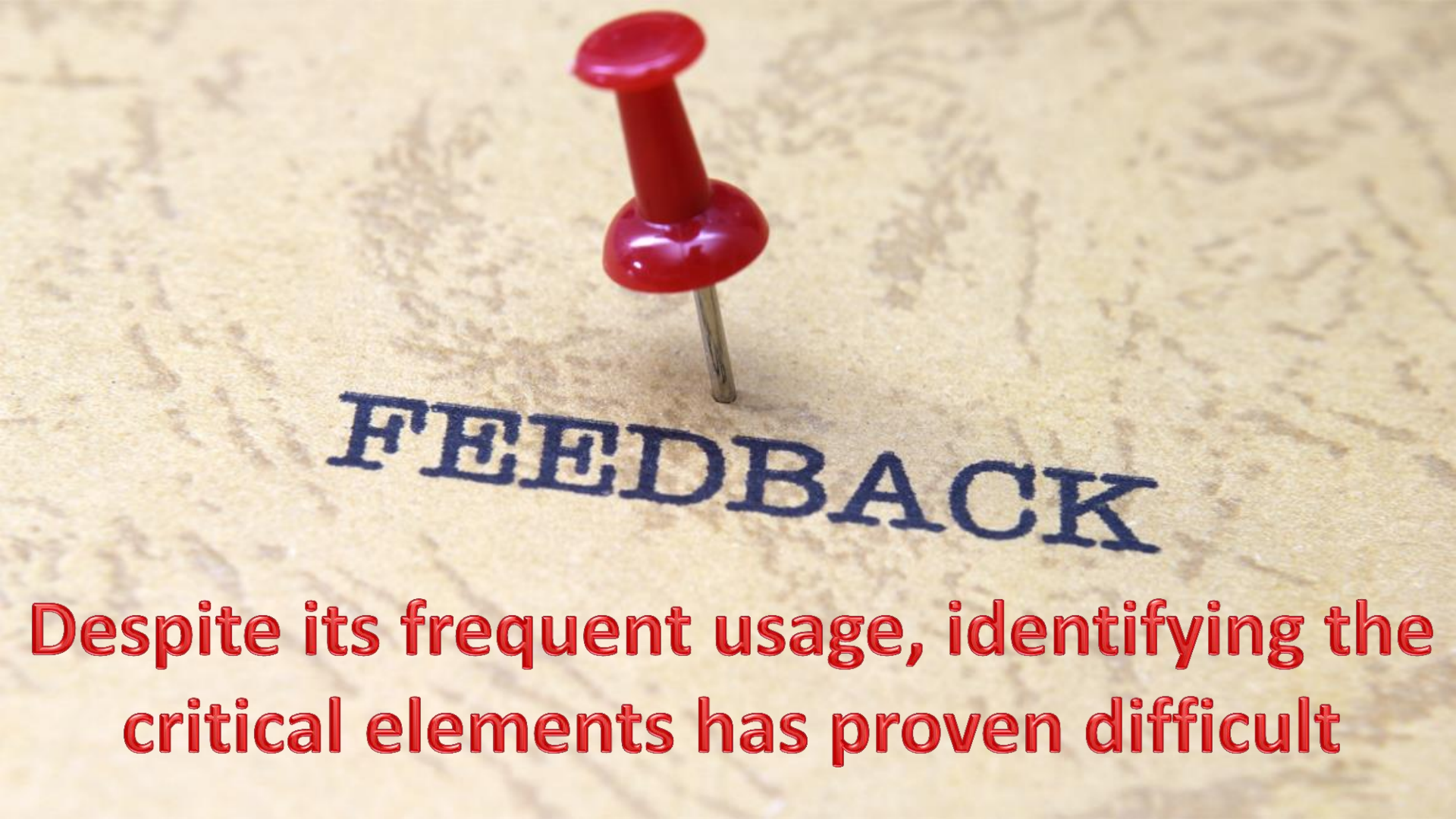
By: Garrett Warrilow
W
How Does Modern Technology Influence Feedback Effects?
TECHNOLOGY



Despite its frequent usage, identifying the critical elements has proven difficult

It is more than how well you are doing
AWESOME!
EXCELLENT
GOOD
AVERAGE
POOR

History: Chapanis (1964)

- Physical counter mounted above their workstation
- Found objective, individualized feedback **did not** improve performance

History: Crowell et al. (1988)

- Anonymous individualized charts of mean scores in a room accessible to employees only
- Found that objective feedback **did** improve performance

History: Johnson, Dickinson, & Huitema (2008)

- Feedback was delivered via computer display
- Found objective individualized feedback **did not** effect performance

History:

Johnson (2013)

- Feedback was personally delivered by the researcher during face-to-face conversations
- Found that objective, individualized feedback **did** improve performance

Effects of Objective Feedback

Study	Effective Vs. No FB?
Chapanis (1964)	No
Crowell et. al (1988)	Yes
Johnson, Dickinson, Huitema (2008)	No
Johnson (2013)	Yes

