

**Evaluating the effect of displaying team vs. individual metrics data on team
performance.**

by

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A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Human-Computer Interaction

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The student author, whose presentation of the scholarship herein was approved by the program of study committee, is solely responsible for the content of this dissertation/thesis. The Graduate College will ensure this dissertation/thesis is globally accessible and will not permit alterations after a degree is conferred.

Iowa State University

Ames, Iowa

2019

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DEDICATION

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ACKNOWLEDGMENTS

UPdate! ==== I would like to take this opportunity to express my thanks to those who helped me with various aspects of conducting research and the writing of this thesis. First and foremost, Dr. Susan D. Ross for her guidance, patience and support throughout this research and the writing of this thesis. Her insights and words of encouragement have often inspired me and renewed my hopes for completing my graduate education. I would also like to thank my committee members for their efforts and contributions to this work: Dr. August Tanner and Dr. Lewis Hargrave. I would additionally like to thank Dr. Tanner for his guidance throughout the initial stages of my graduate career and Dr. Hargrave for his inspirational teaching style.

ABSTRACT

Teams have the potential to display high performance or low performance, depending on how well team members interact with one another. Training is commonly used to maintain or enhance the performance of various team types (e.g., sport or work teams). Intelligent Tutoring Systems (ITSs) have been used for years in multiple domains to tutor individuals. However, challenges arise when attempting to develop an Intelligent Team Tutoring System (ITTS). This current work will focus on the challenge of delivering effective automated feedback to teams via an ITTS designed to improve team performance. The specific goal of this research is to examine how feedback displaying individual and team performance metrics influences team performance across multiple factors. The participants in this study performed a modified version of a classic shopping mall task known as the Multiple Errands Test (MET). The researcher created a three-person team version of the MET called the Team Multiple Errands Test (TMET) within a virtual world on desktop computers. In certain conditions, teams received performance feedback with information about individual performance, team performance, or both. Dependent variables included: performance (individual and team score), items collected (correct and incorrect), errors, time remaining, communication, and task strategy. I divided the results into team and individual level analysis. The preliminary team level analysis suggested that Team level feedback improved both time remaining for the team and time remaining for individuals, but that feedback condition did not affect other dependent measures. The final dissertation will explore how feedback influences team behavior, such as strategy and communication, as well as team orientation.

CHAPTER 1. Introduction

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1.1 Intelligent Tutoring Systems (ITSs)

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1.2 Feedback Considerations When Developing an ITTS

Add content

1.3 Research Question

Add content

1.4 Organization of This Dissertation

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1.5 Contributions of This Research

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CHAPTER 2. LITERATURE REVIEW

This is the opening paragraph to my thesis which explains in general terms the concepts and hypothesis which will be used in my thesis.

With more general information given here than really necessary.

2.1 Introduction

Here initial concepts and conditions are explained and several hypothesis are mentioned in brief.

Allen, B. S. (1984), Bruner, J. (1960) and Cox, S. R. (1974) did the initial work in this area. But in Struss' work [?] the definitive model is seen.

2.1.1 Hypothesis

Here one particular hypothesis is explained in depth and is examined in the light of current literature.

2.1.1.1 Parts of the hypothesis

Here one particular part of the hypothesis that is currently being explained is examined and particular elements of that part are given careful scrutiny.

2.1.2 Second Hypothesis

Here one particular hypothesis is explained in depth and is examined in the light of current literature.

2.1.2.1 Parts of the second hypothesis

Here one particular part of the hypothesis that is currently being explained is examined and particular elements of that part are given careful scrutiny.

2.2 Criteria Review

Here certain criteria are explained thus eventually leading to a foregone conclusion.

CHAPTER 3. METHODS AND PROCEDURES

This is the opening paragraph to my thesis which explains in general terms the concepts and hypothesis which will be used in my thesis.

With more general information given here than really necessary.

3.1 Introduction

Here initial concepts and conditions are explained and several hypothesis are mentioned in brief.

As can be seen in Table [3.1](#) it is truly obvious what I am saying is true.

Table 3.1 This table shows a standard empty table

3.1.1 Hypothesis

Here one particular hypothesis is explained in depth and is examined in the light of current literature.

This can also be seen in Figure [3.1](#) that the rest is obvious.

Figure 3.1 This table shows a standard empty figure

3.1.1.1 Parts of the hypothesis

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3.2 Criteria Review

Here certain criteria are explained thus eventually leading to a foregone conclusion as can be seen in Table [3.2](#).

Table 3.2 This table shows a standard empty table
with a limited captionwidth

CHAPTER 4. RESULTS

This is the opening paragraph to my thesis which explains in general terms the concepts and hypothesis which will be used in my thesis.

With more general information given here than really necessary.

4.1 Introduction

Here initial concepts and conditions are explained and several hypothesis are mentioned in brief.

Of course, data on this as seen in Table 4.1 is few and far between.

Table 4.1 Moon Data

Element	Control	Experimental
Moon Rings	1.23	3.38
Moon Tides	2.26	3.12
Moon Walk	3.33	9.29

4.1.1 Hypothesis

Here one particular hypothesis is explained in depth and is examined in the light of current literature.

Or graphically as seen in Figure 4.1 it is certain that my hypothesis is true.

4.1.1.1 Parts of the hypothesis

Here one particular part of the hypothesis that is currently being explained is examined and particular elements of that part are given careful scrutiny.



Figure 4.1 Durham Centre

4.1.2 Second Hypothesis

Here one particular hypothesis is explained in depth and is examined in the light of current literature.

4.1.2.1 Parts of the second hypothesis

Here one particular part of the hypothesis that is currently being explained is examined and particular elements of that part are given careful scrutiny.

4.2 Criteria Review

Here certain criteria are explained thus eventually leading to a foregone conclusion.

CHAPTER 5. SUMMARY AND DISCUSSION

This is the opening paragraph to my thesis which explains in general terms the concepts and hypothesis which will be used in my thesis.

With more general information given here than really necessary.

5.1 Introduction

Here initial concepts and conditions are explained and several hypothesis are mentioned in brief.

Or graphically as seen in Figure 5.1 it is certain that my hypothesis is true.

5.1.1 Hypothesis

Here one particular hypothesis is explained in depth and is examined in the light of current literature.

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Element	Control	Experimental
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Here one particular part of the hypothesis that is currently being explained is examined and particular elements of that part are given careful scrutiny.

5.2 Criteria Review

Here certain criteria are explained thus eventually leading to a foregone conclusion.



Figure 5.1 Durham Centre— Another View

REFERENCES

- Allen, B. S. (1984). System-assigned learning strategies and CBI. *Journal of Instructional Computing Research*, 1(1), 3–18.
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APPENDIX A. ADDITIONAL MATERIAL

This is now the same as any other chapter except that all sectioning levels below the chapter level must begin with the *-form of a sectioning command.

More stuff

Supplemental material.

APPENDIX B. STATISTICAL RESULTS

This is now the same as any other chapter except that all sectioning levels below the chapter level must begin with the *-form of a sectioning command.

Supplemental Statistics

More stuff.