

5/2/01

The Usability and Ergonomics of Chairs in the Center for Computer-Assisted Language Instruction (CCLI)

HU 4628

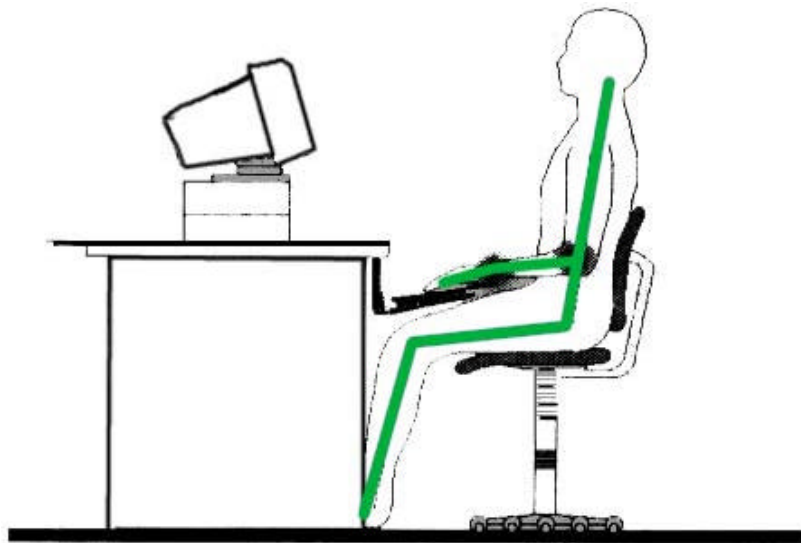
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Ergonomics...

- The applied science of equipment design, as for the workplace, intended to maximize productivity by reducing operator fatigue and discomfort.
(Webster's Collegiate Dictionary)
- Accommodating human limits, constraints, and characteristics
(Ronald Guillemette)
- The systematic application of knowledge about the psychological, physical, and social attributes of human beings in the design and use of all things which affect a person's working conditions: equipment and machinery, the work environment and layout, the job itself, training and the organization of work:
(UC Berkley College of Letters & Sciences)

Ideal Typing Position



- ✓ Sit in an upright and slightly reclining position with the lumbar support resting on the lower back.
- ✓ Feet should rest firmly on the floor.
- ✓ Keyboard should be placed below elbow height and tilted slightly away from you.



Inventory and Features

Adjustable features



PC Chair

Back Support
Back Depth
Back Angle
Seat Height



Mac Chair



Inventory Results

% with Feature Broken

Back support: 7.69%

Back depth: 38.4%

Back angle: 30.7%

Seat height: 0%

Range of Motion

Back support: 2 in.

Back Depth: 3 in.