Variability in the forms by which feedback was delivered

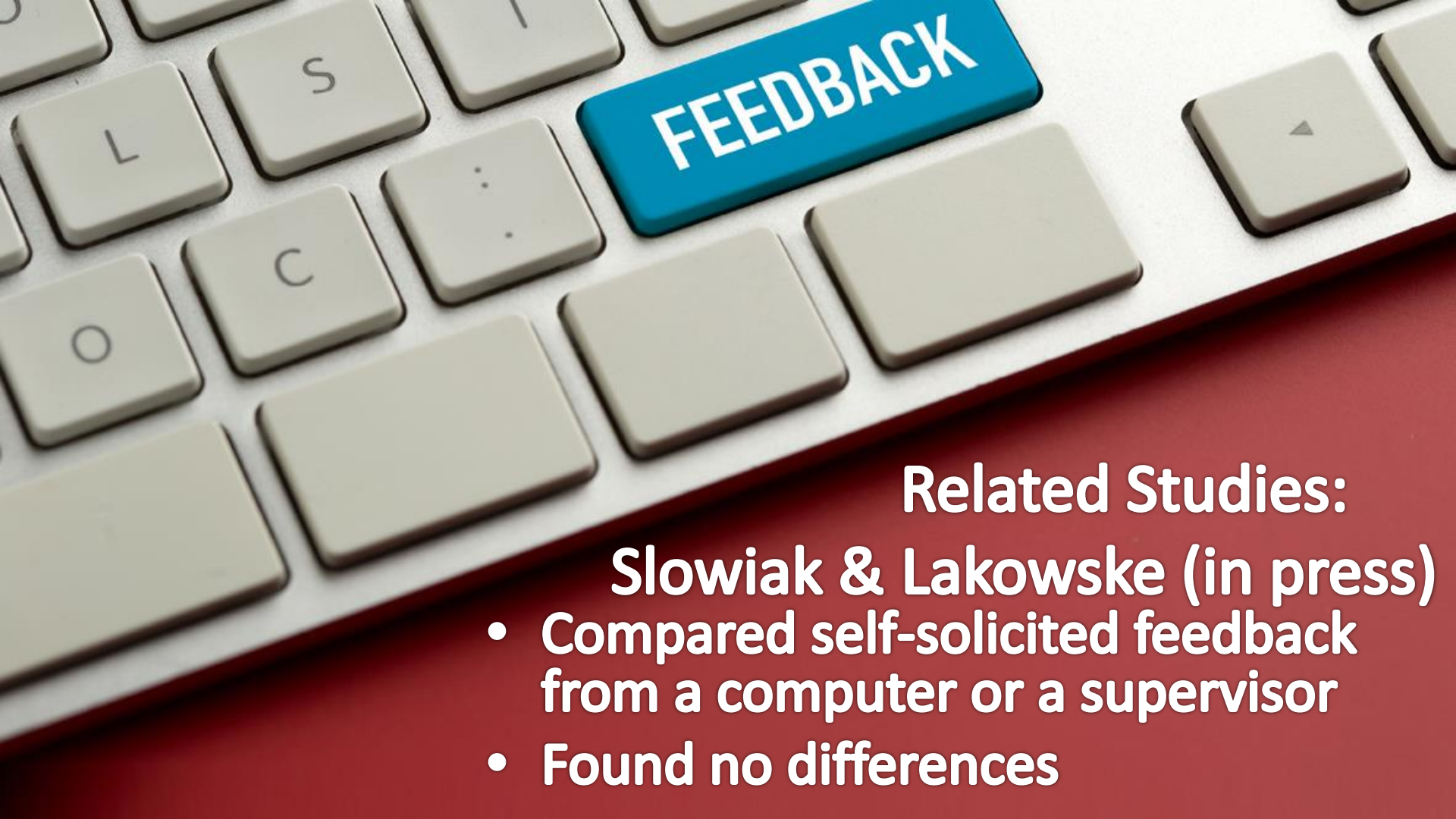
Effects of Objective Feedback

Study	Effective Vs. No FB?
Chapanis (1964)	**No**
Crowell (1988)	**Yes**
Johnson, Dickinson, Huitema (2008)	**No**
Johnson (2013)	**Yes**

Modality
Counter
Posted Charts
Computer
Face to Face

Related Studies: Earley (1988)

- Employees processing magazine subscriptions
- Performance was higher when from the computer rather than from a supervisor.



Related Studies:

Slowiak & Lakowske (in press)

- Compared self-solicited feedback from a computer or a supervisor
- Found no differences

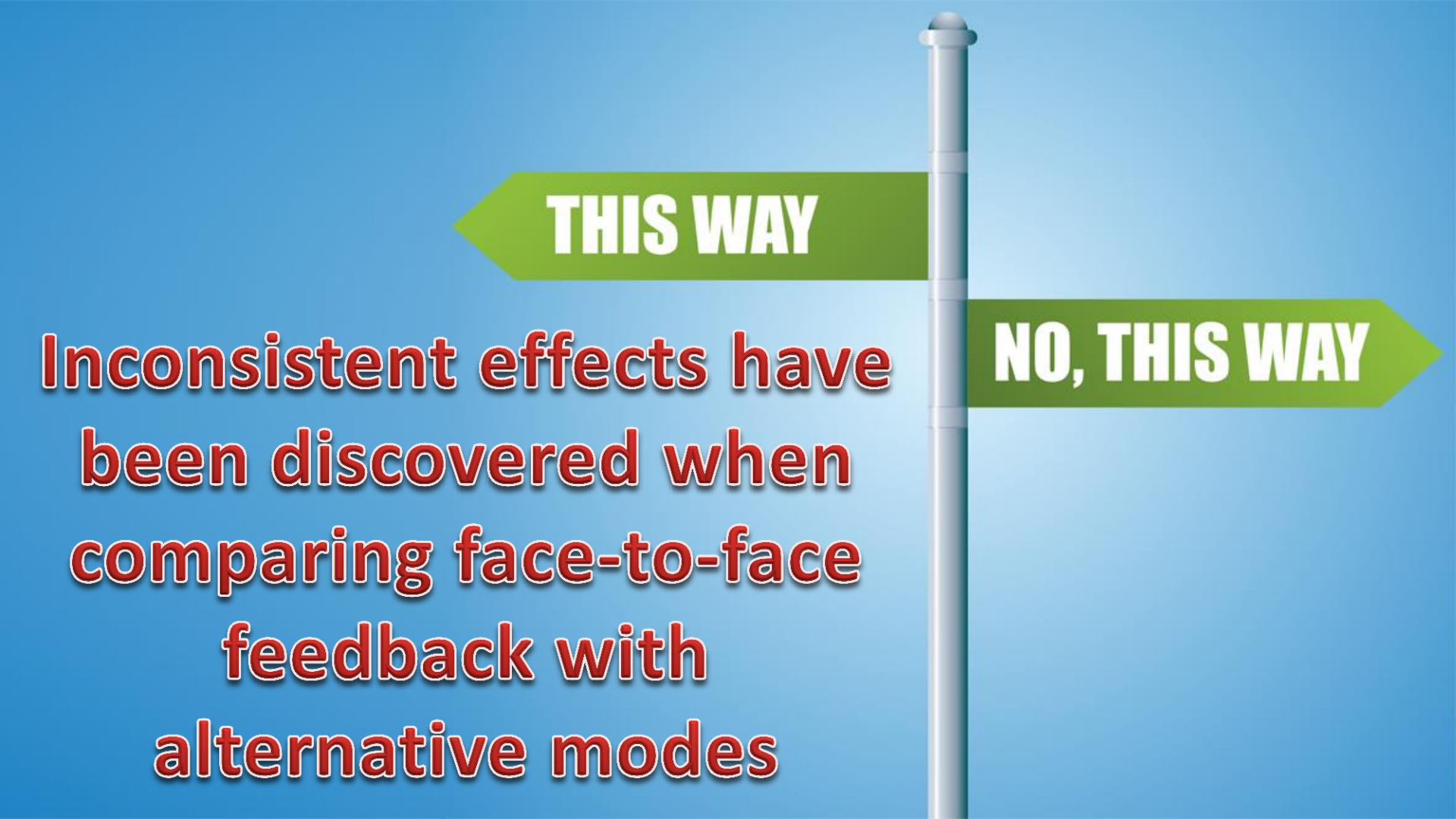
Related Studies: Kaufman, Codding, & Markus (2013)

- Training teachers to implement a new behavior intervention
- Verbal (face-to-face) feedback had a more immediate change in performance as compared to written feedback.

Related Studies:

