

Computer Rage:

A Student Response to Frustration with Technology

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Frustration Theory

- Most behavior is goal directed.
- Problem solving occurs when there are obstacles between the current state and the desired goal state.
- While rationale problem solving involves the search for and testing of alternative solutions, sometimes obstacles can also cause a sense of frustration.
- When frustration exceeds a person's limit to control it, rage can occur.

Learning Can be Frustrating

- Not having access to the materials in a timely manner.
- Not understanding the material.
- Not completing the required assignment, well or on time.
- Not achieving the "learning objective."
- etc., etc.
- Not achieving the desired grade.

Teaching with Technology

- Tries to solve many of frustrations with learning by using technology (e.g., accessibility, multimedia, etc).

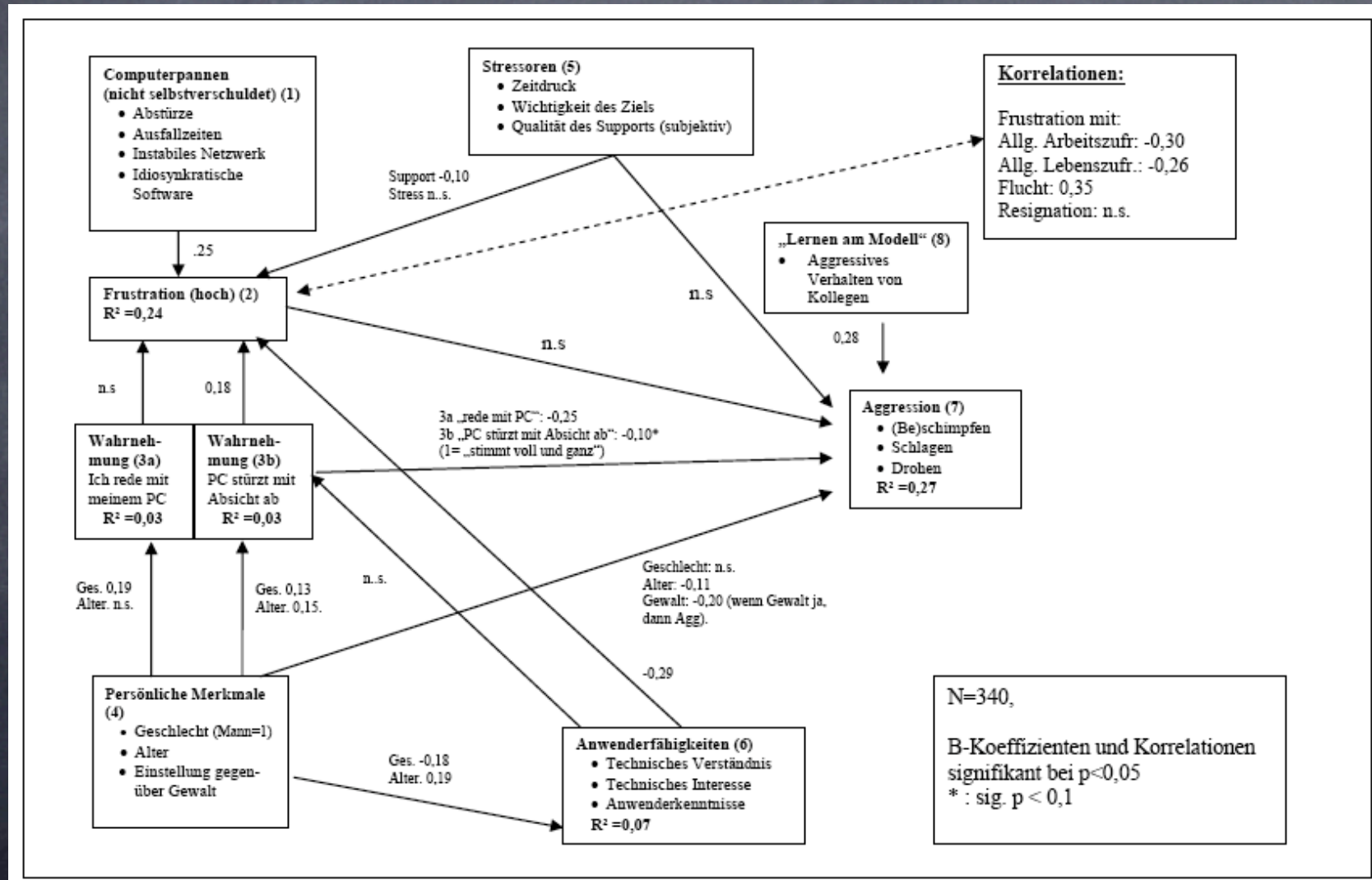
Frustration Theory + Learning + Technology

- But technology also introduces a whole new set of frustrations with computers!
- The outcome can be “computer rage” in the context of learning.

What is Computer Rage?

- Physical Bashing of a Computer and/or a Computer Related Item
- Verbal Abuse of a Computer and/or a Computer Related Item (Brinks, 2004)
- Heightened Physiological Response with Associated Feelings of Anger and Frustration (Lazar, Jones, Bessiere, Ceaparu, & Shneiderman, 2004)

Full Theory of Computer Rage



Simple Theory of Computer Rage

Microsoft  Rage

Online Survey Sample

- lap.umd.edu/computer_rage
- Total sample N = 2141
- US sample of undergraduate students, N = 277, from 5/15/2002 to 1/30/2005 with a massive spike from 12/12/2004 to 1/21/2005 as result of media exposure (Baltimore Sun, Kojo Nnamdi Show, Future Tense, WUSA Channel 9 News, ...)
- 202 males and 75 females.

Computer Experience of the Students

- 97% of the males and 81% of the females reported spending 7+ hours per week on the computer.
- 94% of the males and 68% of the females reported spending 7+ hours per week on the computer.

Overall how frustrated are you with computers?

■ Males ■ Females

mean = 3.60

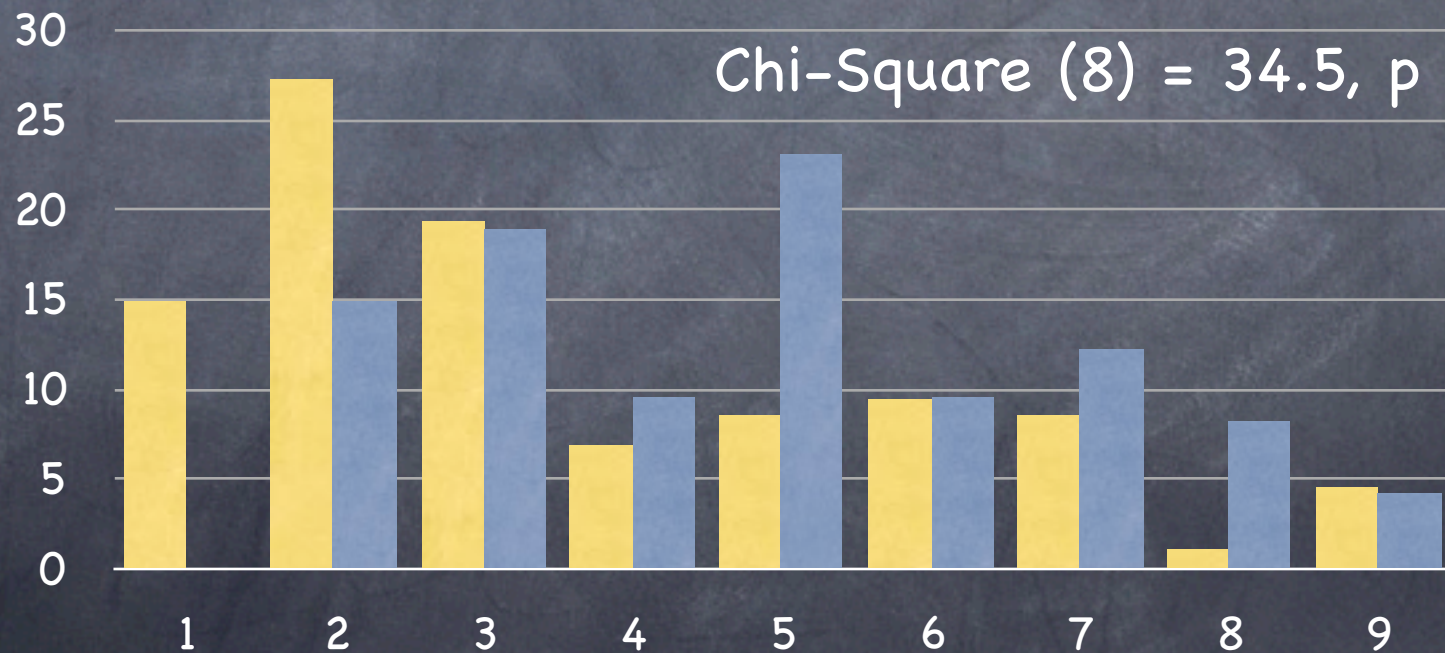
4.82

sd = 2.23

2.04

$t(274) = 4.12, p < .001$

Percent
within
Gender



Chi-Square (8) = 34.5, $p < .001$

Not at all

Rating

Very much

Have you ever been angry with a computer?