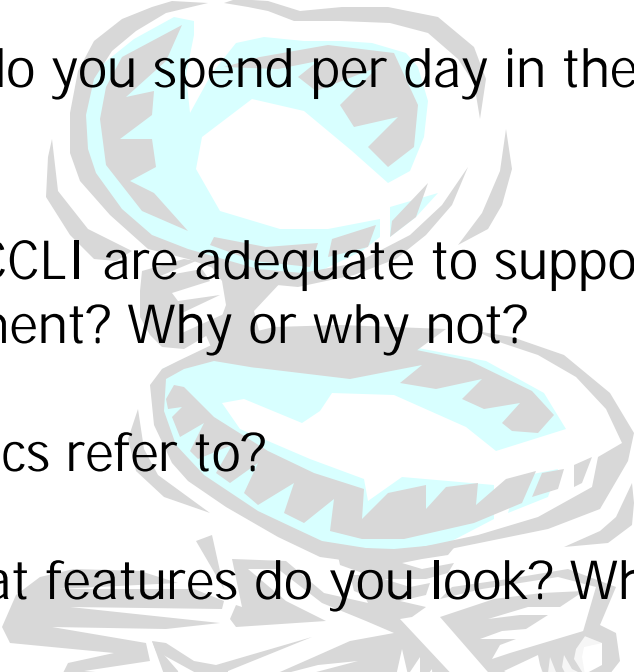
Back Angle (from 90°): 25°



38.5% of the CCLI chairs have
one or more features broken

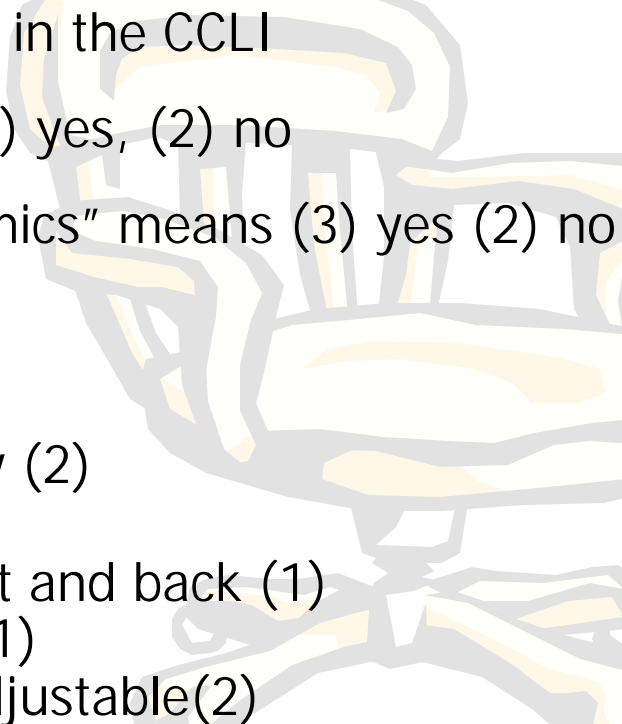


Pre-Test Survey

- 1) Are you an Undergraduate or a Graduate Student?
 - 2) On average, how much time do you spend per day in the CCLI?
 - 3) Do you feel the chairs in the CCLI are adequate to support an effective learning environment? Why or why not?
 - 4) What does the term Ergonomics refer to?
 - 5) Describe your ideal chair. What features do you look for? What features would you avoid?
- 



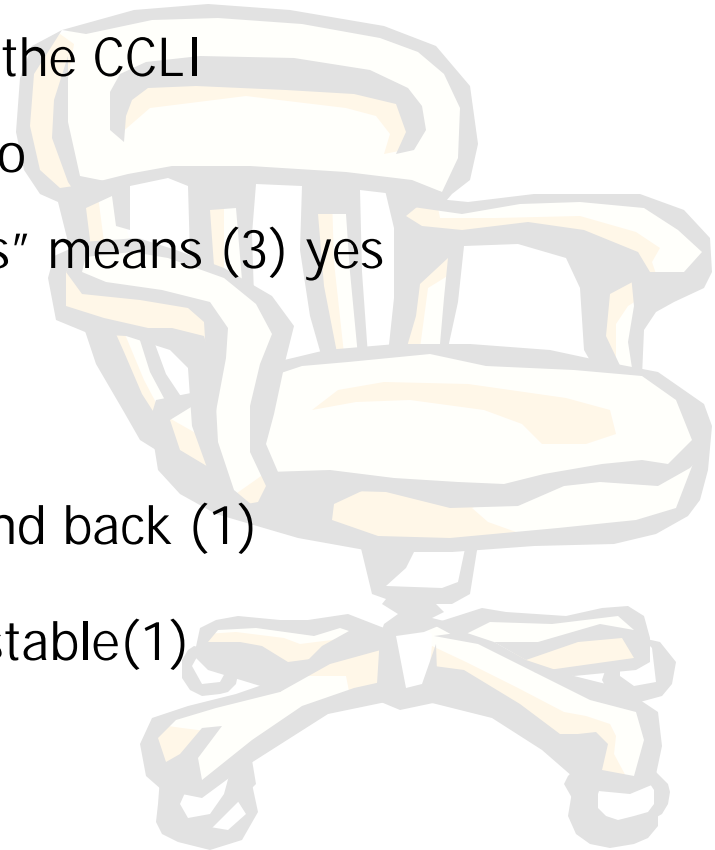
Undergraduate Results

- 2.31 hrs per day on average in the CCLI
 - Are the chairs adequate? (4) yes, (2) no
 - Do you know what “ergonomics” means (3) yes (2) no
 - Describe your ideal chair...
 - Low center of gravity (2)
 - Armrests(4)
 - Generously sized seat and back (1)
 - Lower back support(1)
 - Flexible and easily adjustable(2)
- 



Graduate Results

- 3.16 hrs per day on average in the CCLI
- Are the chairs adequate? (3) no
- Do you know what “ergonomics” means (3) yes
- Describe your ideal chair...
 - Armrests(2)
 - Generously sized seat and back (1)
 - Lower back support(2)
 - Flexible and easily adjustable(1)



