

# FTCP Capstone Project

Active Learning Team-Quiz Used In  
Electronics Communications Course

**Gale Allen**

**Electrical and Computer Engineering & Technology**

**April 19, 2005**

# Communications Course

- Introduction to amplitude and frequency modulation, circuits and antennas
- 14 students, EET 456, 4 credits
- Lectures and lab
- 3<sup>rd</sup> and 4<sup>th</sup> year students

# Adapting the Textbook Material

- Dr. James Beasley provided PDF files of example quiz material for each chapter.
- Selected questions for the team-quiz project.
- Circled answers (did not use the scratch-off pads)

# Sample Question

6. The basic difference between the block diagram of an AM receiver and FM receiver is that:
- a. an FM receiver uses a limiter and discriminator instead of a diode detector.
  - b. an FM receiver does not use the superheterodyne design.
  - c. an FM receiver cannot ever use automatic gain control.
  - d. an FM receiver must use automatic frequency control.

Answer: a

# Teams

- In laboratory sessions the students work in groups of about three each.
- For the team quiz activity the students worked in these same groups with their lab partners.

# Working Sessions (3)

- First session
  - Worked in teams for fifteen minutes.
  - Recorded scores on the whiteboard (10 and 0 points).
  - Too many questions. Not have time to discuss them.
- Second session
  - Students worked in teams prior to the class.
  - Group interaction was not as good as in first session.
- Third session
  - Fewer questions
  - Worked in class (10, 5 and 0 points)
  - Most effective

# Survey

- 1) Which of the three sessions was the most effective?
  - a) The 1st session – involved lots of questions and almost no discussion.
  - b) The 2nd session – was a take-home followed by work-in-class.
  - c) The 3rd session – had fewer questions and more discussion.
- 2) Which would be better?
  - a) More questions and less discussion.
  - b) Fewer questions and more discussion.
- 3) Which would be better?
  - a) Include questions that have numeric answers.
  - b) Do not include questions that have numeric answers.
- 4) SOME form of the team-quiz sessions should be used in the future.  
Agree    Disagree    No Opinion
- 5) If use of the team-quiz approach is continued how often do you think it should be done?
  - a) Every class.
  - b) Every other class.
  - c) Once per week.
  - d) Once per chapter,
  - e) Twice per chapter.
  - f) Once per month.
  - g) or write in your idea \_\_\_\_\_.

# Survey Results

- 3rd session was best.
- Fewer questions and more discussion.
- Include questions that have numeric answers.
- SOME form of the team-quiz sessions should be used in the future - Agree
- If use of the team-quiz approach is continued how often do you think it should be done?
  - Once per week

# Conclusion

- With one exception the students were in favor of continuing using the tool.
- There was strong support for using it once each week; so that is the plan.
- I think that use of the tool is effective in this course.
  - Student reaction
  - Learning which took place during discussion
- I will look for opportunities to use it in other courses.