■ Males ■ Females

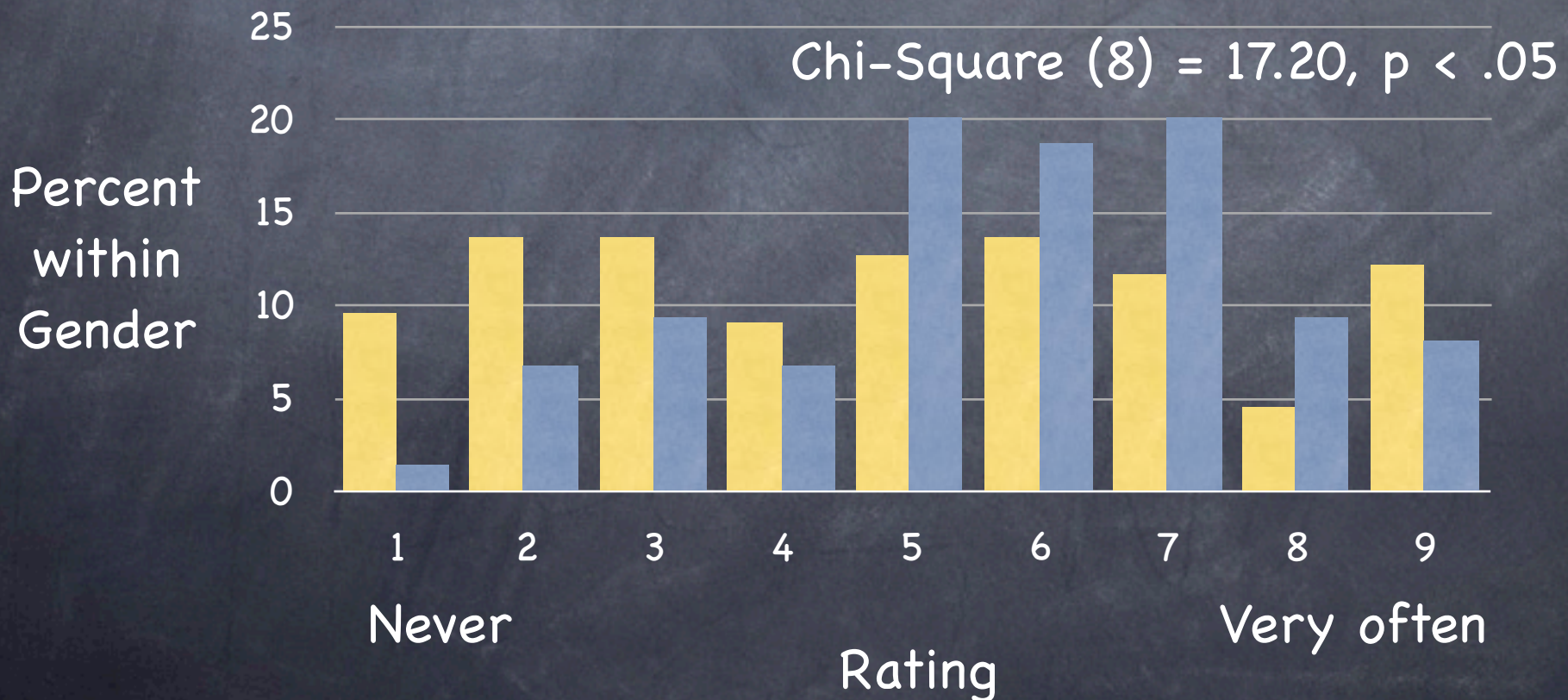
mean = 4.83

5.68

sd = 2.51

1.99

$t(272) = 2.62, p < .01$



How frustrated do you get when the computer crashes and has to be restarted?

■ Males ■ Females

mean = 5.83

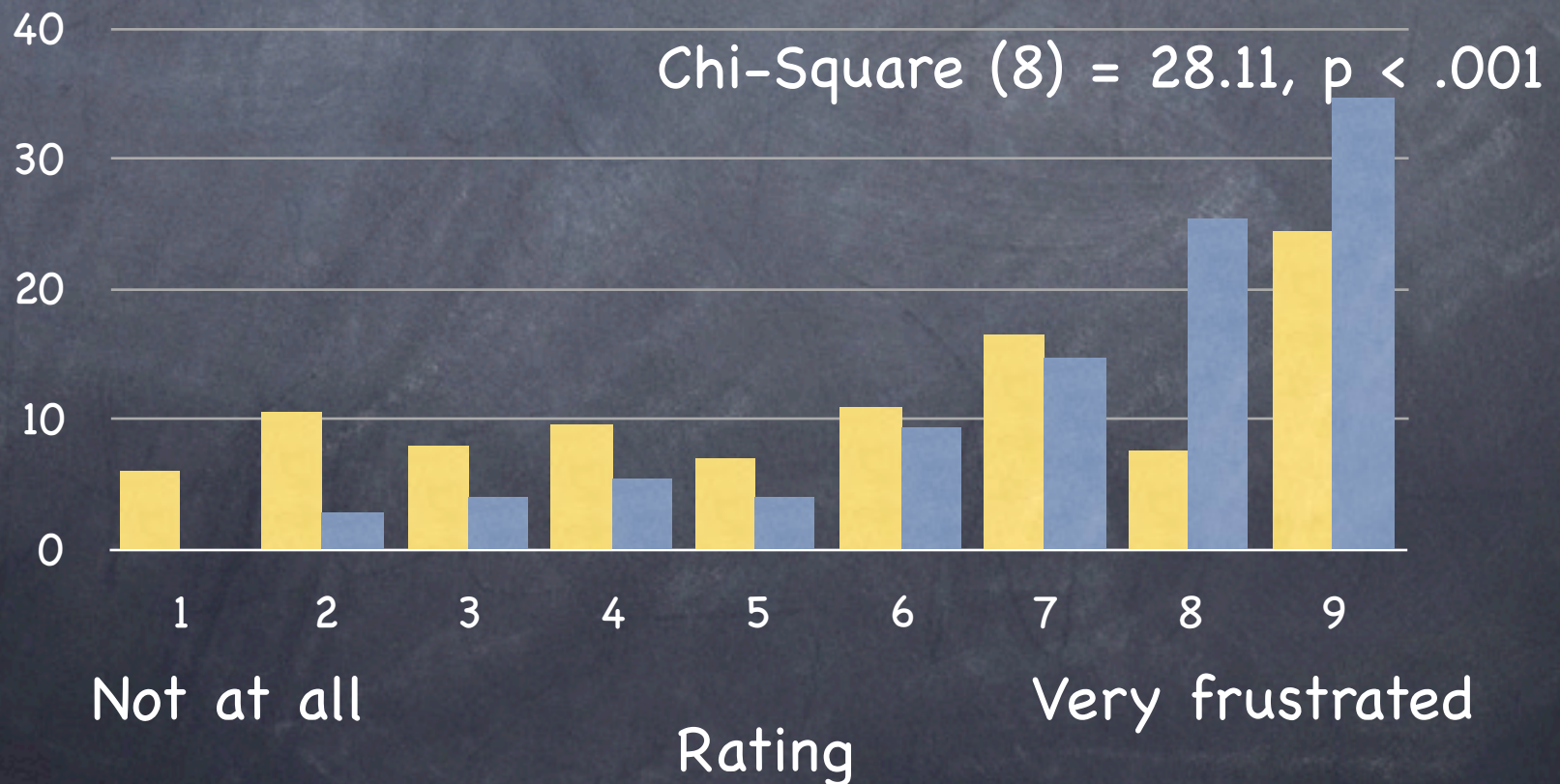
7.32

sd = 2.64

1.90

$t(274) = 4.46, p < .001$

Percent
within
Gender



To what extent have you been frustrated waiting for a computer to do something?

■ Males ■ Females

mean = 5.67

6.51

sd = 2.67

1.97

$t(274) = 2.47, p < .001$

Chi-Square (8) = 21.87, $p < .01$



How often have you been frustrated because you had to redo something over and over because of a computer problem?

■ Males ■ Females

mean = 4.63

5.40

sd = 2.48

2.05

$t(275) = 2.39, p < .05$

Chi-Square (8) = 16.14, $p < .04$



How annoying is it to you to use a mouse to move a cursor around the screen?