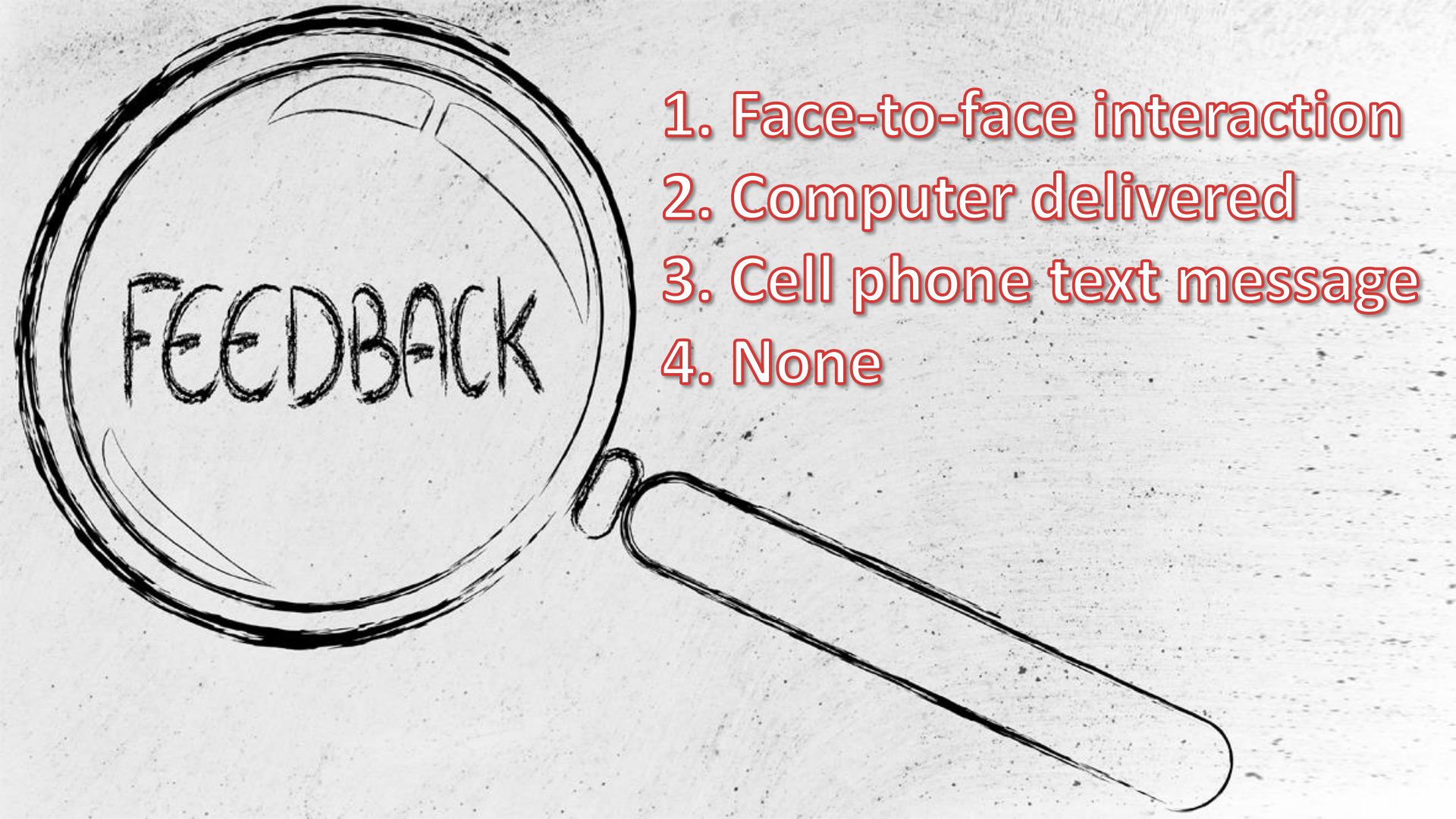
Chae, Moon, Lee, & Oah (2015)

- Feedback delivered via email or face-to-face on the assembly of mobile phones
- Face-to-face was consistently more effective


THIS WAY
NO, THIS WAY
Inconsistent effects have been discovered when comparing face-to-face feedback with alternative modes

Purpose of Recent Research

METHODS



1. Face-to-face interaction
2. Computer delivered
3. Cell phone text message
4. None

Check-proofing task,

similar to the job of a proof operator at a bank and used in many other studies

(Johnson, 2013; Johnson, Dickinson, & Huitema, 2008; McGee, Dickinson, Huitema, & Culig, 2006; Slowiak, Dickinson, & Huitema, 2011)

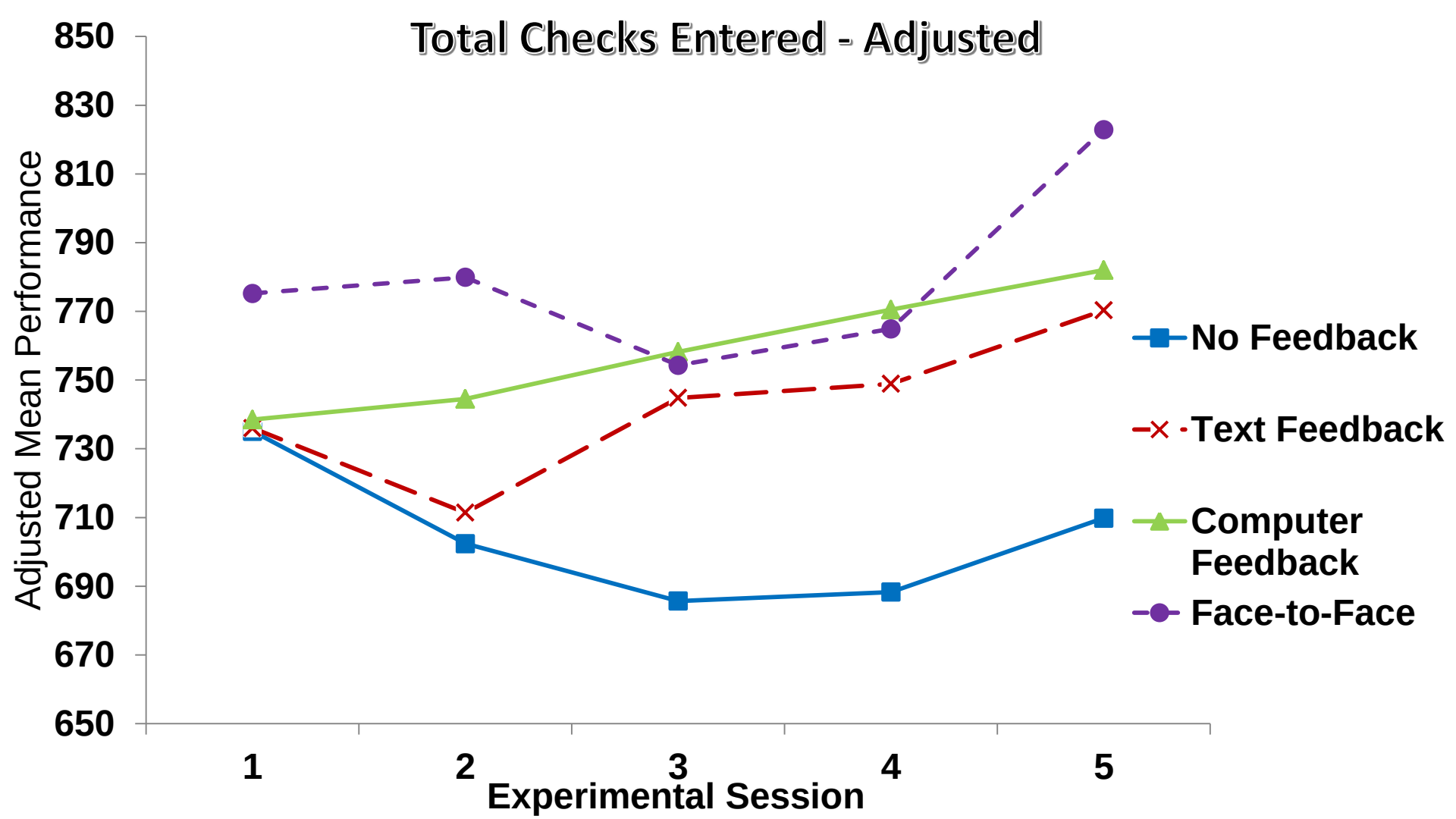
Face-to-face interaction:
“You entered ____ total checks during today's session with ___ total checks entered correctly.”

