

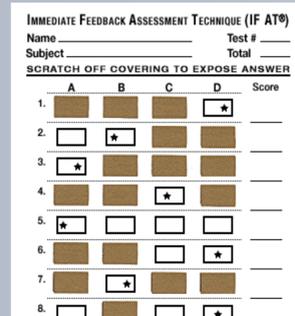
## TEAM BASED LEARNING

“The advantages of TBL include improved attendance, increased pre-class preparation, better academic performance, and the development of interpersonal and team skills,” [Michaelsen & Sweet, (14-Jun-08) *Higher Education Advocate*]

“A great advantage of using IF-AT forms in group learning is that it quickly becomes apparent to participants that “loud and forceful” is not always “right”; each member is empowered by knowledge rather than personality,” [Taken from the Epstein Educational Enterprises website].

## IF-AT TECHNIQUE

- Epstein Educational Enterprises <http://www.epsteineducation.com/home/about/how.aspx>
- Prepare exam using their TestMaker software (free), corresponding to an IF-AT scratch off answer sheet.
- A blank indicates an incorrect response. The \* indicates the correct response.
- Students earn partial credit for selecting the correct answer after the first attempt.
- Available with 4 or 5 answer choices
- 10 question IF-AT sheet \$90 for 500; 25 question IF-AT sheet \$115 for 500



## METHODS

### TWO-STAGE GROUP QUIZZES:

Stage 1: Each student takes an individual multiple choice quiz.

- Each question worth 4 points

Stage 2: Groups use IF-AT to take the same quiz.

- 4 points 1<sup>st</sup> attempt, 2 points 2<sup>nd</sup> attempt; 1 point 3<sup>rd</sup> attempt

Student quiz score: 2/3 Stage 1 + 1/3 Stage 2

### GROUP FORMATION:

Random, 3-4 students

### STUDY DESIGN:

2 “traditional” quizzes; 2 two-stage group quizzes

Future research: impact of quiz type on final exam performance; compare with results from management course (Ann Rensel, Ph.D.)

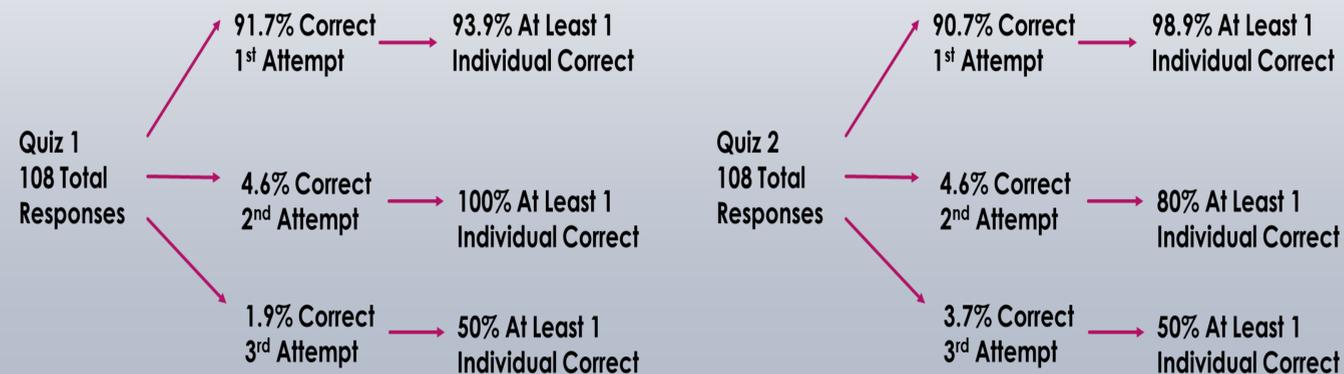
## RESULTS

### OVERALL RESULTS

Group Quiz 1	Group Score	Ind. Avg.	Ind. High	Ind. Low	Quiz Avg.	Avg. Gain	Min Gain	Max Gain
1	85	63	75	50	70	7.3	3	11
2	96	78	83	75	84	6.3	5	7
3	92	64	92	33	74	9.7	0	20
4	100	67	75	58	78	11	8	14
5	100	47	67	33	65	17.3	11	22
6	100	67	92	33	77	10.5	2	22
7	83	58	83	42	67	8.5	0	14
8	94	73	83	58	80	6.8	3	12
9	100	72	83	50	81	8.7	5	16

Group Quiz 2	Group Score	Ind. Avg.	Ind. High	Ind. Low	Quiz Avg.	Avg. Gain	Min Gain	Max Gain
1	100	79	100	58	86	7.0	0	14
2	100	71	92	58	81	9.8	3	14
3	100	75	92	58	84	8.5	3	14
4	96	71	92	33	79	8.3	1	21
5	83	69	83	58	74	4.7	0	8
6	83	64	75	58	71	7.0	3	9
7	83	67	83	42	72	5.7	0	14
8	100	78	100	67	87	8.7	0	8.7
9	100	78	92	58	85	7.7	3	14

### QUESTION SUMMARY



## ENGAGEMENT!

