Text Entry

Text Entry Methods

- Keyboard
- Speech Recognition
- Pointing Device (on-screen KB, gestures)

TrackballEdgeWrite

TrackballEdgeWrite

- Stroke gestures instead of pointing
- crossing rather than pointing

Use strengths of trackball, rather than deal with its shortcomings

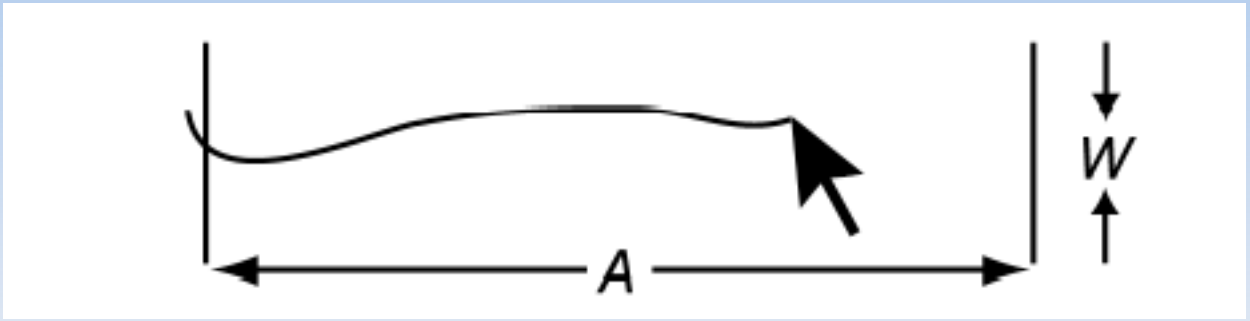
Trackballs

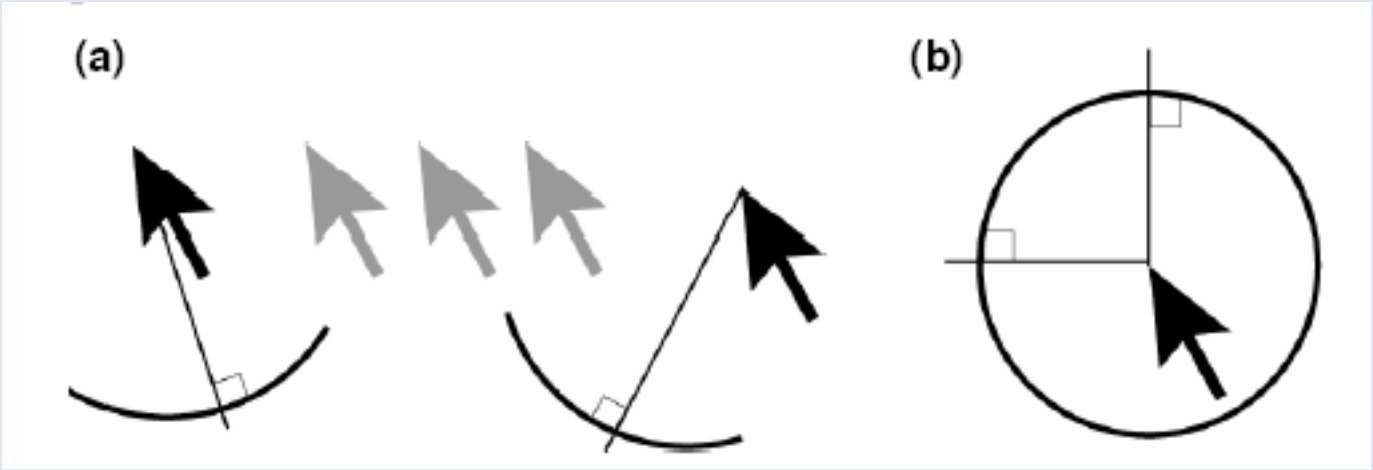
- Epps et al.
  - Pointing devices in target acquisition tasks
  - Mouse AND Trackball significantly better than other devices
- Accot and Zhai
  - Trackballs simmilar to Trackpads.
  - relatively good at short straight-line trajectories
  - not very accurate for long “curved” trajectories

Trackballs

- MacKenzie et al.
  - Trackballs slower than mouse and styli in pointing and dragging
  - Less accurate for dragging
  - Accidental moves while clicking can be frustrating

