

DOES TESTING TYPE MATTER?

Comparing Instant and Traditional Feedback Methods

I. INTRODUCTION

Tests and quizzes should be learning activities for students in addition to evaluating their learning. The use of different assessment methods has not been well documented in literature within higher education, and more specifically within colleges of agriculture. This study was conducted to examine student achievement using the Immediate Feedback Assessment Technique as compared to traditional scantron methods on multiple choice course and final exams. Specific objectives of the study included:

1. Compare the impact of testing methods on achievement on regular course exams; and
2. Determine if immediate feedback on regular course exams increased achievement on a comprehensive final exam.

II. CONCEPTUAL FRAMEWORK

- Since the early 2000s, educational psychologists have studied, refined, and validated an assessment procedure known as the Immediate Feedback Assessment Technique, or IF AT (Dihoff, Brosvis, & Epstein, 2003; Dihoff, Brosvis, Epstein, & Cook, 2004; Epstein, Brosvic, Dihoff, Lazarus, & Costner, 2003; Epstein, Lazarus, Calvano, MaEpstein, & Brosvic, 2002)
- The IF AT stems from the foundations of teaching-testing machines (Pressey, 1926; Skinner, 1958; as cited in Dihoff, Brosvis, Epstein, & Cook, 2004)
 - Moves students from being a passive receiver of information into an active demonstrator of skills and knowledge
- Studies have documented positive student perceptions of the IF AT
 - Including general positive affect and the usefulness in helping students learn class material (Cotner, et al. 2008; DiBattista et al. 2004; Epstein, & Brosvic, 2002)
- Little to no research exists using the IF AT instrument to aid student performance within colleges of agriculture

III. METHODOLOGY

The population of interest for this study consisted of students enrolled in an undergraduate leadership theory course at a Southern land grant university during the Fall 2014 semester. A total of 200 students were enrolled in the course. The accessible population consisted of 179 students who consented to participate in the study. Usable data was obtained from 163 of the 179 students yielding a participation rate of 91%.

