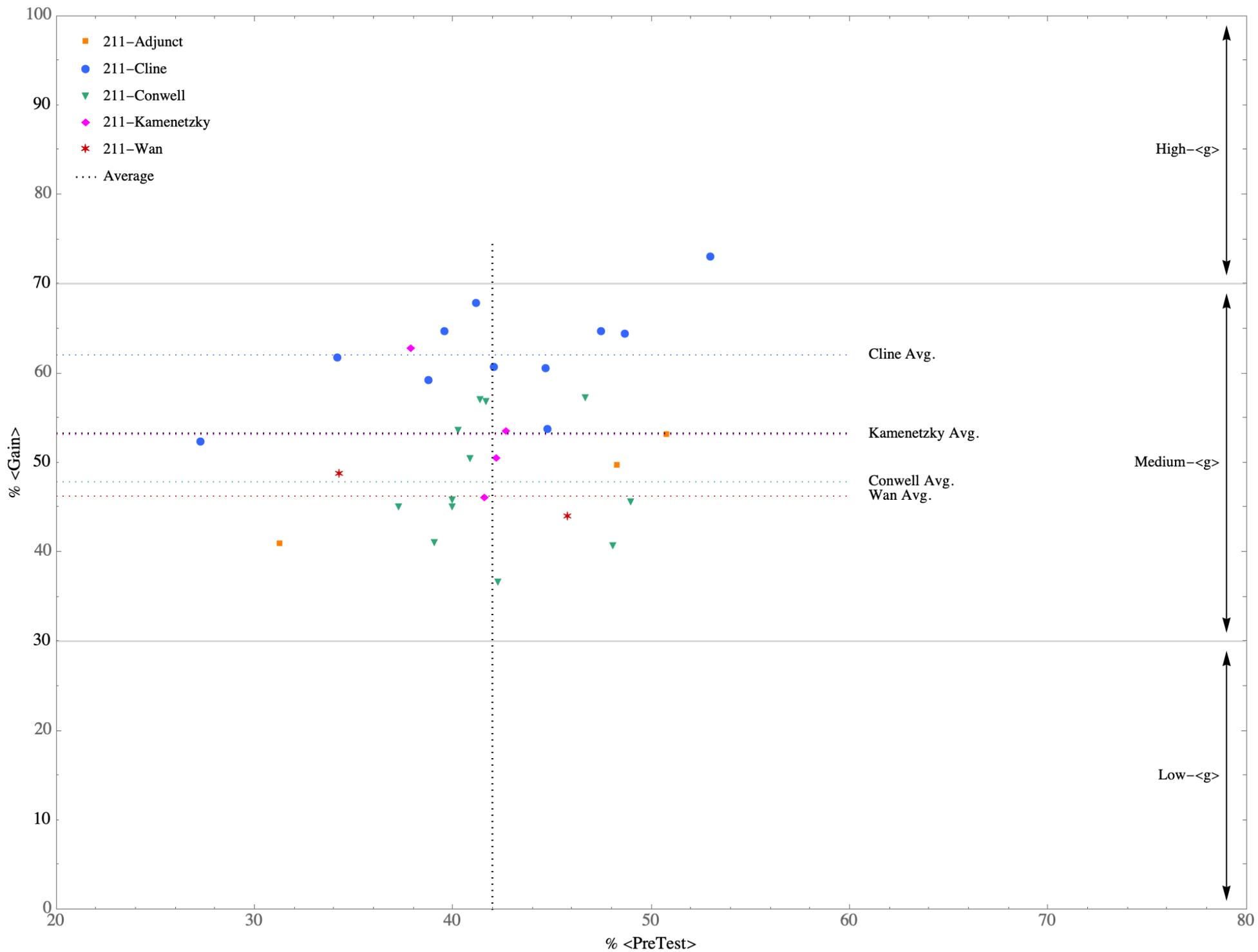


Figure 4. Normalized gain vs. pre-test score on the Force Concept Inventory diagnostic for Physics 211, Westminster College.

Thinking of what you want to get out of your college education and this course, which of the following is most important to you?

- A) Acquiring information (facts and basic concepts)
- B) Deeply learning new concepts that you will use for the rest of your life in and outside of work
- C) Improve your critical thinking
- D) Improve lifelong learning skills

All four of these goals are clearly important. However, let's think for a moment of how best to accomplish these goals. Learning is not a spectator sport—it takes work; that includes work in the classroom and work that you do outside of the classroom.

Which of these do you think you can make headway on outside of class (by doing your own reading and studying)?

- A) Acquiring information (facts and basic concepts)
- B) Deeply learning new concepts that you will use for the rest of your life in and outside of work
- C) Improve your critical thinking
- D) Improve lifelong learning skills

All four of these goals are clearly important. However, let's think for a moment of how best to accomplish these goals. Learning is not a spectator sport—it takes work; that includes work in the classroom and work that you do outside of the classroom.

Which of these would be best achieved in class, working with your classmates and me?