Goal Crossing

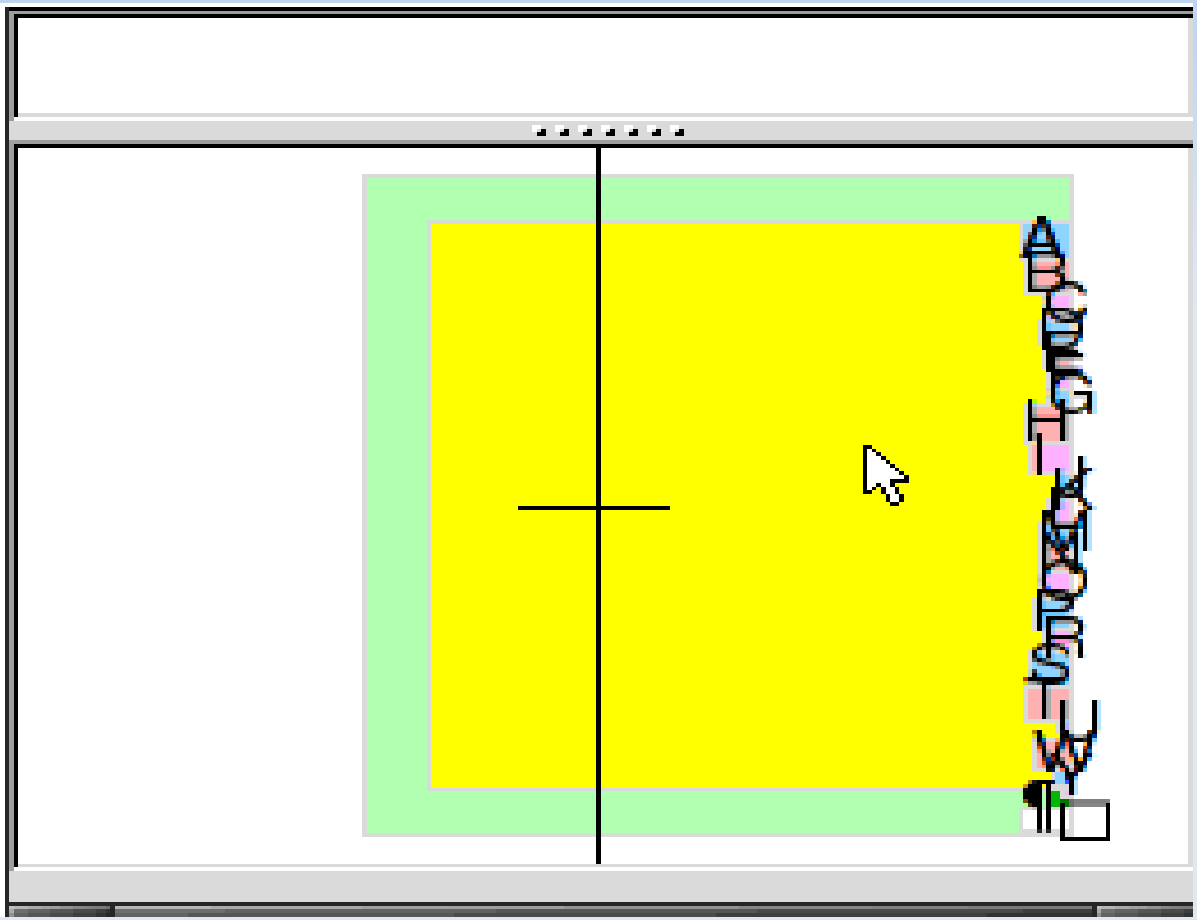




Text Entry with Trackballs

- MDITIM
  - Stroke based
  - Gestures don't resemble roman characters
  - Deficit for learnability and guessability
- Dasher
  - Move pointer into expanding regions representing letters
  - relies on graphical representaion