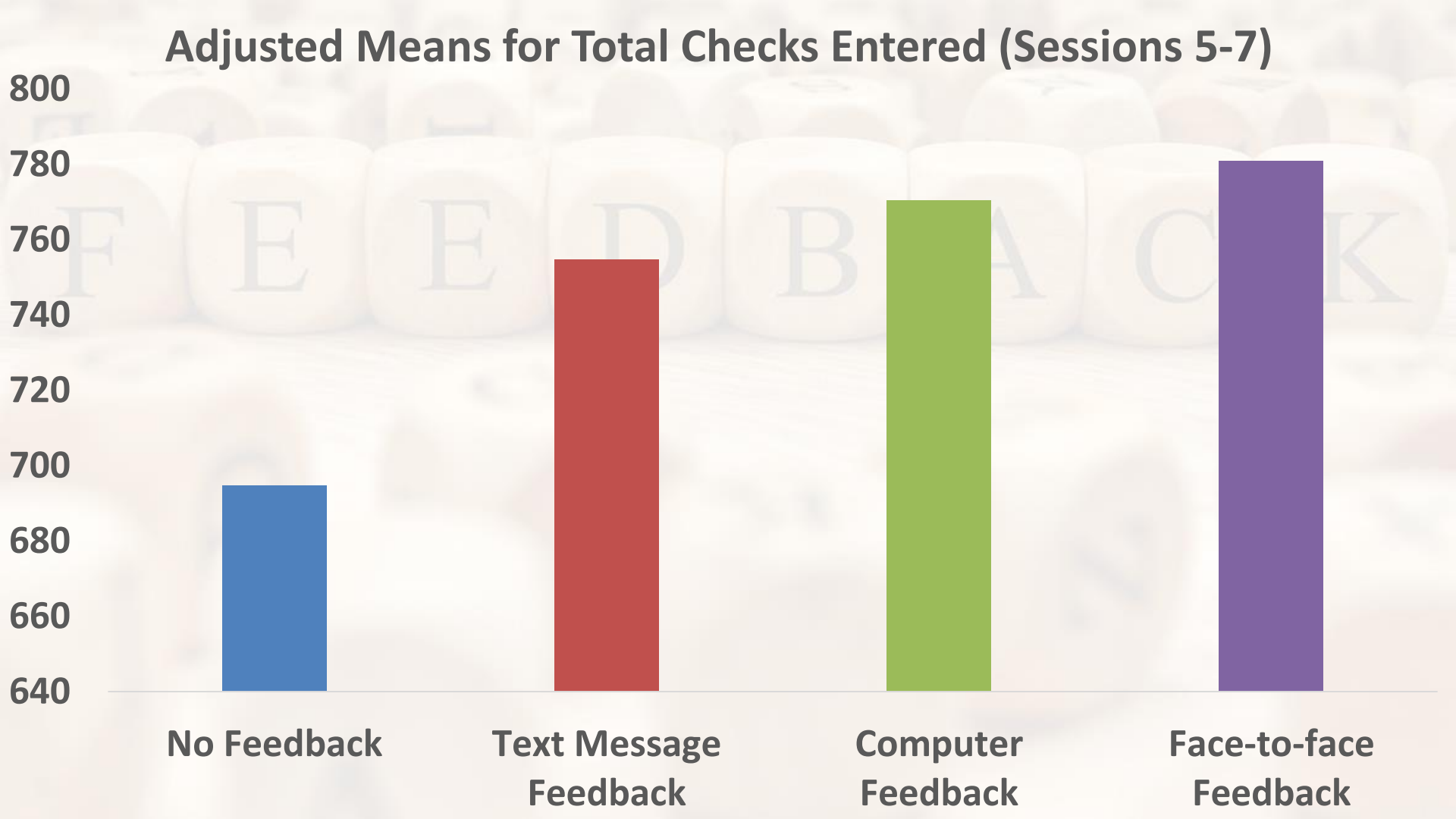
Text message:

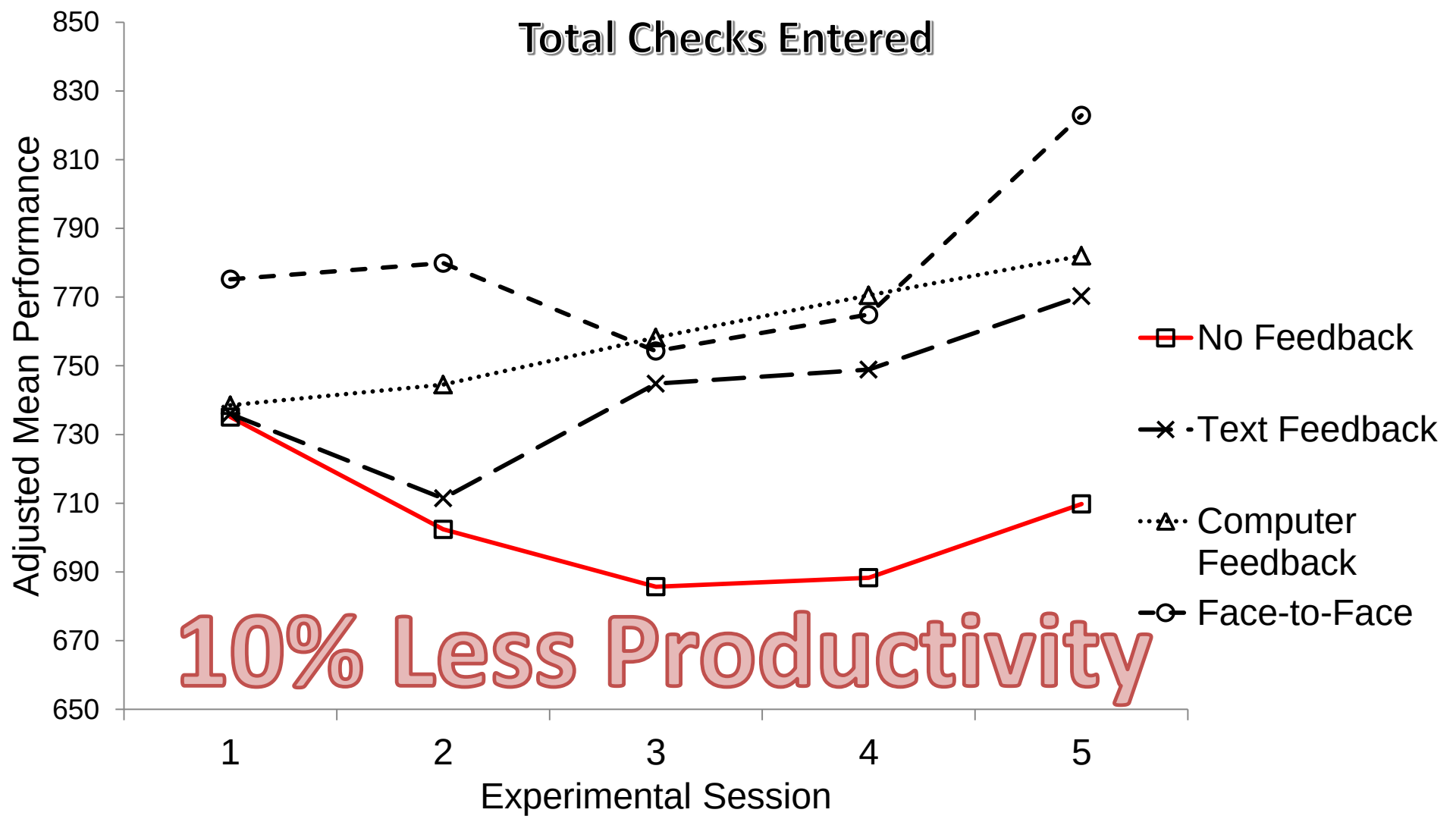
Same statement
was delivered
2-5 minutes after
the subject has left