■ Males ■ Females

mean = 2.13

3.20

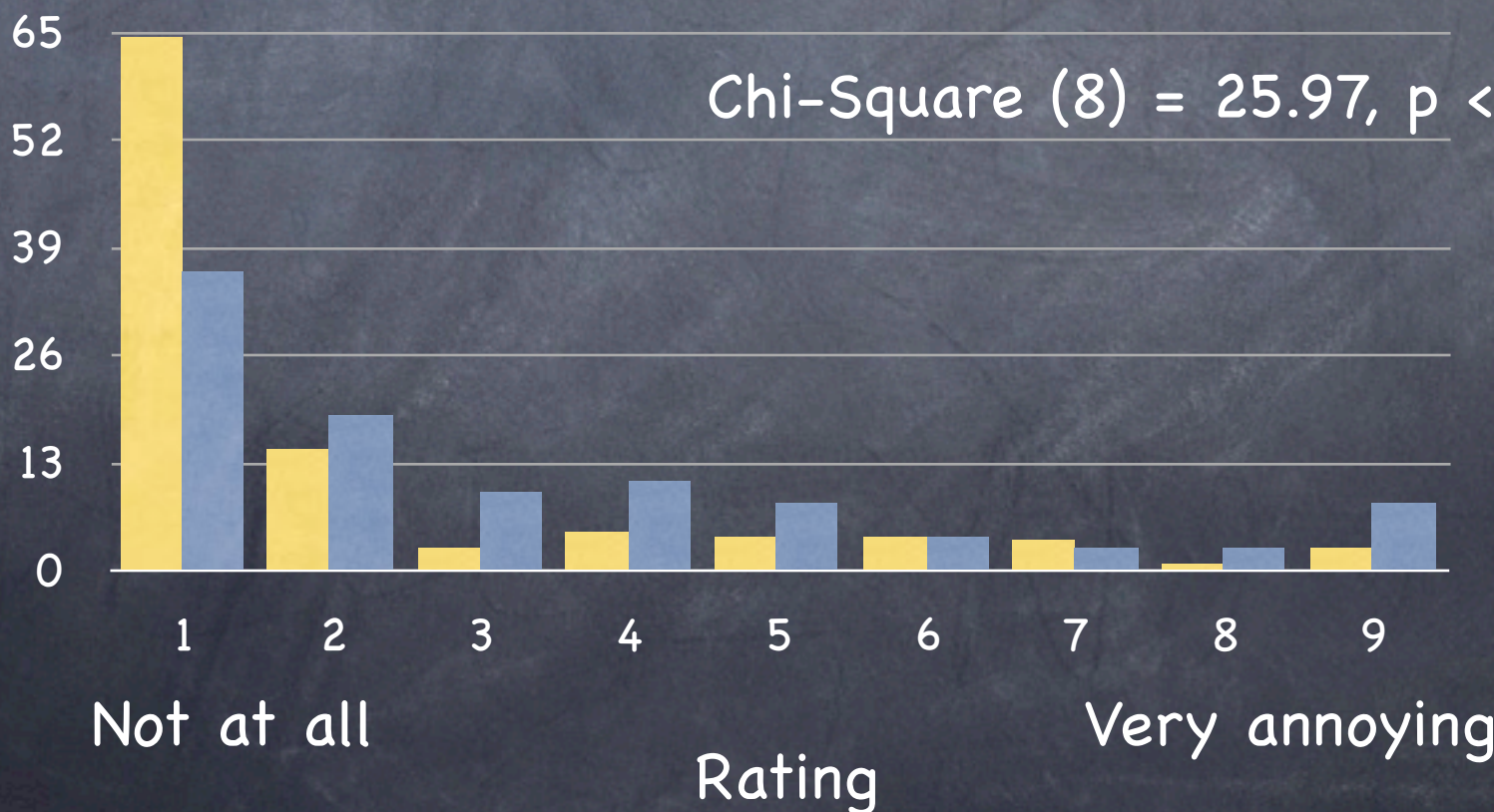
sd = 2.03

2.54

$t(274) = 3.64, p < .001$

Percent
within
Gender

Chi-Square (8) = 25.97, $p < .001$



How irritated have you been by how hard it is to read the computer screen?

■ Males ■ Females

mean = 2.26

3.37

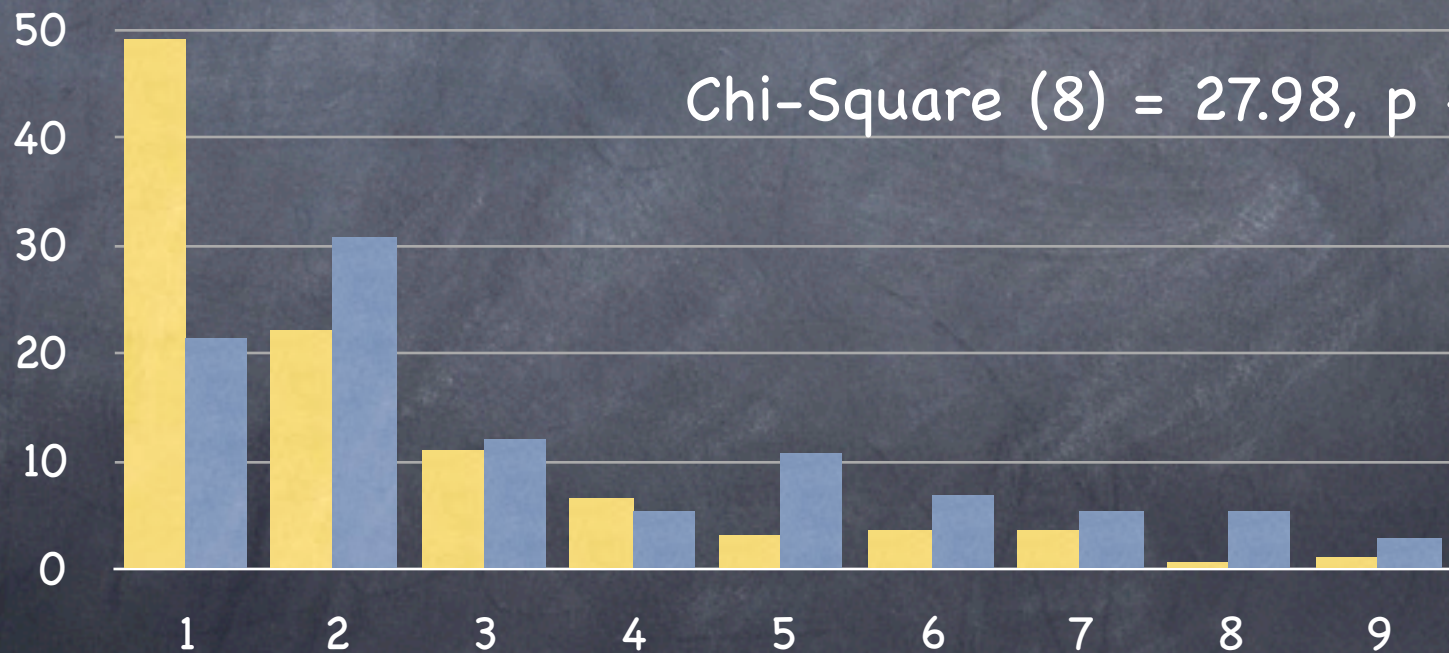
sd = 1.78

2.31

$t(273) = 4.26, p < .001$

Percent
within
Gender

Chi-Square (8) = 27.98, $p < .001$



Not at all

Rating

Very irritated

How annoyed have you been because of typing errors on a computer?

■ Males ■ Females

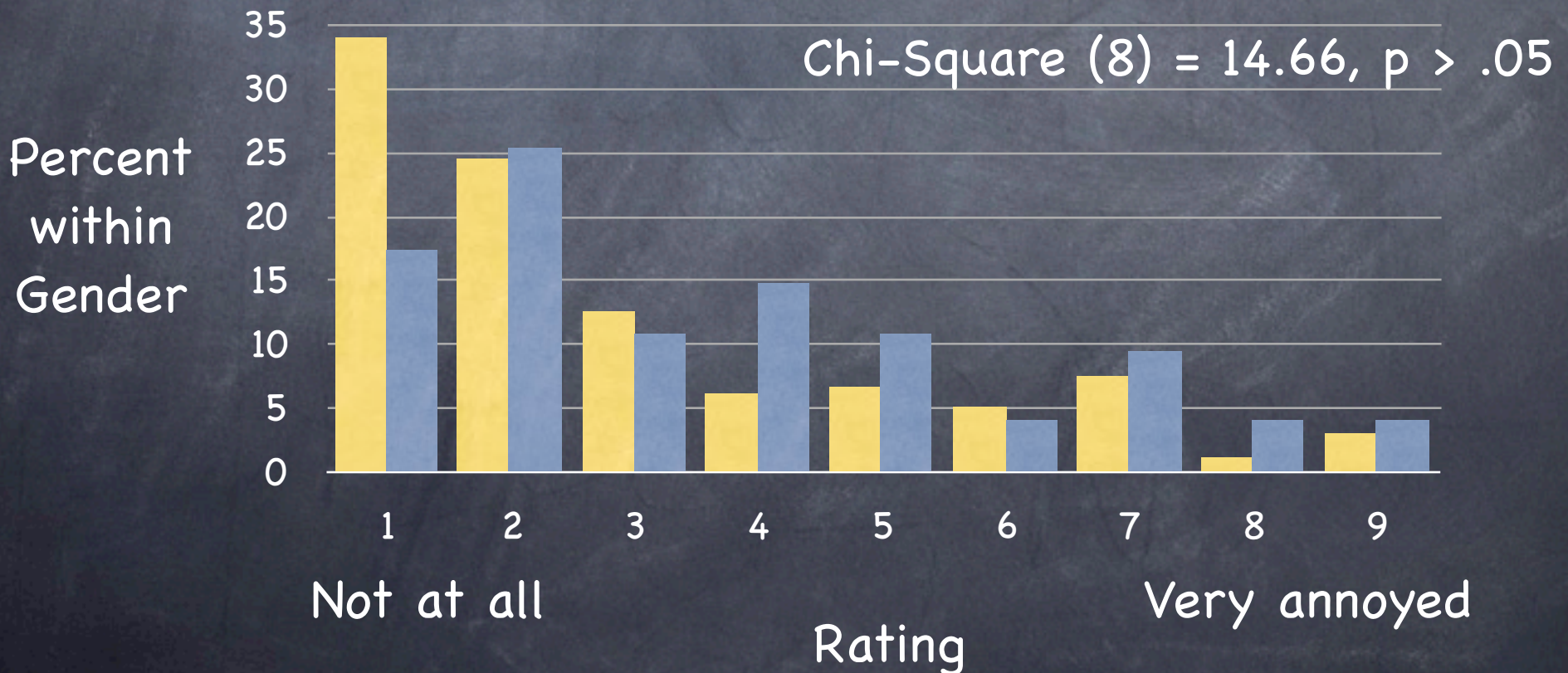
mean = 2.95

3.69

sd = 2.22

2.32

$t(273) = 2.46, p < .05$



How frustrated have you been by not understanding how the computer works?