Dasher



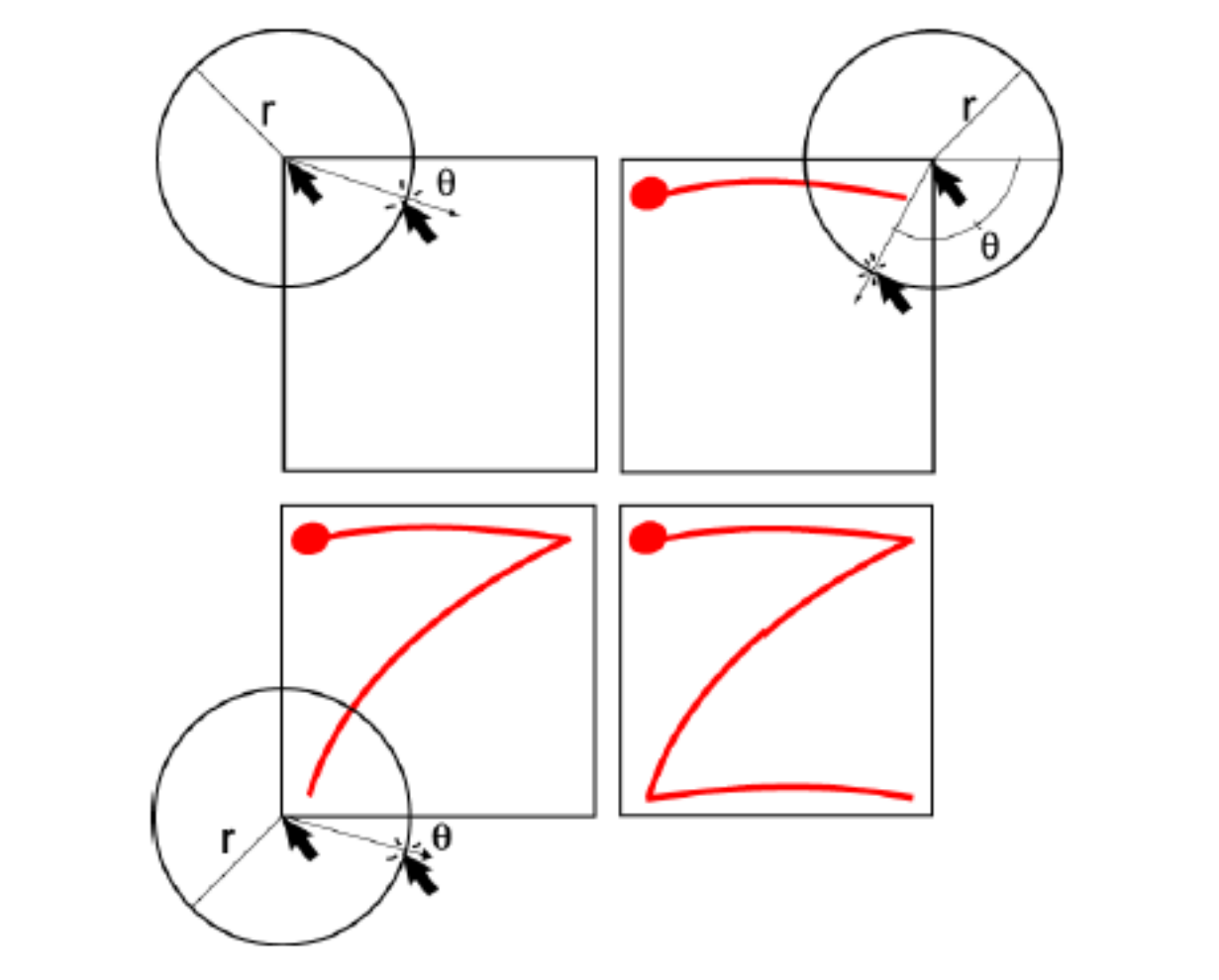
[http://www.inference.phy.cam.ac.uk/dasher/DasherSummary2.html]