- A) Acquiring information (facts and basic concepts)
- B) Deeply learning new concepts that you will use for the rest of your life in and outside of work
- C) Improve your critical thinking
- D) Improve lifelong learning skills

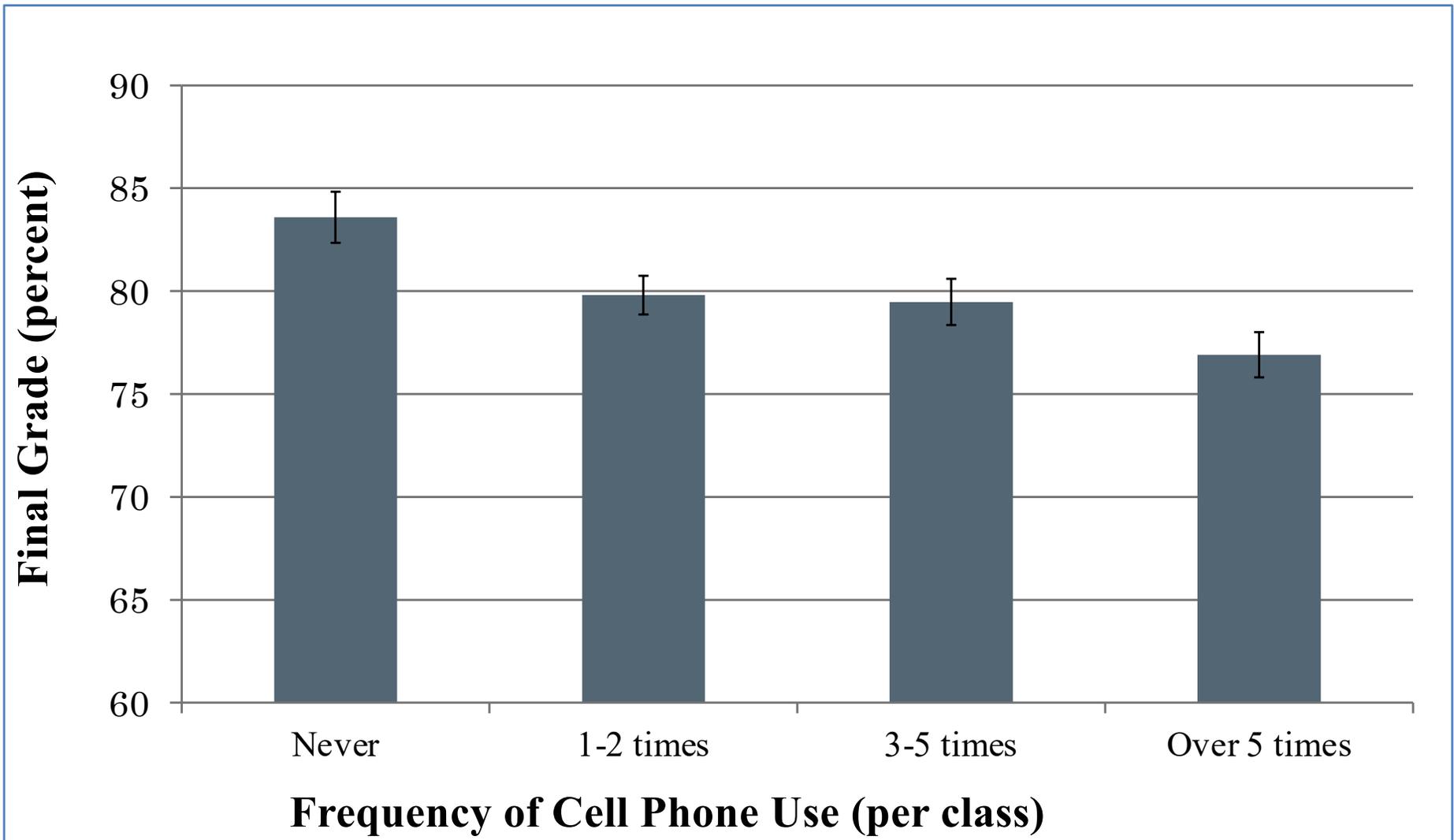
Critical Reading

“They **ask questions**; they **relate the text to other sources**; they think of examples to **corroborate or challenge the text**; they **play with the ideas**, extending or elaborating on them; they **relate the text to their own purposes or experience**. Furthermore, they “**criticize**” the text in the more traditional sense of the word; looking for **bias**, for poorly developed logic, for hidden assumptions. They locate the **author’s position** through active “listening”, relate this to their own ideas or experience, and **reshape their own understandings** in the light of the text.”





3 Astronomy Classes ($N = 328$)
Spring 2012
University of Colorado, Boulder



How to Learn

What matters most for learning? Why?

A) Start intelligent

B) Think about, test understanding, discuss.

C) Spend a lot of time reviewing notes and book.

D) Work out problems

Which activity best corresponds to what people with real jobs do?

A) Multiple choice exams.

B) Electronic/online homework.

C) Listening to lecture and taking notes.

D) Working with others in small groups to solve problems that aren't usually clearly stated.

It is very important that you learn about traxoline. Traxoline is a new form of zionter. It is monotilled in Ceristanna. The Ceristannians gristerlate large amounts of fervon and then bracter it to quasel traxoline. Traxoline may well be one of our most lukised protofoms in the future because of our zionter lesceledge.

What is traxoline?

Where is traxoline monotilled?

How is traxoline quaselled?

Why is it important to know about traxoline?

How is traxoline similar/different from table salt?

Rumors?

Questions?

Things you are curious about?

1. Physics?
2. Instructor?
3. Curriculum?
4. Homework?
5. Difficulty/Ease?
6. Time?
7. Etc.?