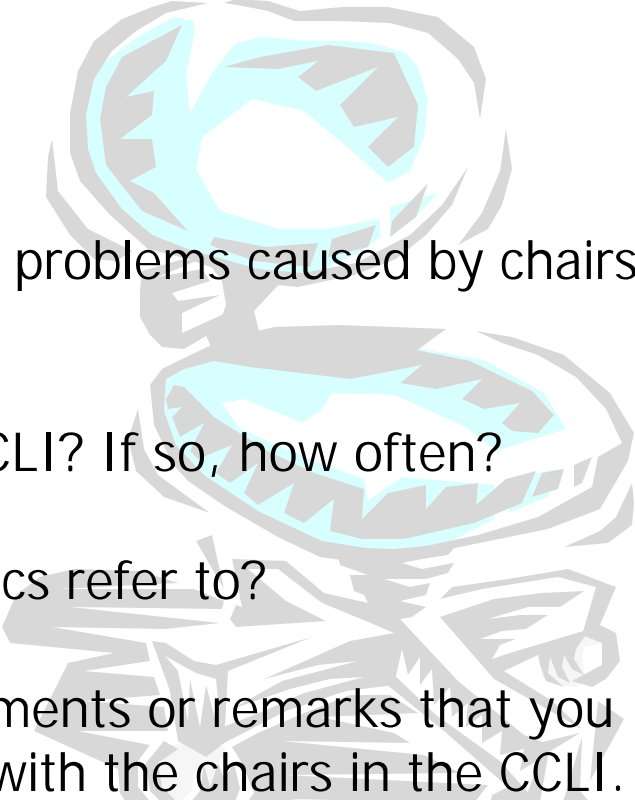
Testing Results

- What was tested
- Conclusions





Post-Test Survey

- 1) Rate the Following on a scale from 1 (low) to 10 (high):
 - Overall Comfort
 - Ease of Use
 - Overall Satisfaction
 - 2) Have you ever had any health problems caused by chairs in the CCLI?
 - 3) Do you switch chairs in the CCLI? If so, how often?
 - 4) What does the term Ergonomics refer to?
 - 5) Please list any additional comments or remarks that you have about your experiences with the chairs in the CCLI.
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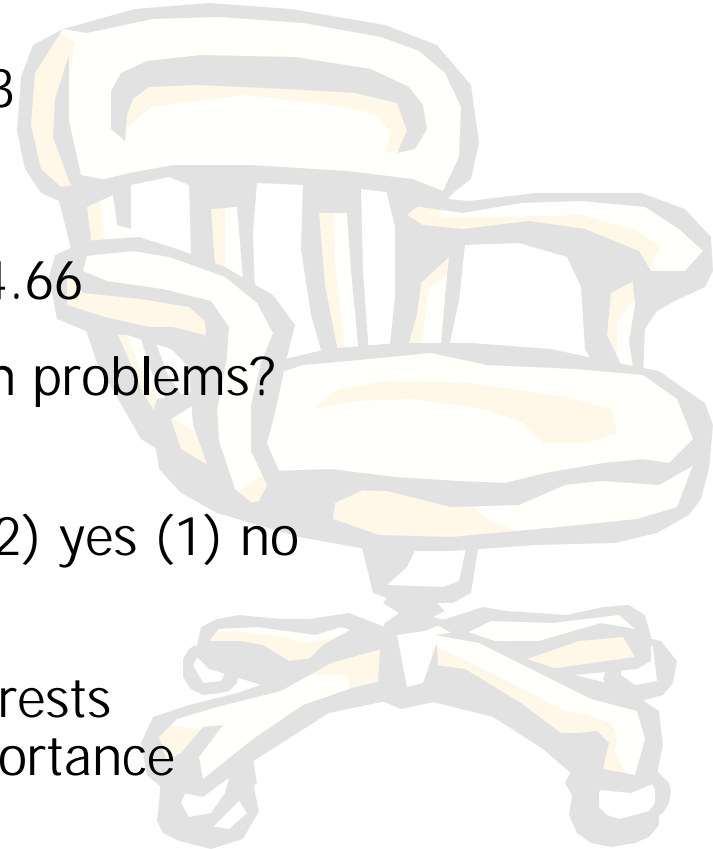
Undergraduate Results

- Overall Comfort (1-10) - 5
- Ease of Use (1-10) - 3.2
- Overall Satisfaction (1-10) - 4
- Have you ever had any health problems? (5) no
- Do you ever switch chairs? (4) yes (1) no
- Overall Consensus:
 - Higher backs and armrests
 - Chairs have moderate importance



Graduate Results

- Overall Comfort (1-10) - 5.33
- Ease of Use (1-10) - 4.3
- Overall Satisfaction (1-10) - 4.66
- Have you ever had any health problems?
(2) no, (1) yes
- Do you ever switch chairs? (2) yes (1) no
- Overall Consensus:
 - Higher backs and armrests
 - Chairs have great importance





Conclusion/Recommendations

- There have been health problems related to the chairs in the CCLI
- Most people would like to see new chairs
- These new chairs should have the following:
 - Armrests
 - Lower/Upper back support
 - Easy Adjustably features (with a larger range)
 - Durability