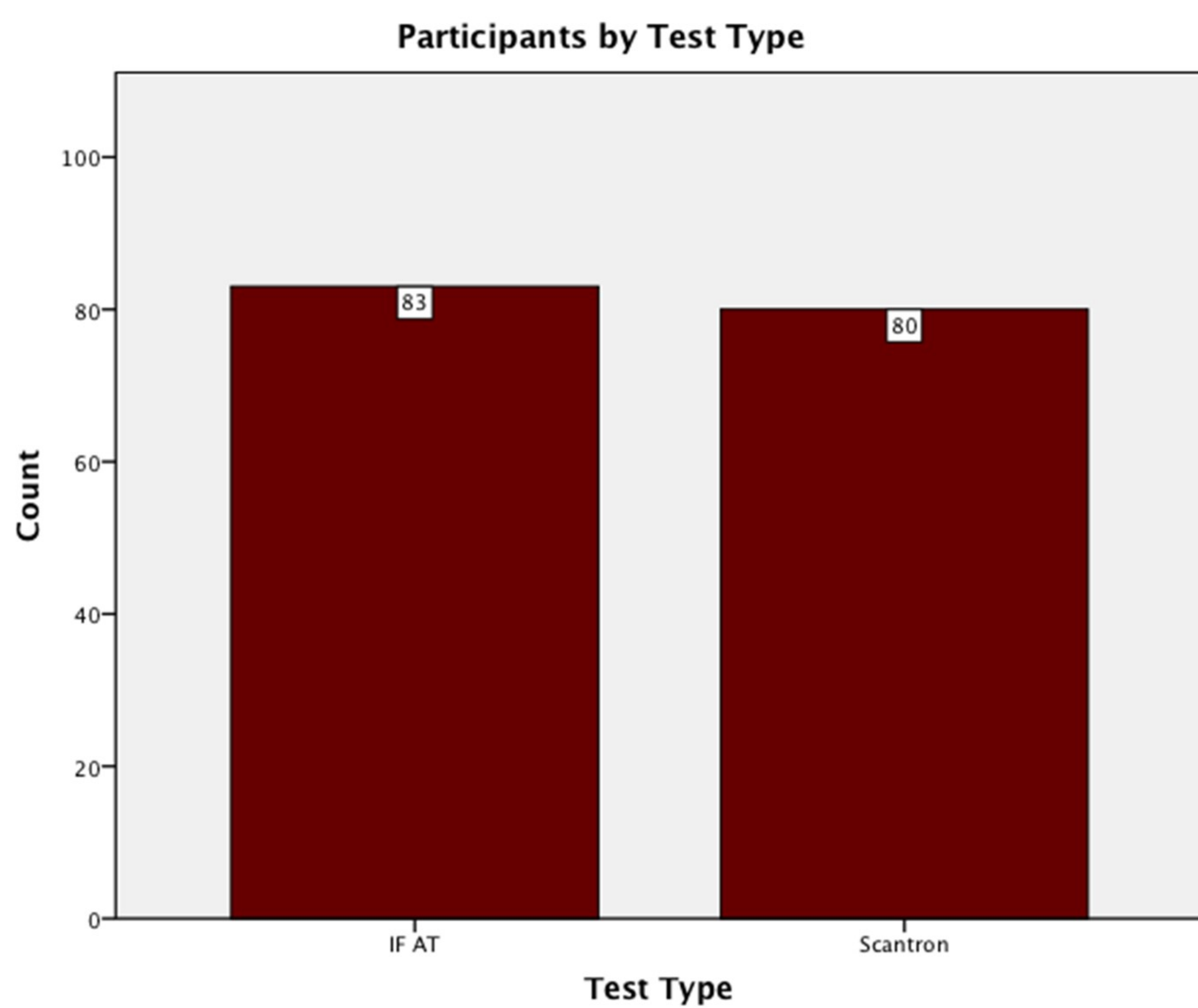
