
**Introduction to
Collaborative Learning
and
Programming Practices**

Collaborative Learning

- Term given for a variety of approaches in teaching that involves joint intellectual effort by students and teachers.
 - A shift from the ordinary lecture centered environment in college classrooms.
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Collaborative Learning

- The ability to work effectively and efficiently with others as well as the ability to develop interpersonal skills requires a special knowledge. (Davis, Bryant, Liu, Tedrow, & Say, 2003)
 - The information technology environment requires its professionals to have the ability to work successfully with people from different cultural backgrounds.
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Collaborative Learning

- Collaborative learning classrooms place more emphasis on student discussion and interaction and less emphasis on listening and note taking.
 - The focus is on “soft skills,” such as communication, interpersonal relationships, teamwork, and working with diverse coworkers.
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Pair Programming

- A style of programming where two programmers are working together on one workstation.
 - One person serves as the driver and the other as the navigator.
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Pair Partners

- **Driver**

In control of the mouse and the keyboard or in charge of writing down the design.

- **Navigator**

Observes the driver; looks for errors in the program; the strategic, long range thinker in the pair.

Role Swapping

- Swapping roles allows students to share the work load given in the laboratory session.
 - The professor or lab assistant in charge of your lab will facilitate the swaps.
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Pair Selection

- On odd lab weeks, professors will assign pairs for the lab sessions.
 - Students will be given the opportunity, on even weeks, to self select their partners.
 - No one student will be allowed to pair with another student more than once.
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Myths of Pair Programming

- “The navigator finds only syntax mistakes. How boring is that!”
 - “It will only be effective with the right partner.”
 - “I’ll never get credit for doing anything. I’ll have to share all the recognition with my partner.”
 - “If I get a bad partner, I’ll get a bad grade.”
 - “If I get a good partner, I don’t have to do any work.”
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Partner Evaluation

- Each of you will be evaluated by your partner
 - This evaluation will be factored into your grade
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Benefits of Pair Programming

- Increased discipline
 - Increased team cohesion
 - Opportunities for mentoring
 - Better code
 - Improved communication skills
 - More enjoyment from programming
 - Greater confidence
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