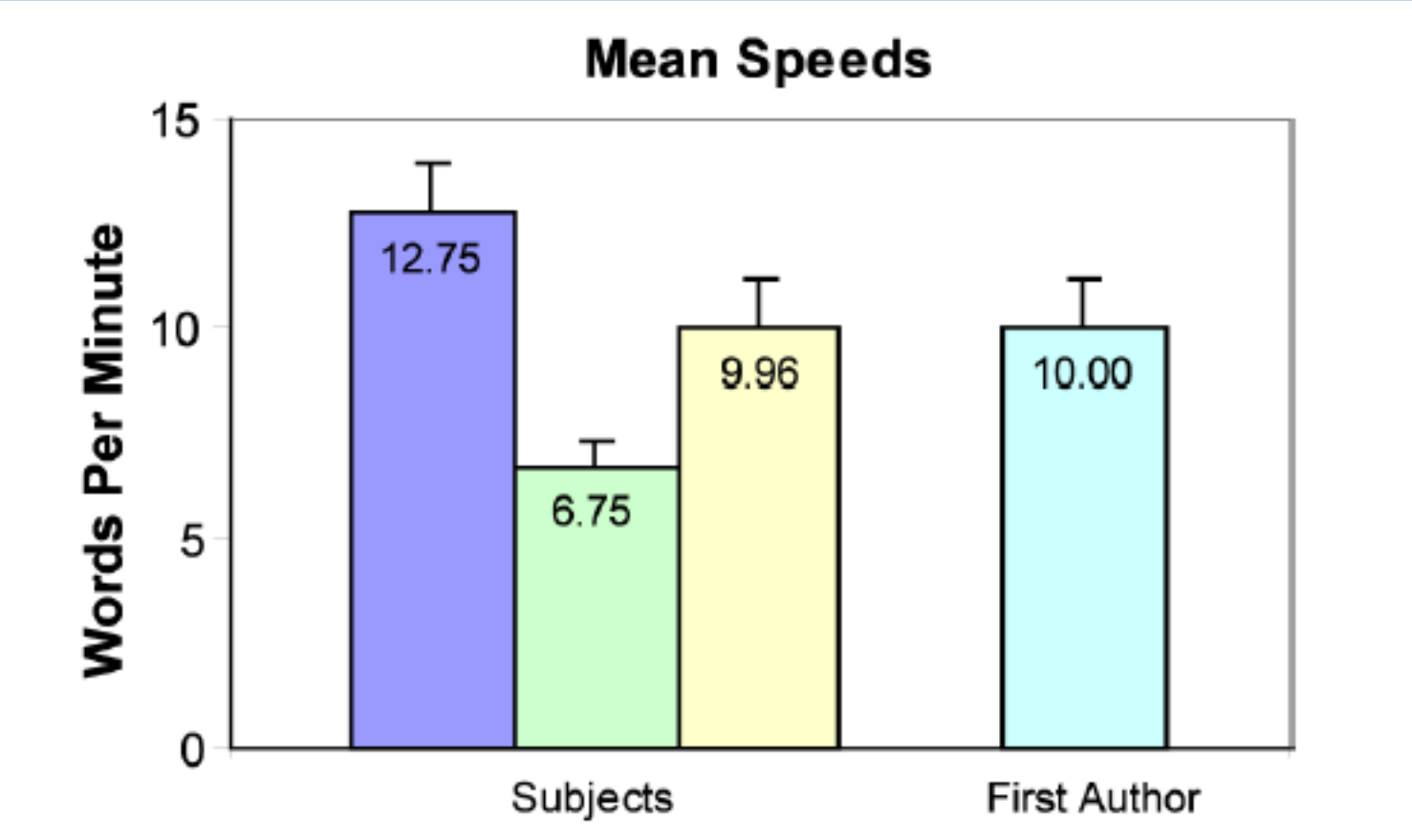
TrackballEdgeWrite

- EdgeWrite designed for mobile devices
- Borders provide stability

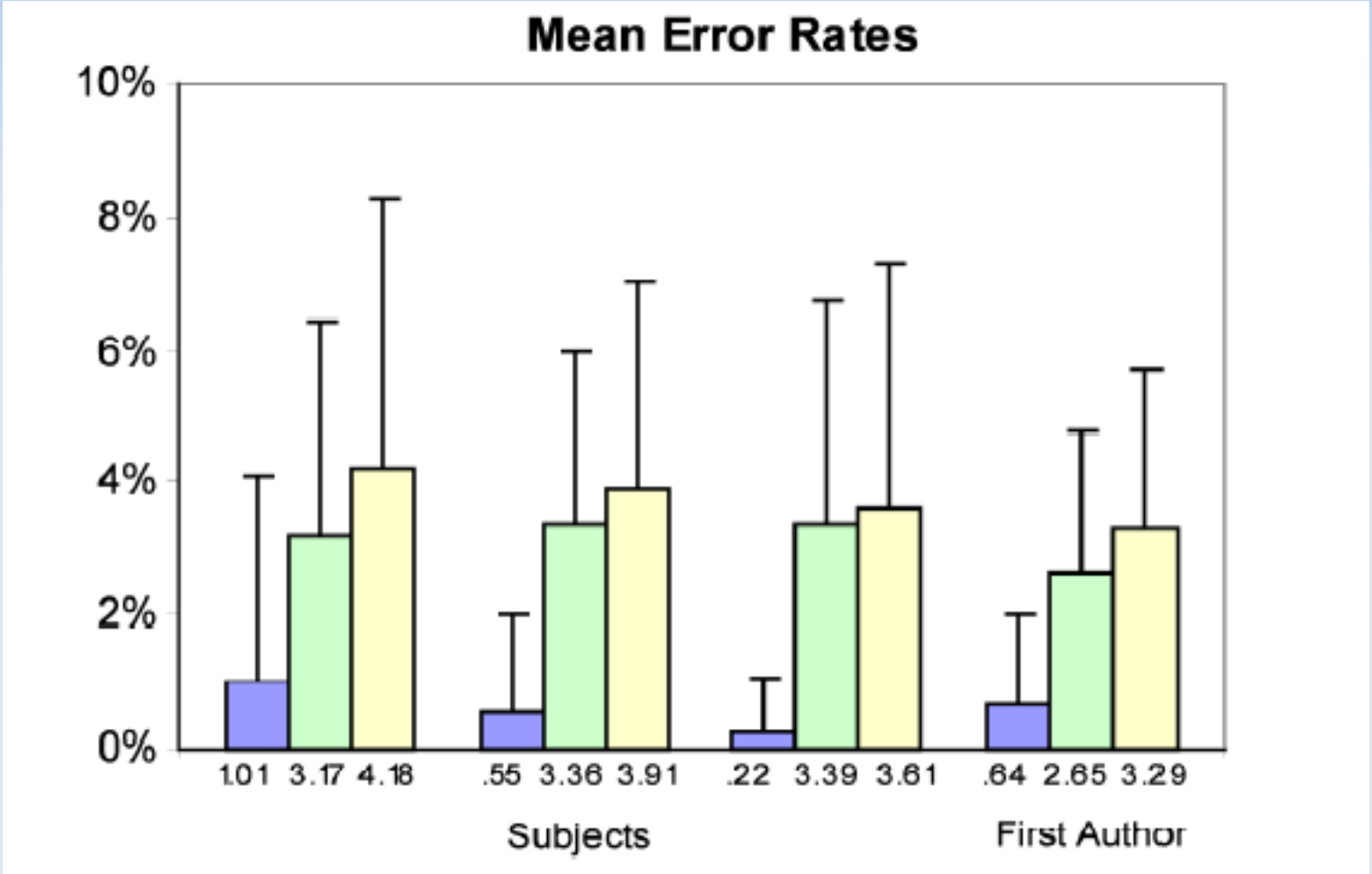
- Can't introduce borders to trackballs
  - facilitate crossing instead