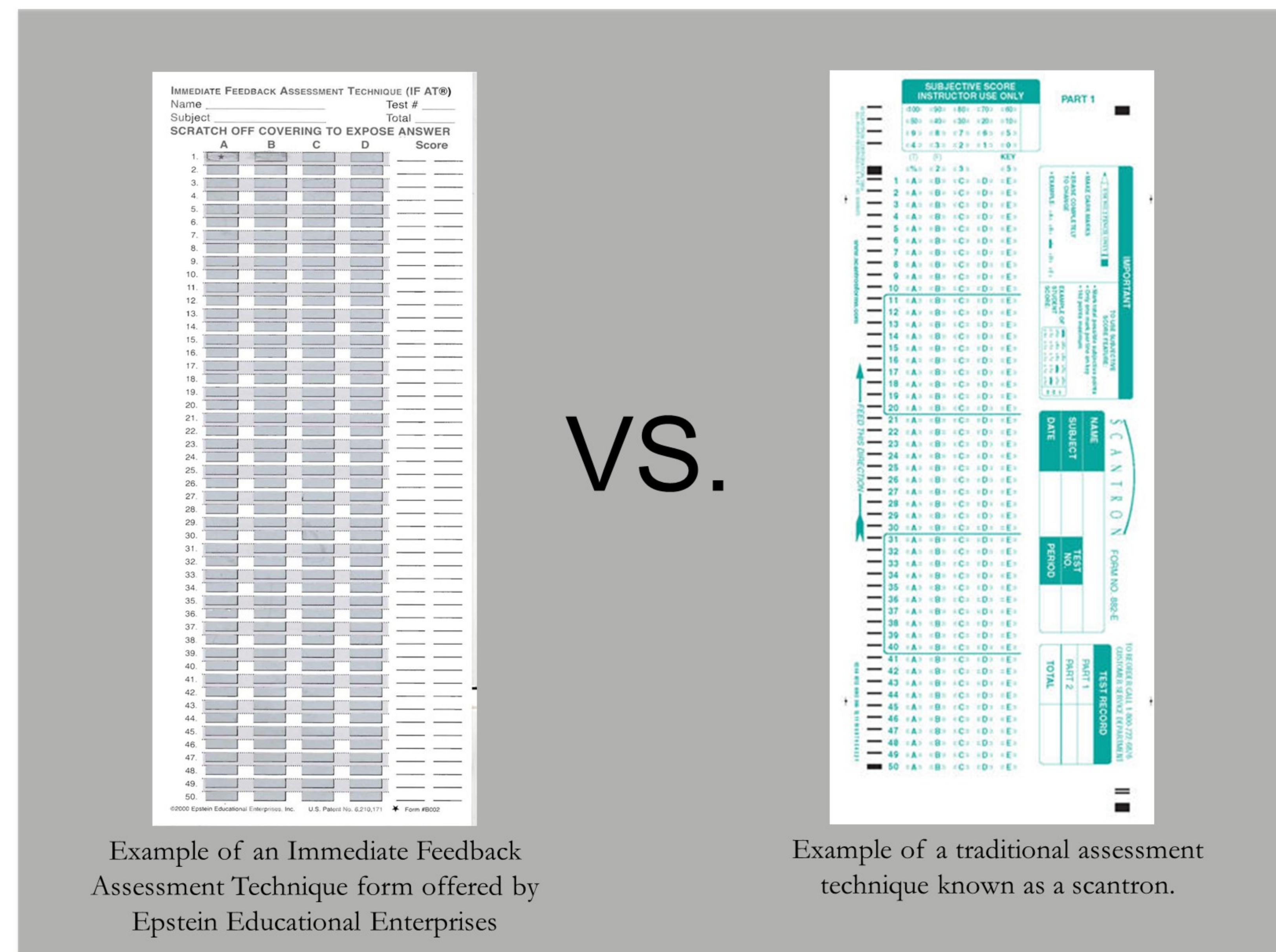


