

# Peer Tutoring in Conceptual Design

## Principles and Application

Genevieve Langdon  
University of Liverpool



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*of* LIVERPOOL



# Outline

- ◆ What is peer tutoring?
- ◆ How does it fit into conceptual design?
- ◆ Evaluating its success....



# What is Peer Tutoring?

- ◆ More senior students (tutors) help their less experienced counterparts.
- ◆ How? By facilitating group sessions in which certain topics or problems are discussed, without:
  - ◆ Doing the work for the students, or
  - ◆ Explaining it to them as if the peer tutor were a teacher!



# Facilitating Group Sessions

- ◆ Facilitating means: getting everyone else to say their bit and to think, without having to do any work yourself!
- ◆ The facilitator holds the group together and makes it work for itself.
- ◆ The peer tutors must be trained beforehand to help them do this.



# How Does it Fit into Conceptual Design?

- ◆ In design, students must:
  - ◆ Define the problem
  - ◆ Use their basic knowledge of engineering materials to create a solution to the problem.
- ◆ Students are generally uncomfortable with this concept - this leaves them less able to tackle a substantial design project without the help and intervention of available teachers or experts.
- ◆ Peer tutoring helps them to THINK FOR THEMSELVES



# Peer Tutoring at Liverpool

- ◆ Formal lectures – give out 'black-box' problems to be solved in peer groups
- ◆ Group discussions with peer tutors for understanding the problems, generating ideas, discussing possible solutions & talking about how to communicate those solutions
- ◆ Solutions handed in and critiques given in formal lectures – next exercise handed out
- ◆ The students go through the process again...



# Evaluating Success....

- ◆ Evaluation methods being used:
  - ◆ Student questionnaires (student perceptions)
  - ◆ Peer tutor focus group (tutor perceptions)
  - ◆ Lecturers perceptions
  - ◆ Student Marks & Attendance Records
  - ◆ Feedback from Staff/Student Committee
- ◆ The first semester of the pilot scheme has just finished, and all of the results aren't in yet...



# Peer Tutor Perceptions (1)

- ◆ Did the students change their approach to design after the groups?
  - ◆ “Students became more willing to participate”
  - ◆ “They evaluated and checked their own designs more, and those of other group members”
  - ◆ “They became less dependent on me for ideas and input”
  - ◆ “More ideas were suggested during brain storming sessions”

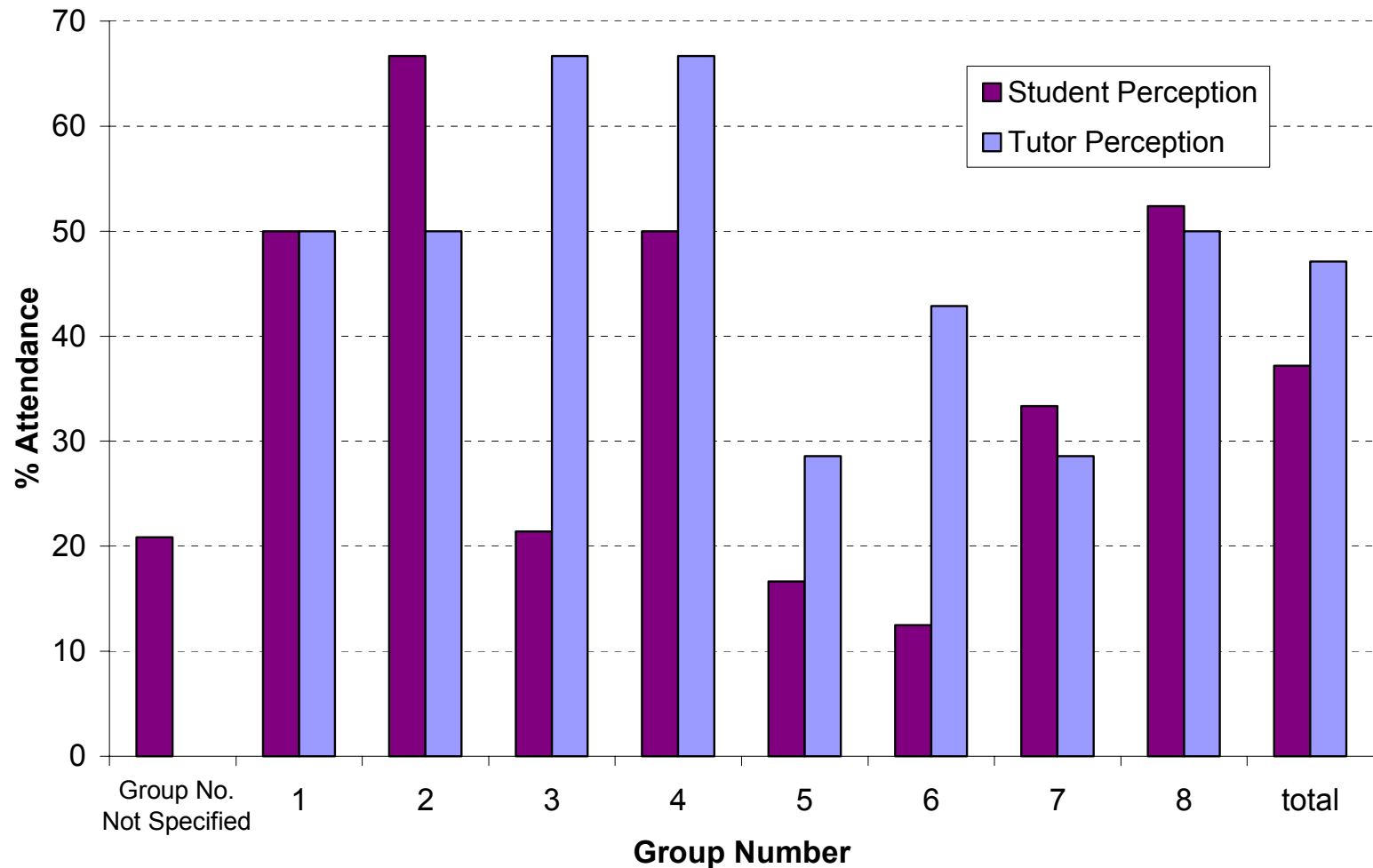


# Peer Tutor Perceptions (2)

- ◆ How did you benefit from being a tutor?
  - ◆ “I learned a lot about conceptual design from the groups”
  - ◆ “Better communication skills”
  - ◆ “Deeper relationships with second years”
  - ◆ “Enjoyed the group sessions”
  - ◆ “Skills learnt helped me become more employable”
  - ◆ “I became more responsible, helping others’ learning”



# Student Attendance – Tutor and Student Perceptions





# Summary

- ◆ Peer tutoring has been successfully implemented
- ◆ Peer tutoring helps students to think for themselves, develop problem solving (and other key) skills, take more responsibility for their own learning and increases their confidence.
- ◆ The peer tutoring scheme also benefited the tutors, developing their key skills and fostering a more responsible attitude.