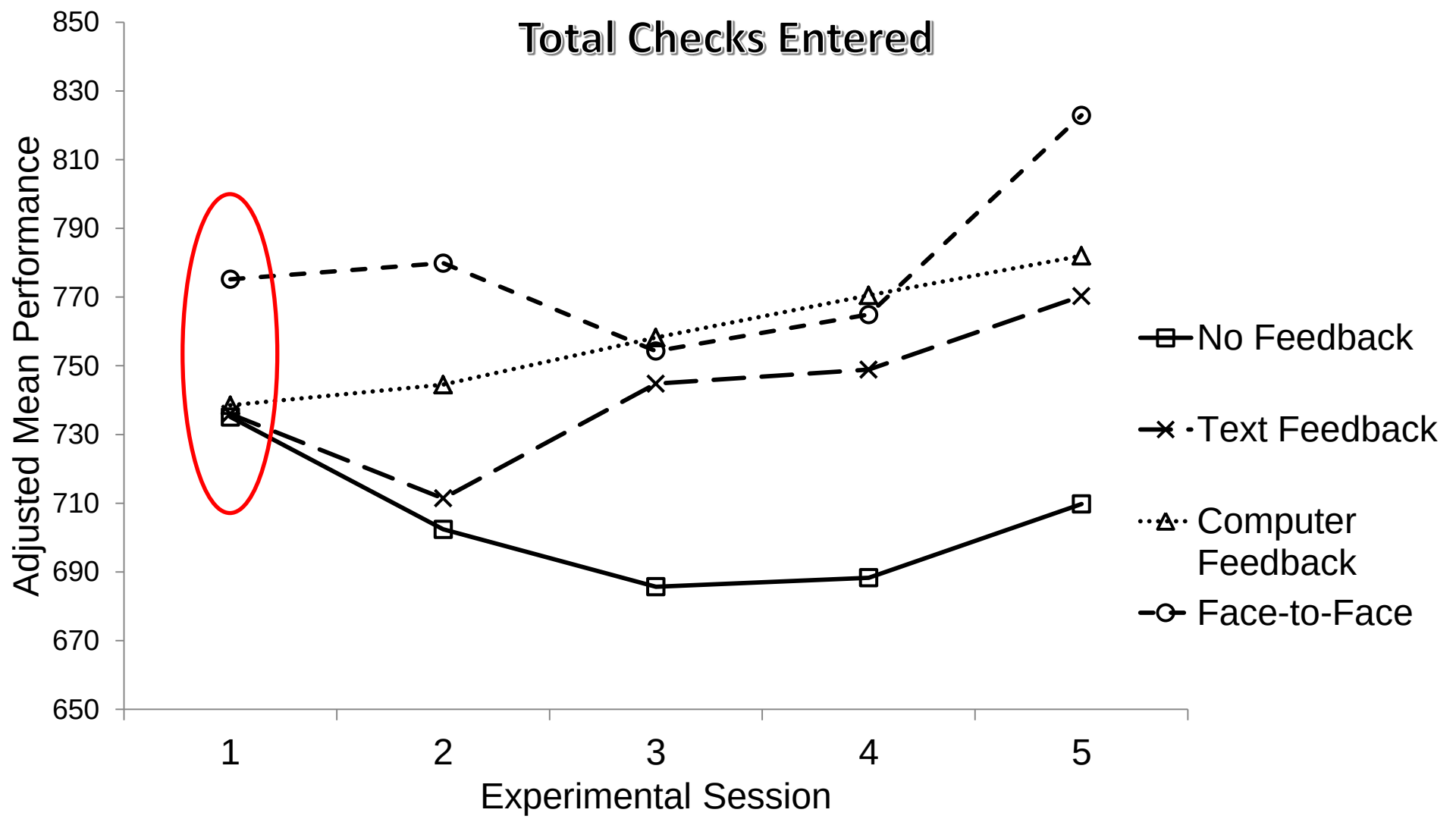
Computer delivered:
“Number of checks completed: ___.”
“Number of checks completed correctly: ____”
“Check completion rate: ____”