Chart 1: Counts the number of participants in the study by Test Type.



Example of an Immediate Feedback Assessment Technique form offered by Epstein Educational Enterprises

Example of a traditional assessment technique known as a scantron.

IV. FINDINGS

Objective one sought to compare the impact of testing methods on achievement on regular course exams. Each exam performance was compared by test type (see Table 1). Independent sample t-tests for each exam revealed no statistical differences as a function of test type.

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Exam 1 Overall Score	Equal variances assumed	-.251	161	.802	-.426
Exam 2 Overall Score	Equal variances assumed	1.911	161	.058	3.316
Exam 3 Overall Score	Equal variances assumed	1.951	161	.053	2.900
Exam 4 Overall Score	Equal variances assumed	.110	161	.913	.175
Final Exam Overall Score	Equal variances assumed	1.712	161	.089	2.432

Table 1: Outputs of conducting Independent t-tests for each assessment by Test Type

Objective two sought to determine if immediate feedback on regular course exams increased achievement on a comprehensive final exam. Using an independent t-test, the researchers compared the overall performance on the final by test type. No statistically significant difference ($p = .089$) existed. Traditional scantron yielded ($M=58.05$, $SD=9.83$) and IF AT resulted in ($M=60.48$, $SD=8.262$)

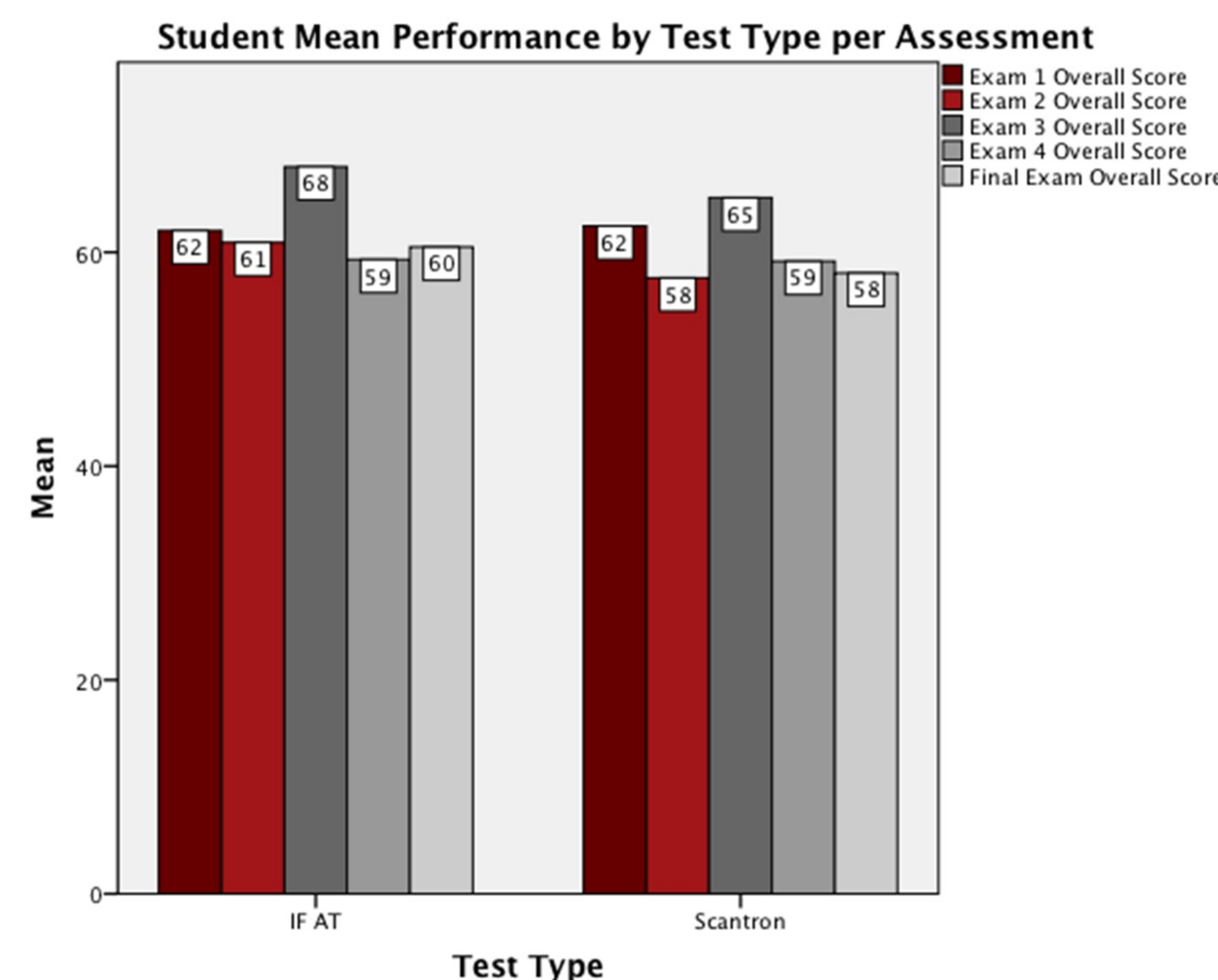


Chart 2: Displays the Mean Student Performance for each Assessment by Test Type.

V. CONCLUSIONS

- Scores on each of the four course exams were not statistically different by testing method
- The immediate feedback method had a minimal positive, but non-statistically significant, effect on student performance on the final exam as compared to the traditional method

No
Statistical
Difference

VI. RECOMMENDATIONS

1. An item analysis be conducted to determine if students using If AT forms performed better on the old questions
2. Investigate whether or not students used the IF AT forms appropriately. Anecdotal evidence suggests some students did not use the forms correctly to receive immediate feedback
3. Research should be conducted to determine and assess other appropriate methods of incorporating the Immediate Feedback Assessment Technique within colleges agriculture

VII. REFERENCES

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