TrackballEdgeWrite




Mean Speeds
Words Per Minute
15
10
5
0
12.75
6.75
9.96
10.00
Subjects
First Author

Empirical Results



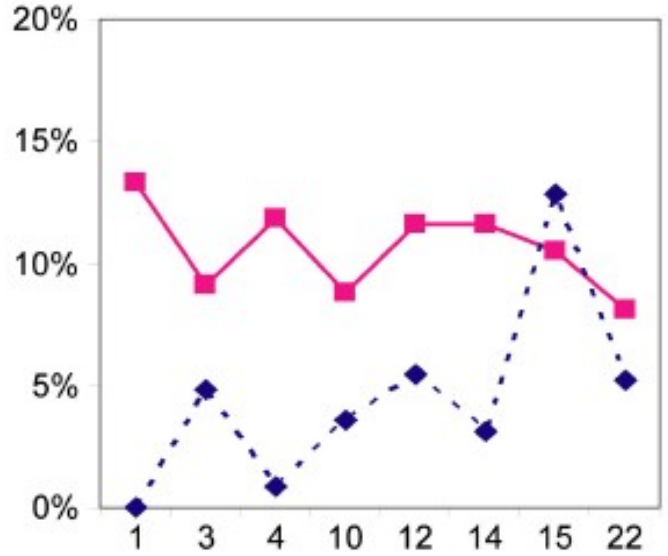
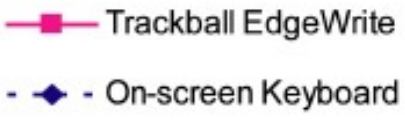