■ Males ■ Females

mean = 2.49

4.47

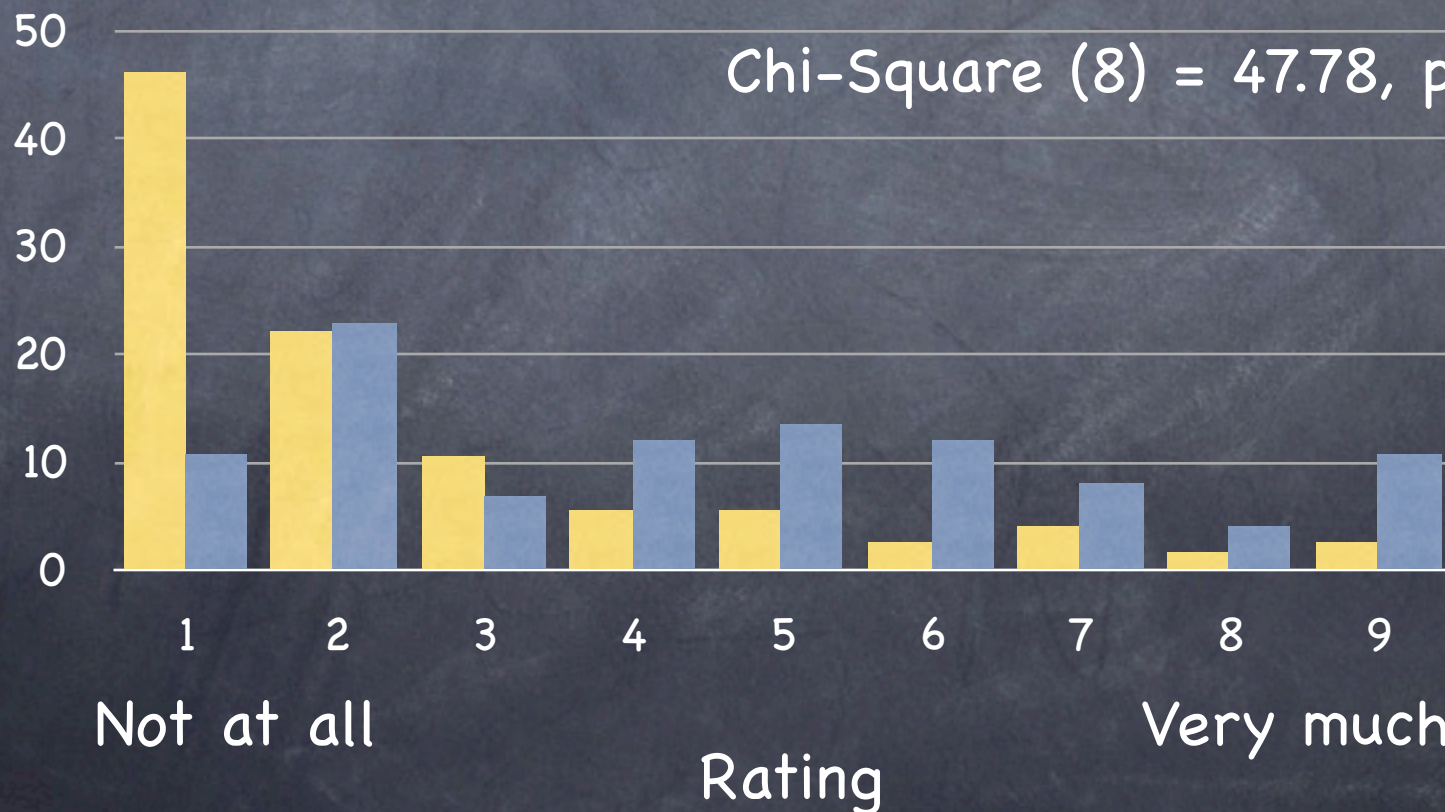
sd = 2.06

2.54

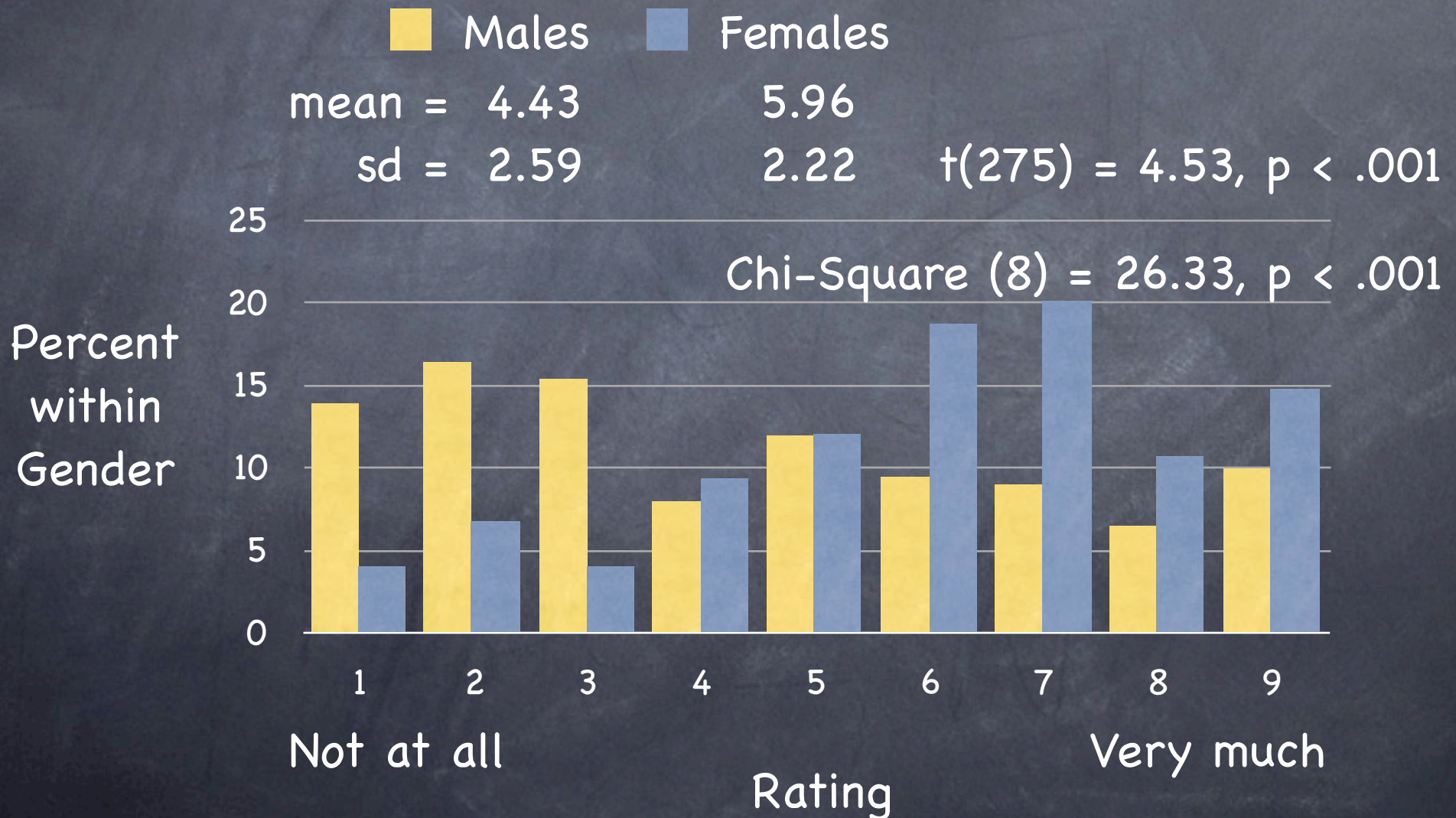
$t(273) = 6.66, p < .001$

Chi-Square (8) = 47.78, $p < .001$

Percent
within
Gender



How frustrated have you been when you could not figure out how to get the computer to do something that you wanted?



How frustrating are computer manuals and documentation to you?

■ Males ■ Females

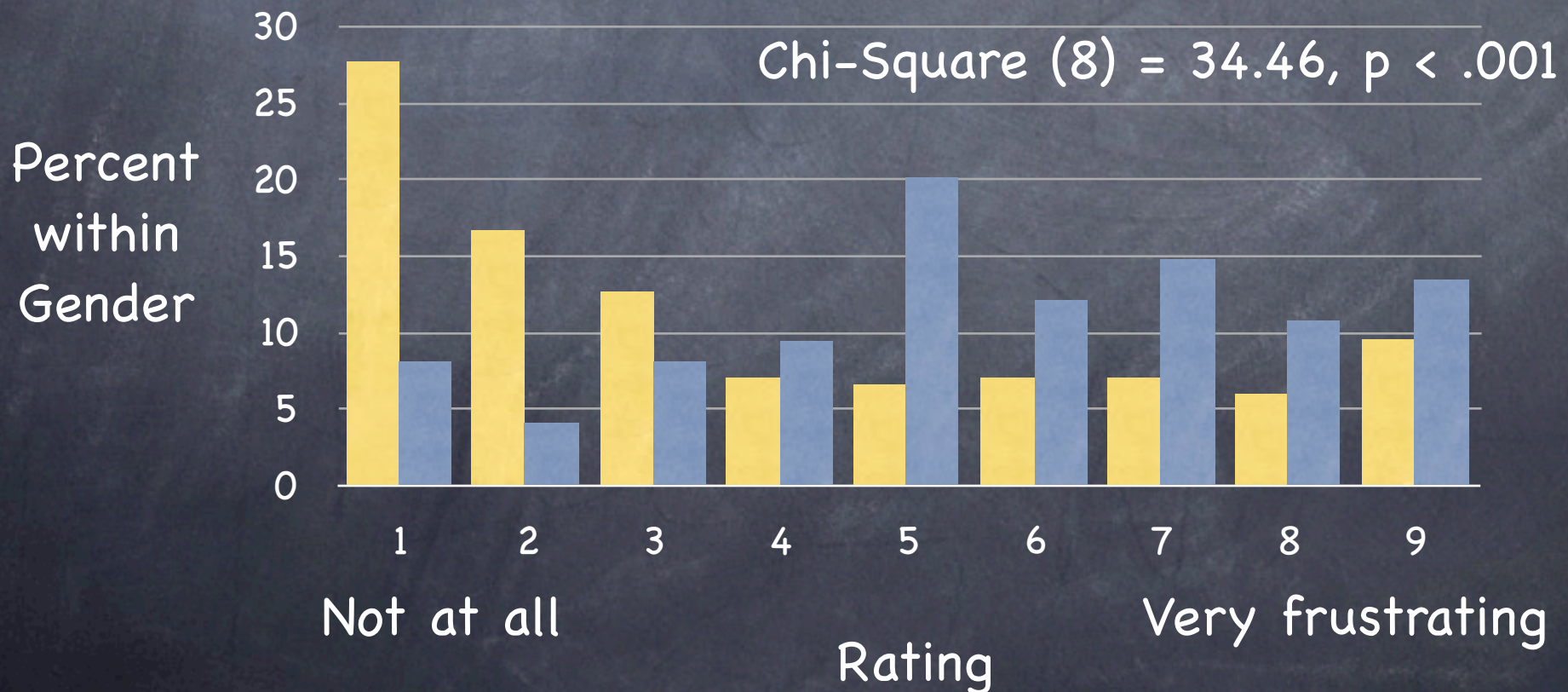
mean = 3.85

5.57

sd = 2.76

2.37

$t(272) = 4.78, p < .001$



How annoyed have you been by computer help systems not giving you answers?