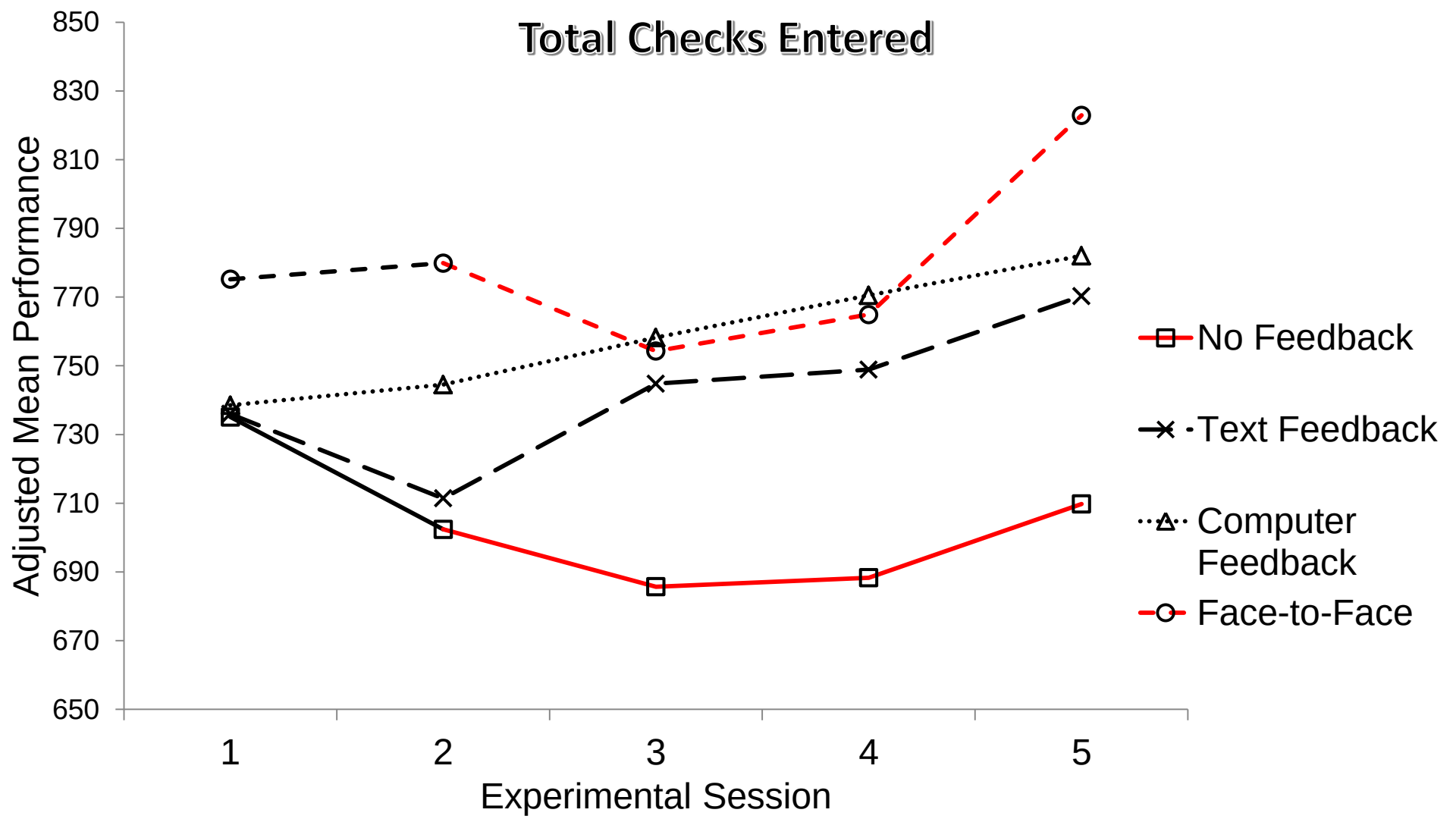
RESULTS

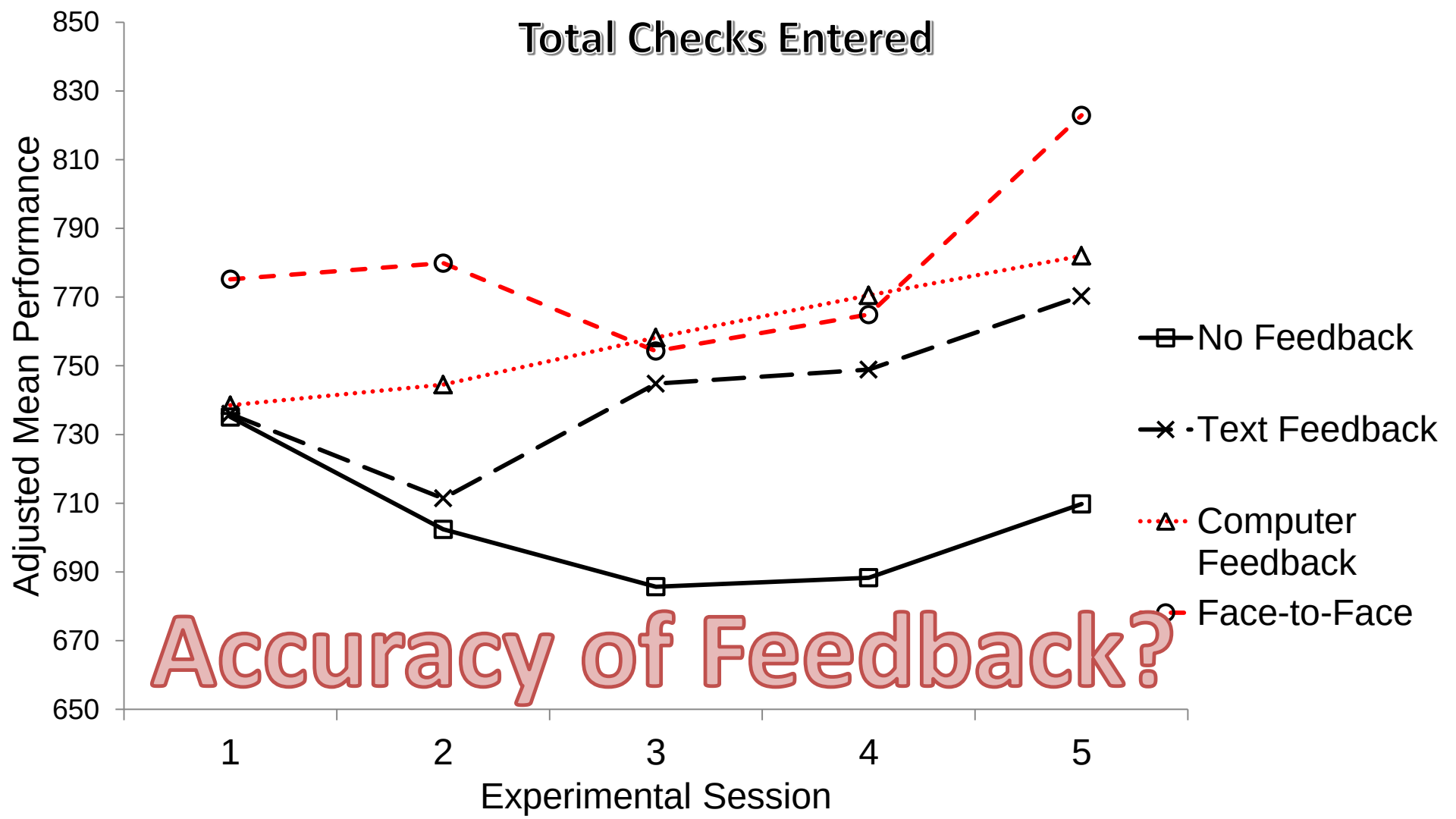

Total Checks Entered - Adjusted
Adjusted Mean Performance
850
830
810
790
770
750
730
710
690
670
650
1
2
3
4
5
Experimental Session
No Feedback
Text Feedback
Computer Feedback
Face-to-Face


Adjusted Means for Total Checks Entered (Sessions 5-7)
800
780
760
740
720
700
680
660
640
No Feedback
Text Message Feedback
Computer Feedback
Face-to-face Feedback


Total Checks Entered
Adjusted Mean Performance
850
830
810
790
770
750
730
710
690
670
650
1
2
3
4
5
Experimental Session
No Feedback
Text Feedback
Computer Feedback
Face-to-Face
10% Less Productivity


Total Checks Entered
Adjusted Mean Performance
850
830
810
790
770
750
730
710
690
670
650
1
2
3
4
5
Experimental Session
No Feedback
Text Feedback
Computer Feedback
Face-to-Face


Total Checks Entered
Adjusted Mean Performance
850
830
810
790
770
750
730
710
690
670
650
1
2
3
4
5
Experimental Session
No Feedback
Text Feedback
Computer Feedback
Face-to-Face


