Assessing MSBA Students’ Coding and Modeling Skills
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INTRODUCTION
While teaching a final quarter MS in Business Analytics course, I wondered
if MSBA students achieving basic skills in modeling and coding before graduation?
I explored the literature and found some articles that touched on parts of my
question – for example I found articles about
• How to teach programming to business students (e.g., to Finance Students) [1]
• How to make sure technical students have basic mathematical knowledge [2]
But while the course I am teaching briefly discusses these topics, it is “assumed”
that they will get the answers after they submit their classwork for the day.

Materials & Methods
Participants:
• 20 students in the Winter 23 course

Materials:
The materials for the class are the original course materials
which were the same for both the winter and summer. The questions could not have “gotten out” to the Winter quarter students. No other
substantive changes were made to the course.

RESULTS
For the modeling quizzes, the scores were more variable in the summer. The scores were also higher in the winter quarter. For the coding quizzes the scores were more variable than the modeling quizzes, but we still saw an improvement in the final coding quiz in the winter quarter.

Comparing High and Low Class Rank Students
While both summer and winter saw a decrease in quiz scores as they got harder for low course rank students, the results were less extreme in the Winter. In addition, the high rank students’ quizzes did not show as much change. But more did struggle with the second coding quiz in Winter. A Wilcoxon rank sum test on the medians showed in Summer there were differences between high and low students (Modeling p-value .018, Coding p-value .012) but in Winter there were no differences in medians (Modeling p-value .227, Coding p-value .221).

FUTURE DIRECTIONS
Future analysis needs to match completion of REV UP questions that tie to specific course topics. It is noted that these classes had small sample sizes so additional exploration should be done to see if these low REV UP questions were the reason that the scores improved. In addition, the professor created the coding and modeling quizzes based on personal thoughts about the “basic skills” that all students should know about modeling and coding. Additional consultation with additional faculty should occur.

CONCLUSIONS
We did see the expected result that the students who were performing the lowest in the course had decreasing scores on the coding and modeling quizzes as they got higher. We also showed that adding just a couple of REV UP questions (challenging problems and/or “basic skill” coding and modeling questions) to each set of classwork problems (REV UP problems designed to practice material from class lectures) for bonus points may have caused higher scores on the subsequent quizzes. It is noted that the quizzes were not returned to the students in the Summer and questions missed were just discussed during the following class so the questions could not have “gotten out” to the Winter quarter students. No other substantive changes were made to the course.

We can see from the median scores that overall the scores did increase from the Summer to the Winter course taught with REV UP bonus points.

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How do you provide “differentiated instruction” for students at different levels in your course with the hope that everyone gains?

REFERENCES