■ Males ■ Females

mean = 5.52

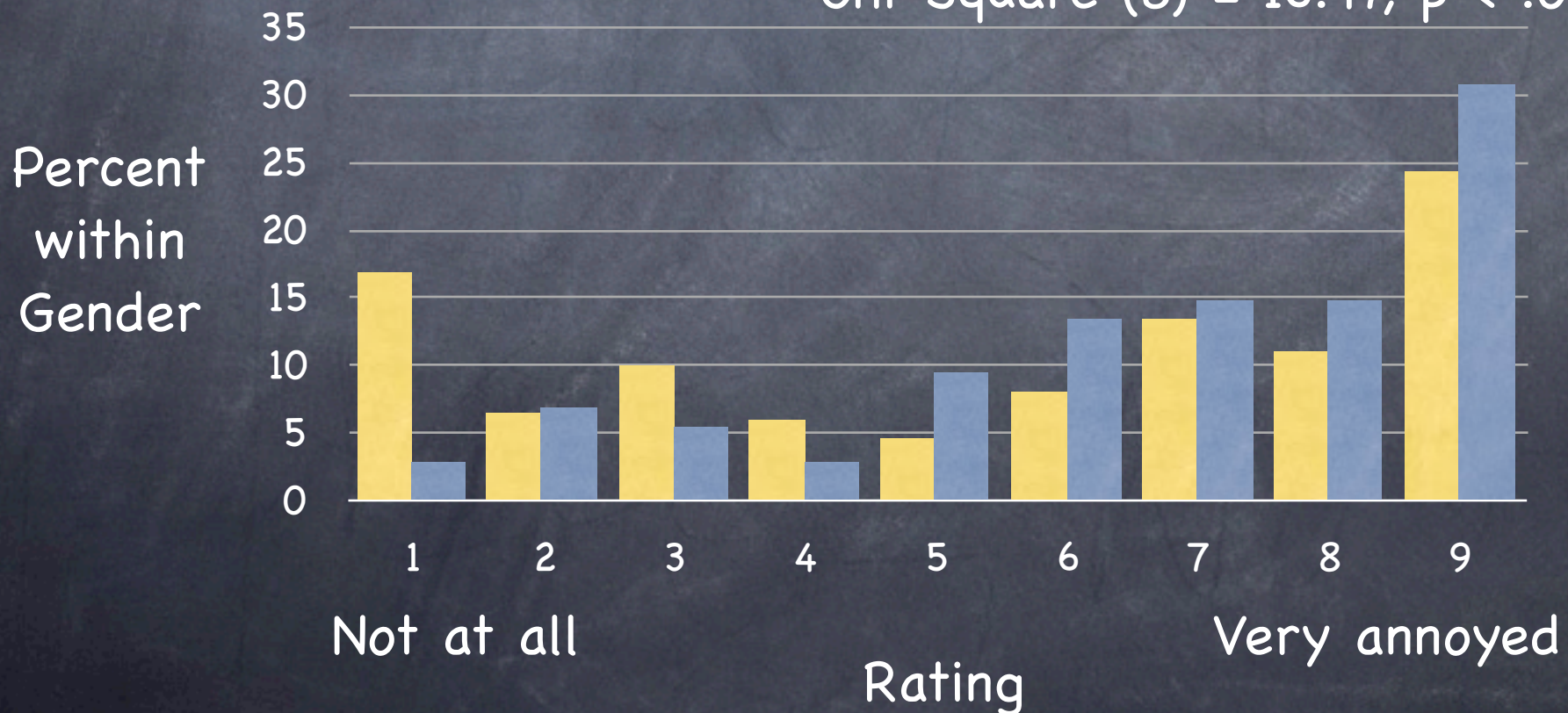
6.65

sd = 3.00

2.36

$t(275) = 2.95, p < .01$

Chi-Square (8) = 16.47, $p < .05$



How annoyed have you been with computer help desks and hot lines?

■ Males ■ Females

mean = 4.97

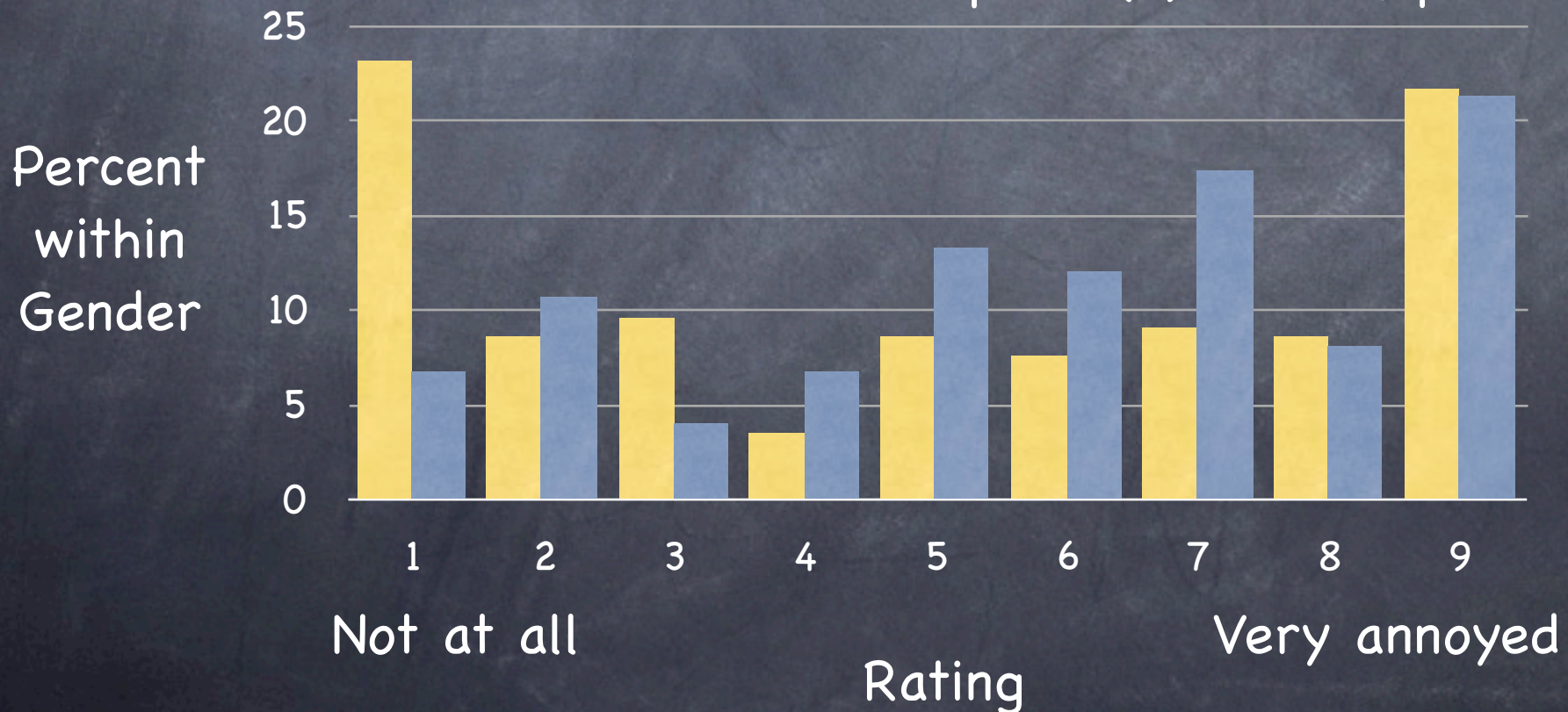
5.83

sd = 3.10

2.57

$t(272) = 2.13, p < .05$

Chi-Square (8) = 17.34, $p < .05$



How frustrating is it trying to find information on the World Wide Web?