Total Checks Entered
Adjusted Mean Performance
850
830
810
790
770
750
730
710
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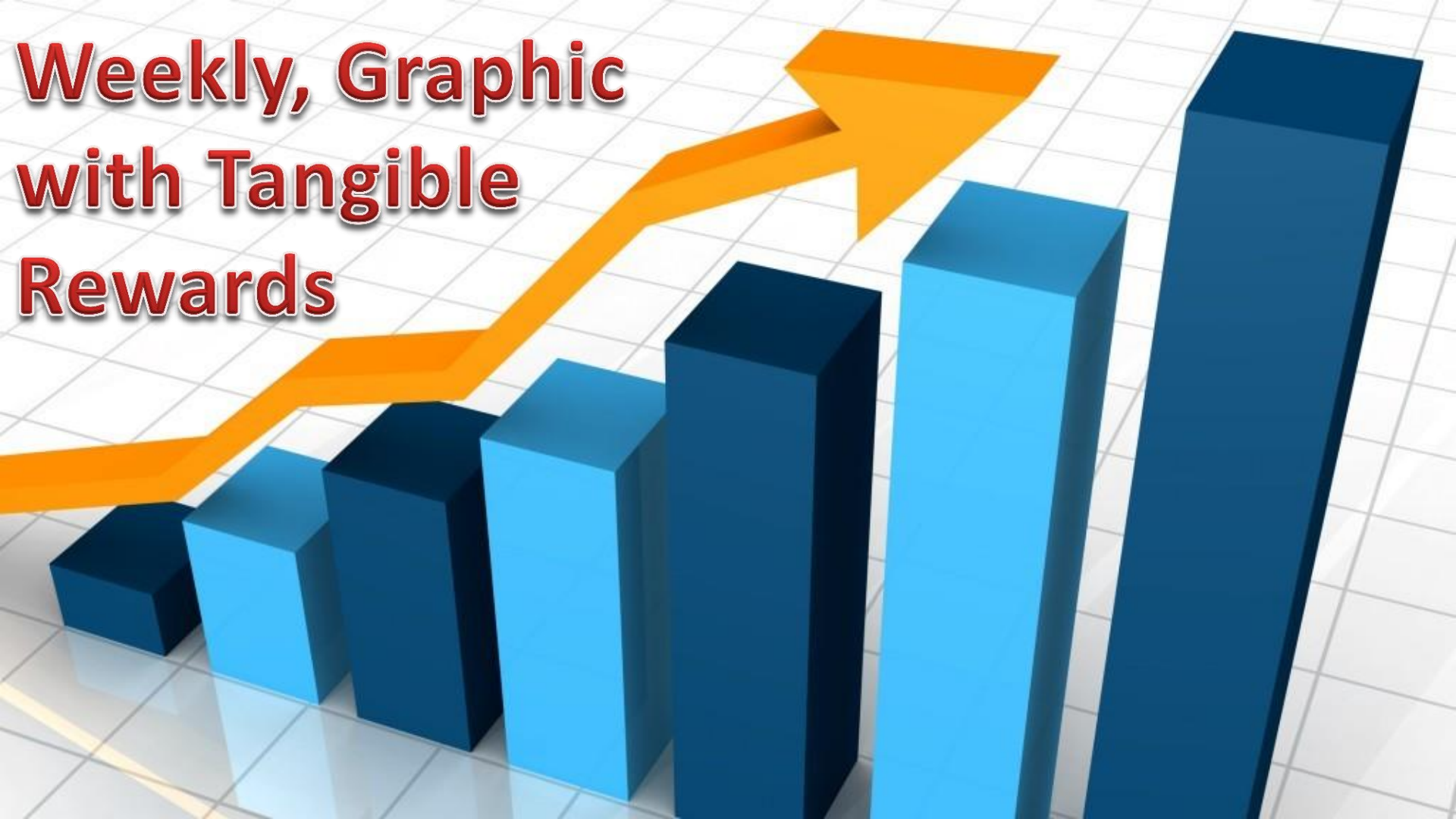
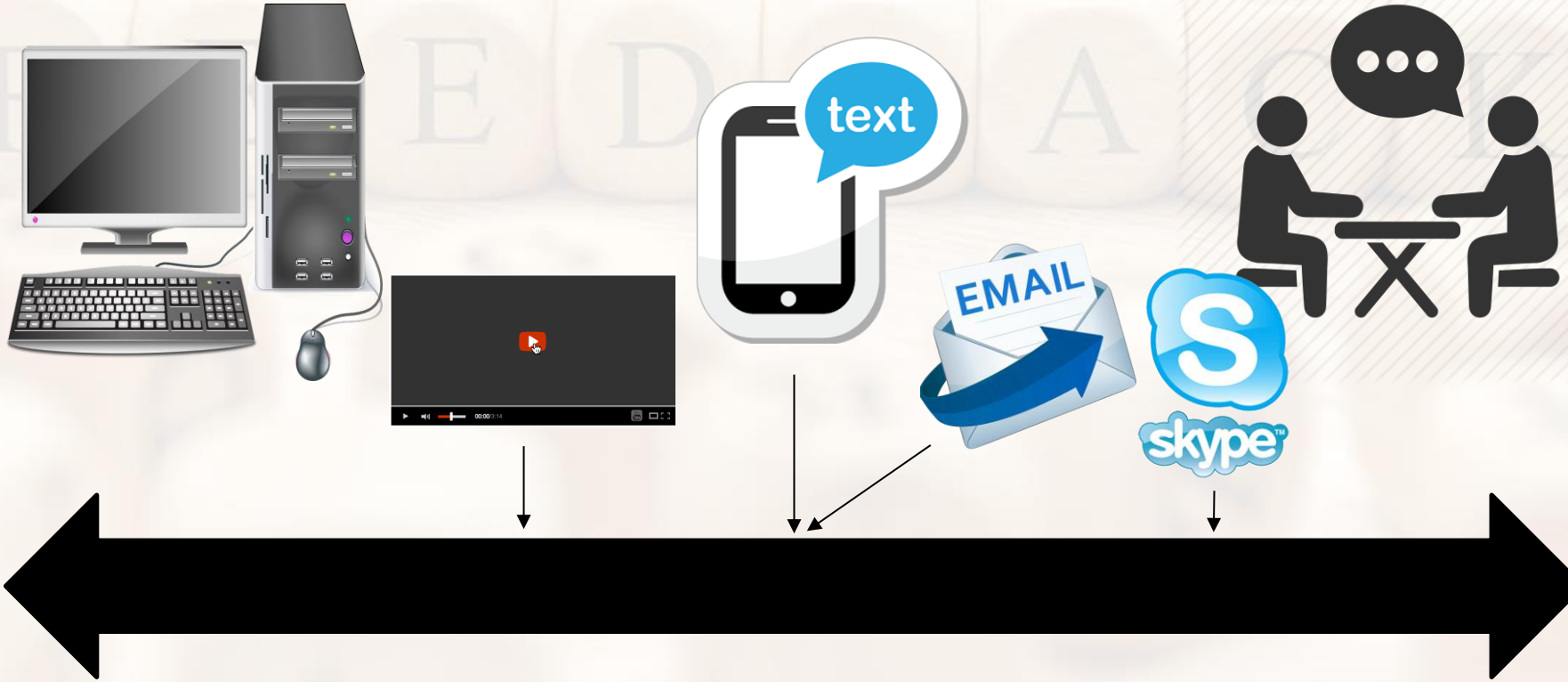
650
1
2
3
4
5
Experimental Session
No Feedback
Text Feedback
Computer Feedback
Face-to-Face
Accuracy of Feedback?

FEEDBACK
So what?!


Weekly, Graphic
with Tangible
Rewards

Future Directions



Future Directions

GOAL
ACHIEVED

the robots
are coming!