Figure 18.
Jim's Corrected Errors



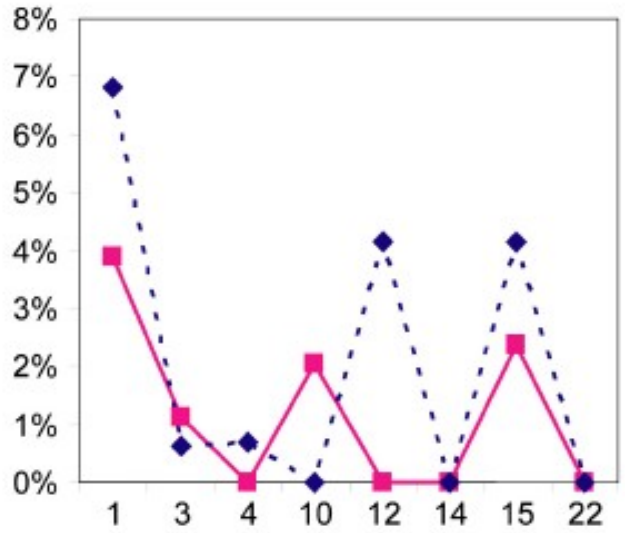
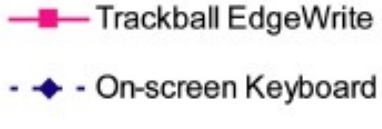


Figure 17.
Jim's Uncorrected Errors



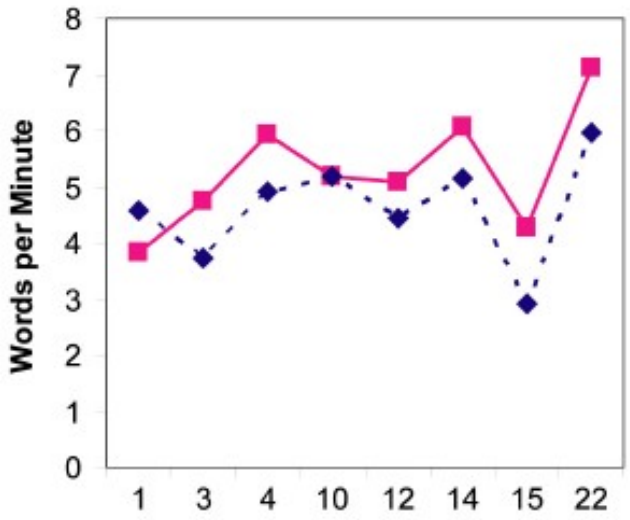


Figure 16.
Jim's Speeds

Trackball EdgeWrite

On-screen Keyboard

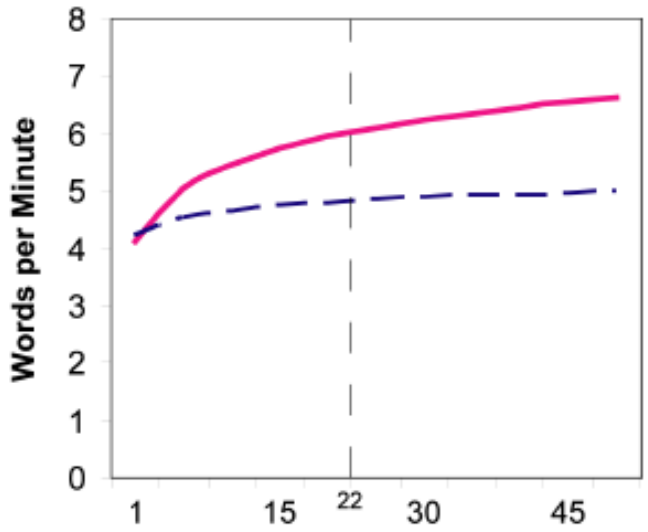


Figure 19.
Jim's Learning Curves

Trackball EdgeWrite

On-screen Keyboard