Teamwork for Learning and Project Success

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People collaborating with others has benefits that can be exploited

- Attack bigger problems in a short period of time
  - *Division of labor*

- Utilize the collective experience of everyone
  - *Generate more ideas for solutions*

- *That’s the way the real world works!*
  - *Industry values teaming skills*
Learning Outcomes for Individuals (From Research)

- Better achievement and retention.
- Better critical thinking and higher-level reasoning.
- More differentiated views of others.
- More accurate understanding of others' perspectives.
- More liking for classmates and teacher.
- More liking for subject areas.
- Better teamwork skills.

%<Gain> versus %<Pretest> scores on the conceptual Mechanics Diagnostic (MD) or Force Concept Inventory (FCI) tests for 62 courses enrolling a total N = 6542 students: 14 traditional (T) courses (n = 2084), which made little or no use of interactive engagement (IE) methods, and 48 IE courses (n = 4458), which made considerable use of IE methods. Slope lines for the average of the 14 T courses $\langle g \rangle_{14T} = 0.23 \pm 0.04$ (SD) and the 48 IE courses $\langle g \rangle_{48IE} = 0.48 \pm 0.14$ (SD) are shown. The negative-slope straight lines are lines of constant, normalized average gain $g = \langle Gain \rangle / \text{maximum possible } \langle Gain \rangle = (\%\text{post} - \%\text{pre}) / (100 - \%\text{pre})$.

Learning Team

Zone of Development

Student A

Student B

Student C

Student D

Learning objective 1

Learning objective 2

Learning objective 3

Learning objective 4
A team is a set of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable.

What affects team project success?

- Presence of a shared mission and goals
- Motivation and commitment of team members
- Experience level
  - ... and presence of experienced members
- Team size, organization, and open atmosphere
  - ... and results-driven structure
- Reward structure within the team
  - … incentives, enjoyment, empowerment (ownership, autonomy)
- Continual monitoring of progress and direction
  - ... and adjusting when necessary
What affects successful group learning?

- Individual Accountability
- Positive Interdependence
- A Challenging Task
- Timely Feedback
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Successful Projects

- Presence of a shared mission and goals
- Motivation and commitment of team members
- Experience level
  - ... and presence of experienced members
- Team size, organization, and results-driven structure
  - ... and open atmosphere
- Reward structure within the team
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- Continual monitoring of progress and direction
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Successful Learning

- Individual Accountability
- Positive Interdependence
- A Challenging Task
- Timely Feedback
Which will you be, a group or a team?
Teams can benefit from longer time-frames

Longer time frames give time to:

- Develop a good understanding of the team’s intellectual resources.
- Work out differences of opinion and form common goals.
- Build tolerance for honest communication.
- Work on group processing tasks.
- Learn how to work together effectively.
- Accomplish complex and challenging tasks.
- Become a team.
Teamwork has potential problems... What are they?
Social Loafing

In certain circumstances a high percentage of group members prefer to let someone else work on their behalf.
Forces that lead to **social loafing**:

- Some individuals are naturally shy.
- Some individuals dominate discussions.
- Members may think they lack knowledge.
- Members aren’t committed to team success.
- Members don’t want to appear disagreeable.
- The task isn’t perceived as complex enough to require more than 1 or 2 people to accomplish.

**Source:** Karau & Williams. (1993).