■ Males ■ Females

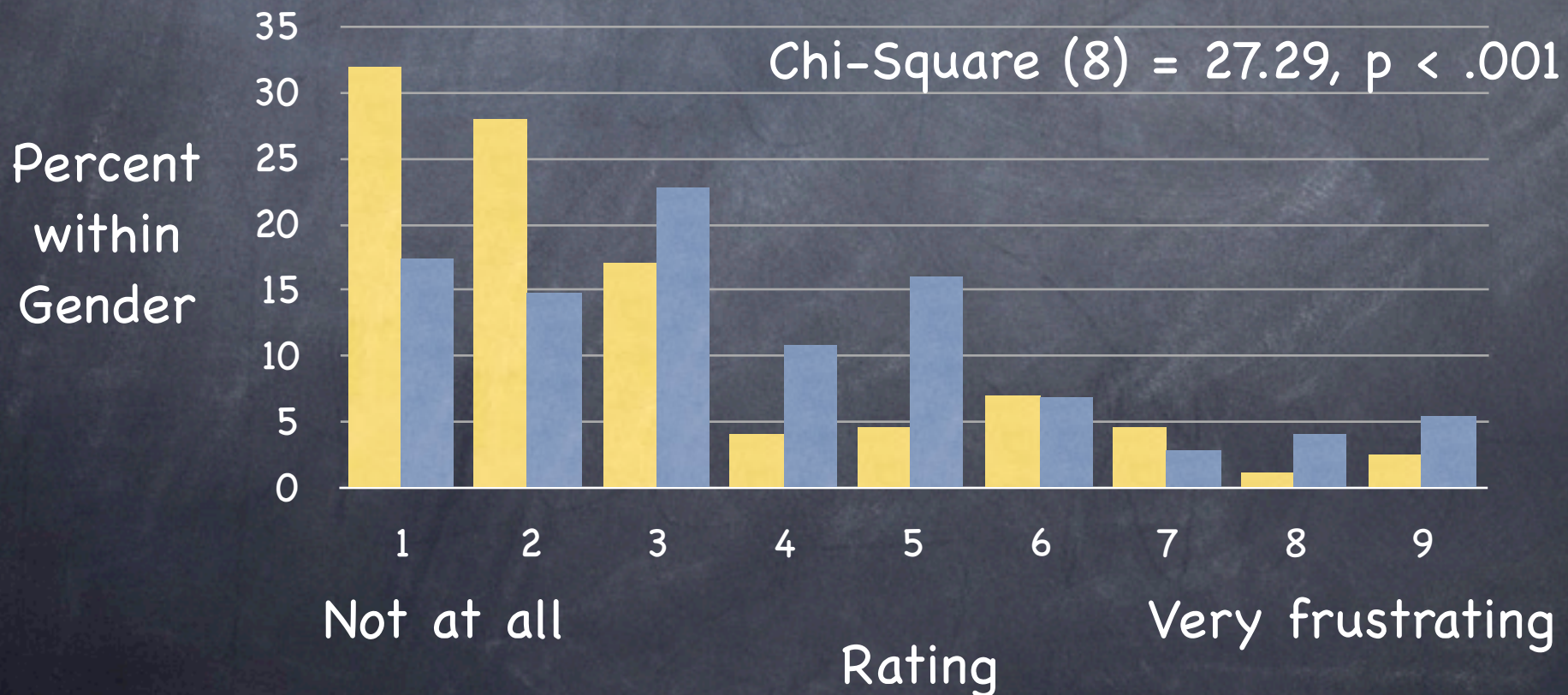
mean = 2.80

3.76

sd = 2.06

2.24

$t(274) = 3.36, p < .001$



How annoyed are you by too much email?

■ Males ■ Females

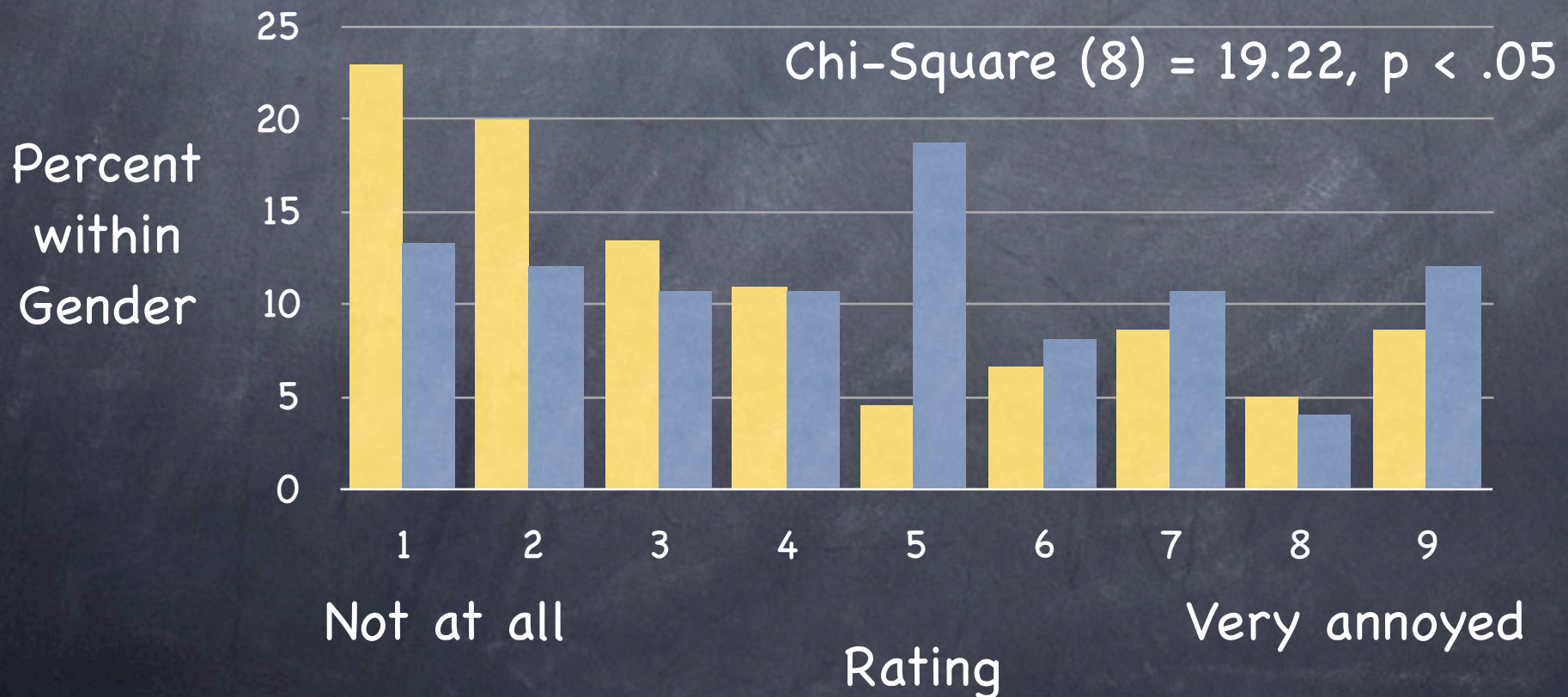
mean = 3.83

4.68

sd = 2.64

2.55

$t(274) = 2.40, p < .05$



How frustrated have you gotten when trying to set up a new computer system?

■ Males ■ Females

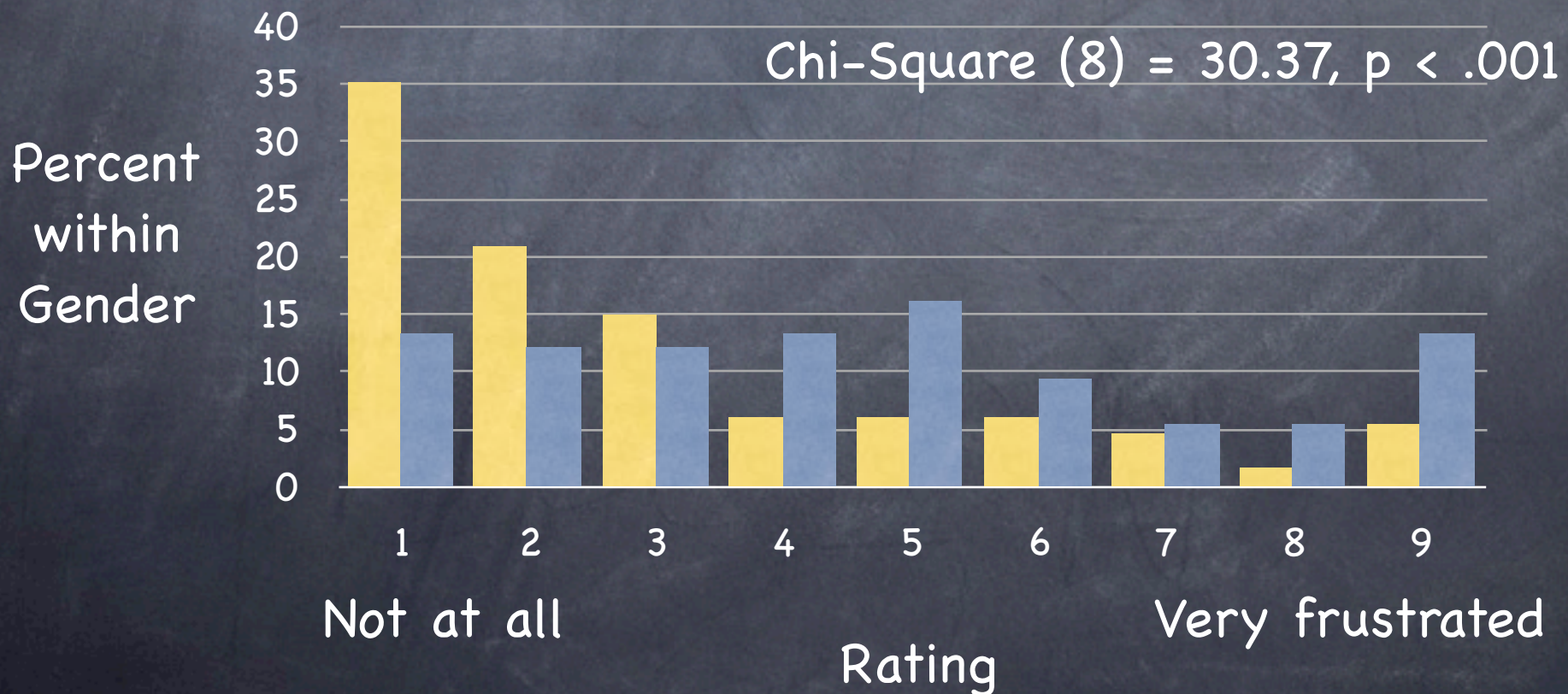
mean = 3.02

4.63

sd = 2.35

2.59

$t(275) = 4.90, p < .001$



How frustrated have you gotten when trying to install new software?