THANK YOU

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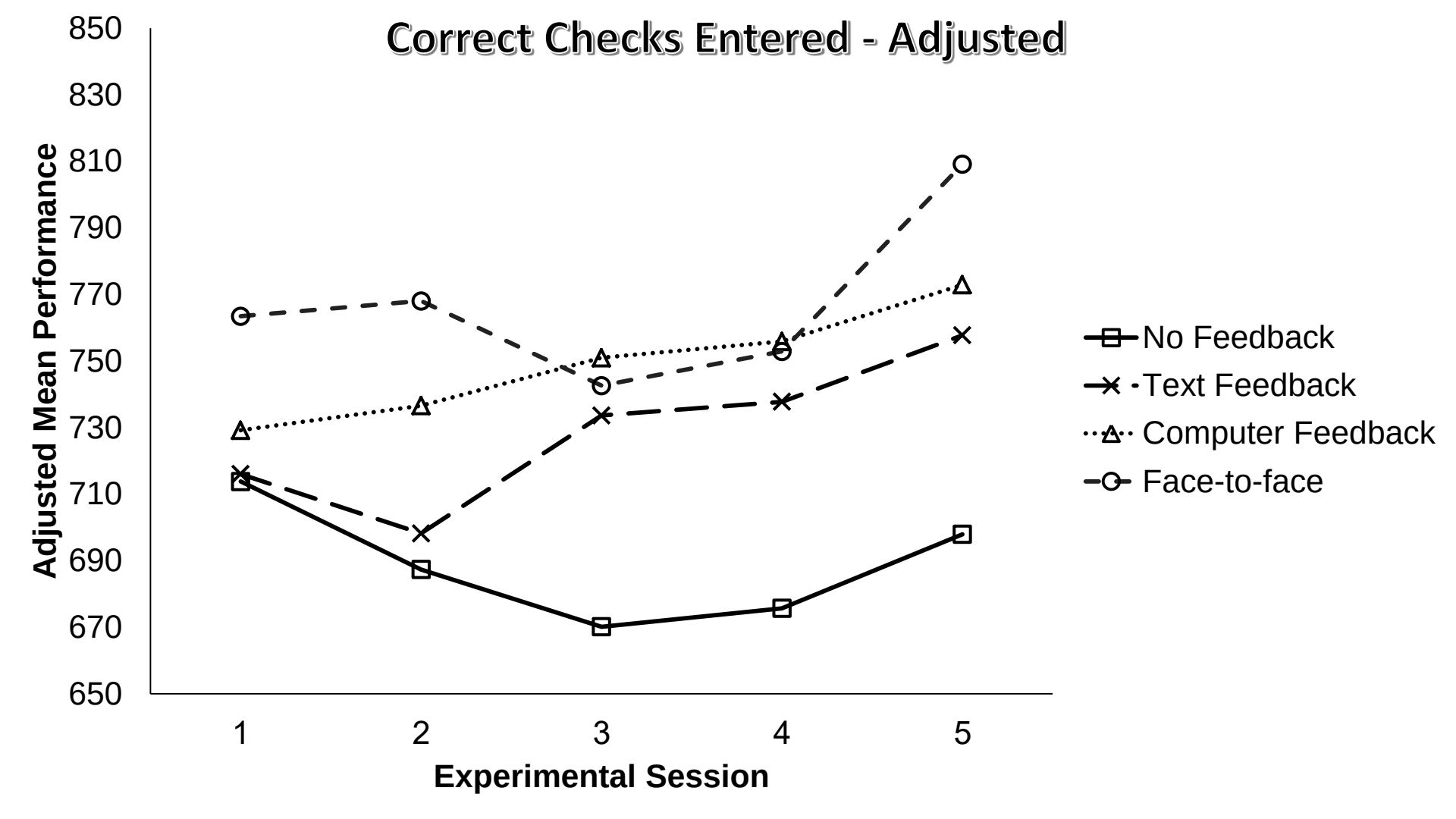
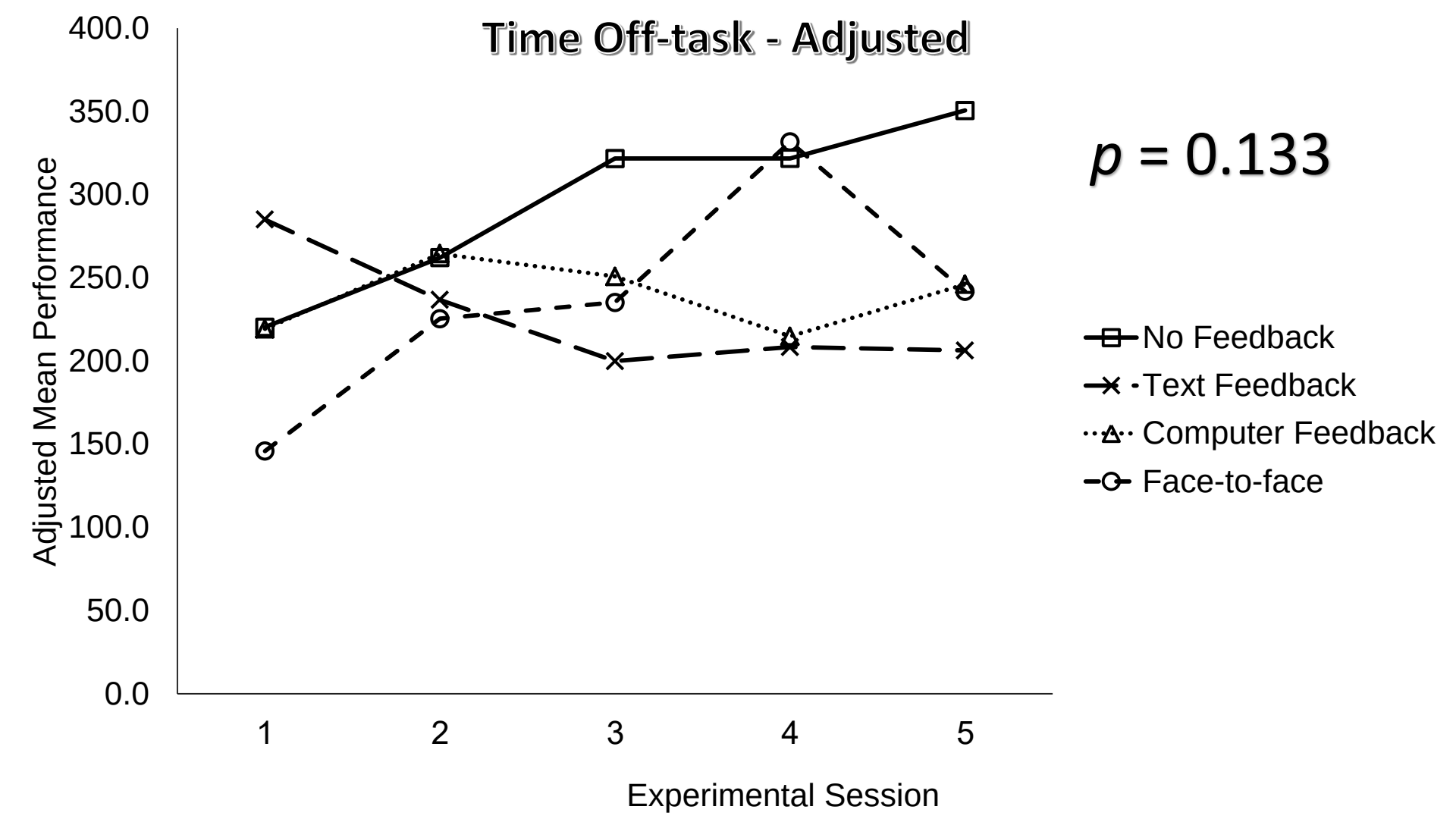
WESTERN MICHIGAN UNIVERSITY


Correct Checks Entered - Adjusted
Adjusted Mean Performance
850
830
810
790
770
750
730
710
690
670
650
1
2
3
4
5
Experimental Session
No Feedback
Text Feedback
Computer Feedback
Face-to-face


Time Off-task - Adjusted
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
Adjusted Mean Performance
1
2
3
4
5
Experimental Session
p = 0.133
No Feedback
Text Feedback
Computer Feedback
Face-to-face