■ Males ■ Females

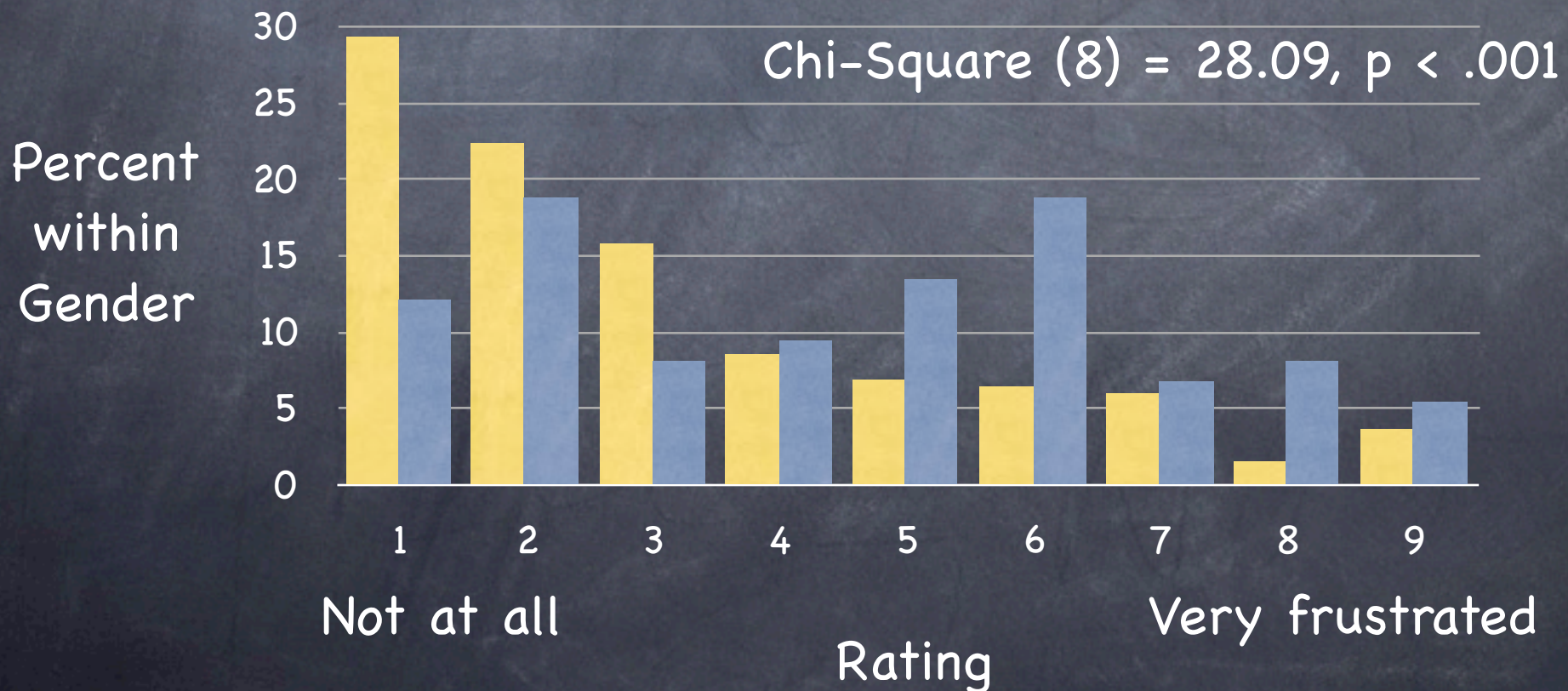
mean = 3.13

4.48

sd = 2.22

2.42

$t(275) = 4.40, p < .001$



How irritating has it been for programs to become obsolete and having to upgrade to new versions?

■ Males ■ Females

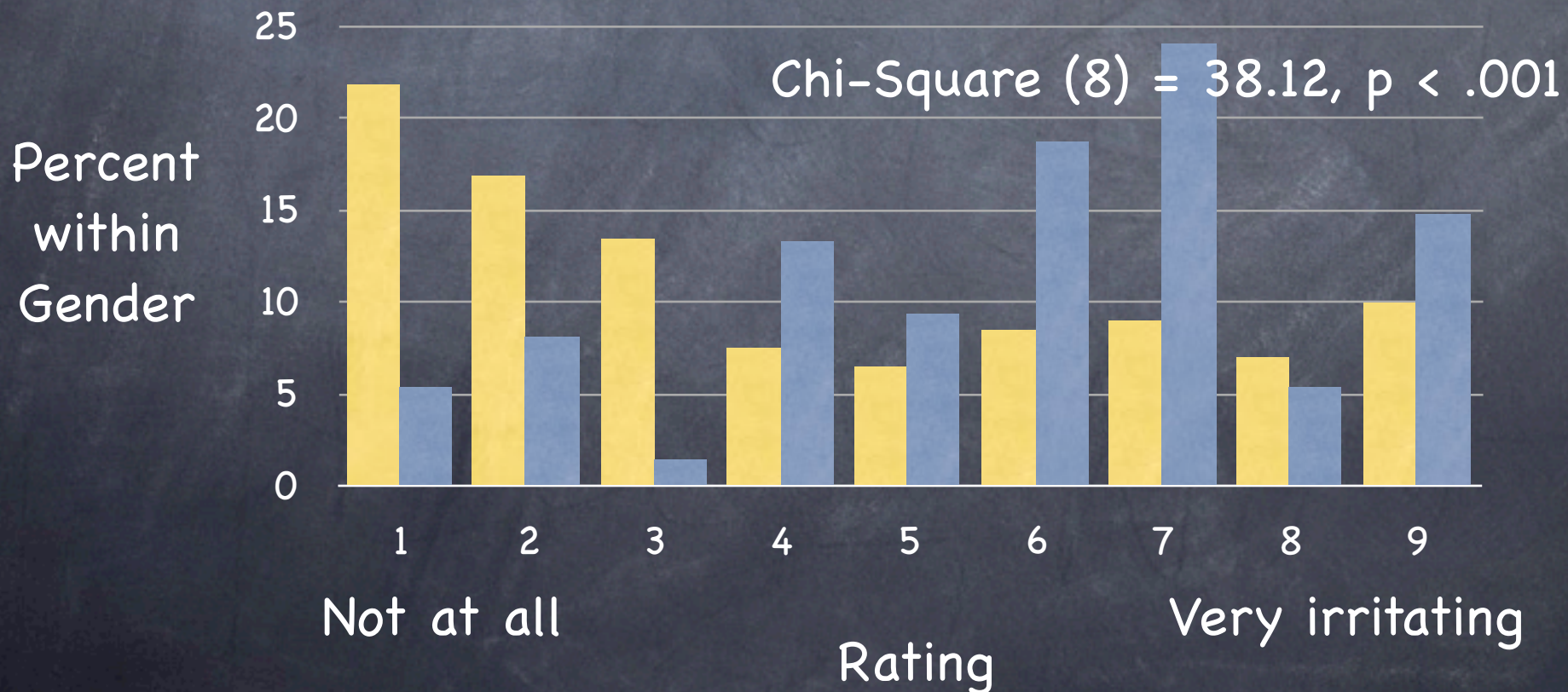
mean = 4.15

5.80

sd = 2.75

2.27

$t(275) = 4.64, p < .001$



Have you ever wanted to throw your monitor out of a window?

■ Males ■ Females

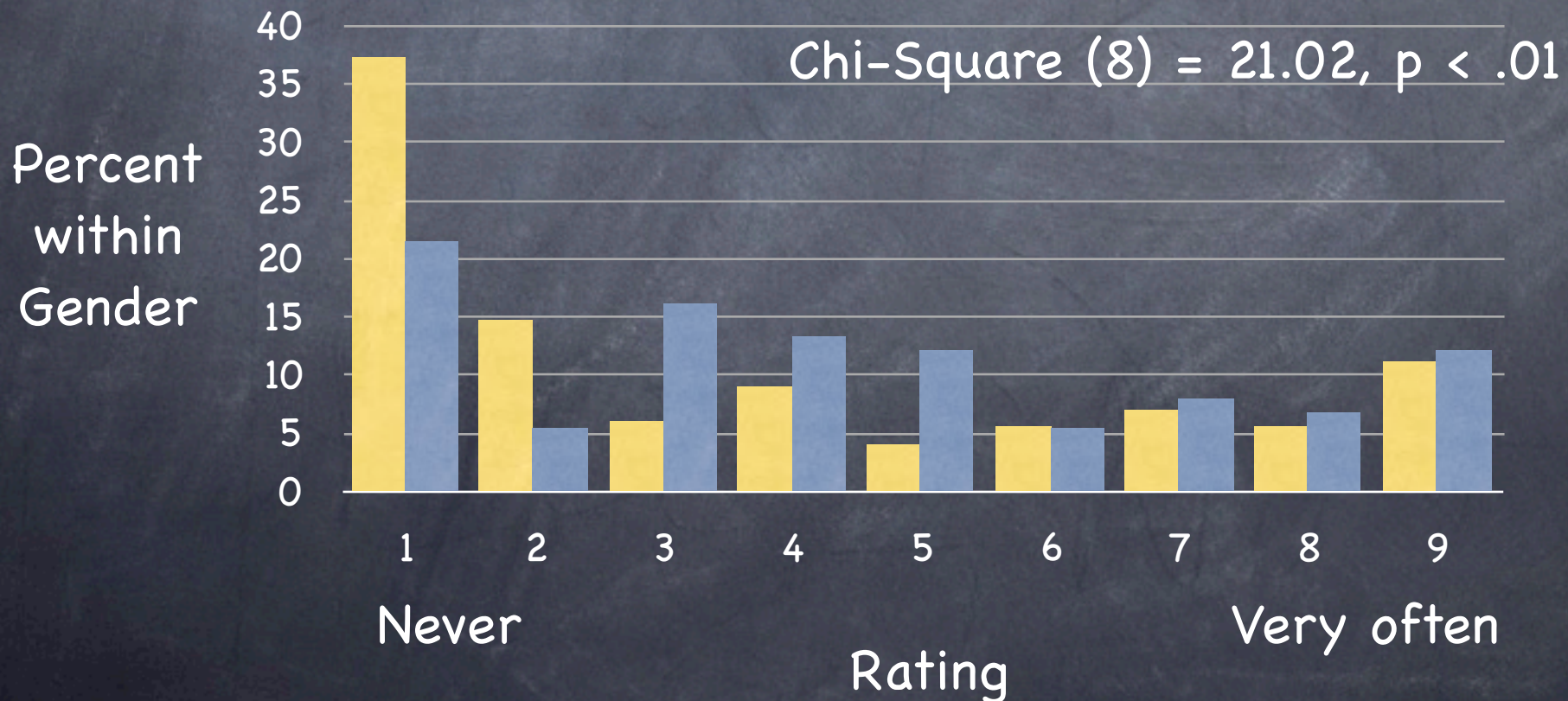
mean = 3.67

4.43

sd = 2.91

2.71

$t(272) = 1.96, p > .05$



Have you ever felt like smashing a computer screen with a heavy object?

■ Males ■ Females

mean = 4.30

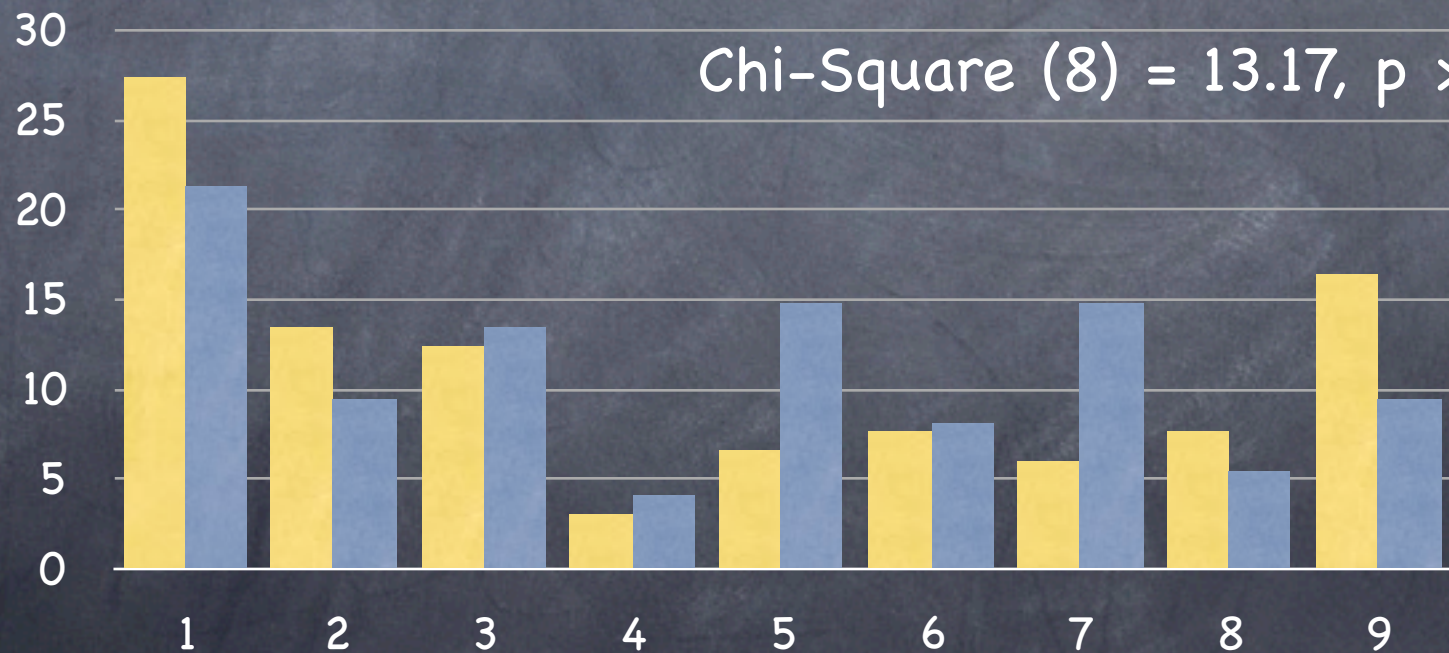
4.47

sd = 3.05

2.70

$t(274) = .42, p > .05$

Percent
within
Gender



Chi-Square (8) = 13.17, $p > .05$

Never

Rating

Very often

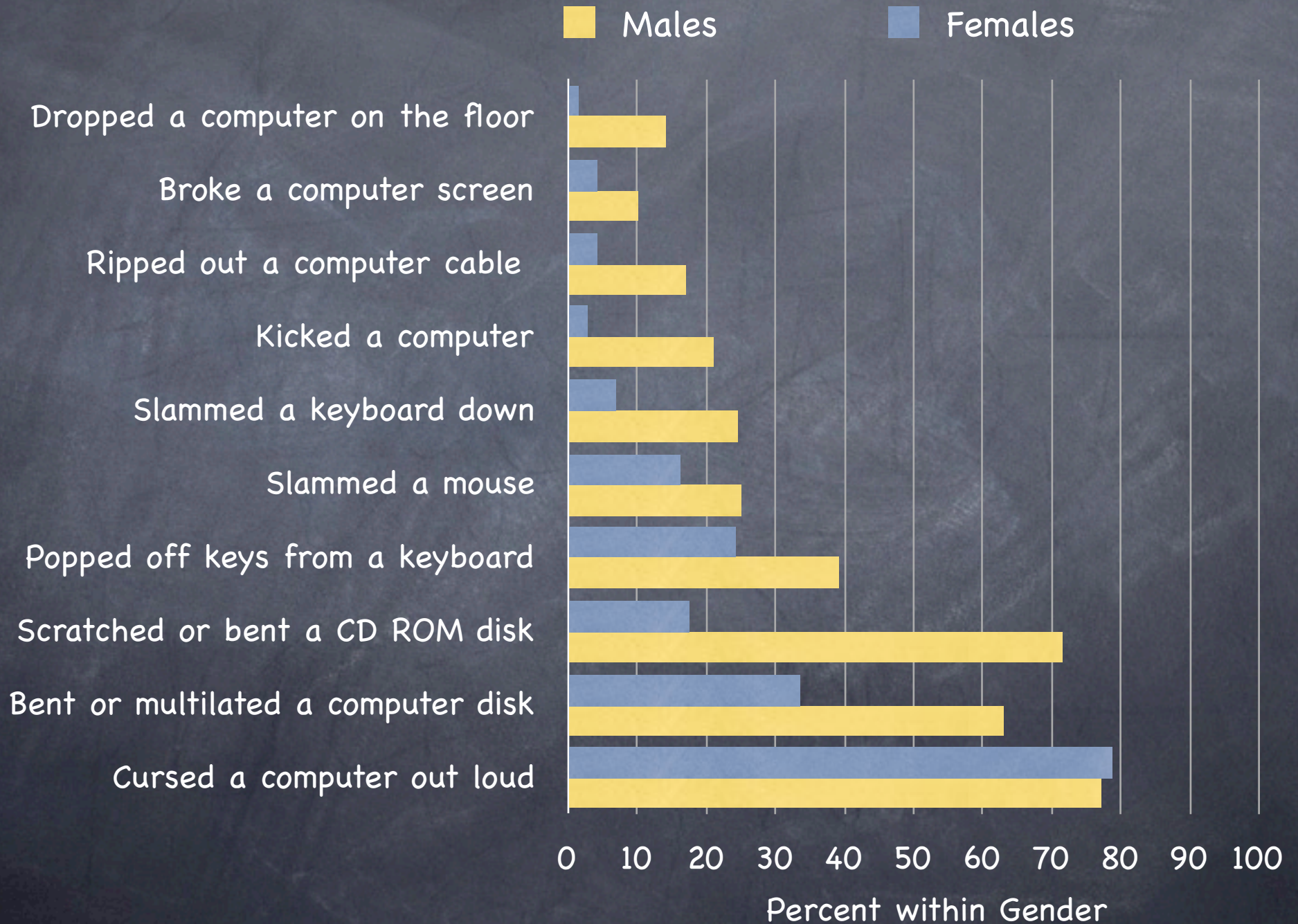
Experience Factors and Frustration

- Number of hours on the computer and the WWW was correlated, $r = .54$.
- Both of these experience factors were negatively correlated with frustration on all factors except with help systems, help desks, and email.

Students versus Others

- There were 277 students (undergraduates and graduates) and 629 others (employed, not employed, etc)
- Students had an average age of 23.7 and others 38.7.
- Students were significantly LESS frustrated than others on the following factors:
 - reading a computer screen
 - manuals and documentation
 - help desks and hot lines
 - too much email
 - installing new software
 - upgrading to new versions

Incidence of Rage Behaviors by Gender



The Down Side of Computer Rage

- Destruction of personal, and/or school property (Dollar estimates are hard to come by. IT personnel at UMD were queried. Result: no response, no comment, don't know, privileged information, a lot)
- Potential injury to self or others: physical and psychological
- Loss of personal time, study time, class time

The Up Side of Computer Rage

- Release of "pent" up anger and frustration
- Directed at physical objects rather than other people
- Can be personally rewarding
- Helps to reduce inventory of older equipment and increase purchase of new equipment

Managing Computer Rage: Good Practices

- Controlled Rage: Find the appropriate time, place, and method.
- Safety First: Use safety goggles and protect others.
- Select Targets Wisely: Preferably Vent on Obsolete Equipment.
- Consider Vicarious Computer Rage: Watch our Computer Rage I and II DVDs.

Avoiding Frustration While Teaching/Learning with Technology

- Expect the worst: back-up, pre-plan alternative solutions, multiple access points.
- Demand reliable, easy to use systems.
- Keep spare mice, keyboards, computers on hand.
- Take a deep breath and count to 1000.

The End

