

Student Teams in the Classroom

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August 31, 2011

- “The best answer to the question, ‘What is the most effective method of teaching?’ is that it depends on the goal, the student, the content, and the teacher. But the next best answer is, ‘Students teaching other students.’”

W. McKeachie

What is a student team?

- A team is a small number of people with complementary skills who are committed to a common purpose, common performance goals, and an approach for which they are mutually accountable.

(Katzenbach & Smith, 1993)

- Small number – typically two to five students
- Complementary skills – could be skill level and ability
- Common purpose and goals – monitored by instructor
- Mutual accountability – structured into the course

Why use student teams?

- The “real world” expects it
- Accreditation agencies often require it
- Students learn interpersonal skills
- Teams can succeed with more complicated projects
- Students learn better

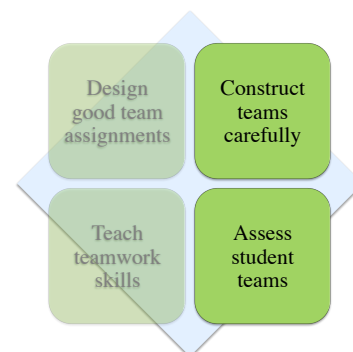
Research has found...

- Students working in groups tend to learn more and retain it longer than when the same content is presented in other ways.
(Davis, 1993)
- Learning *individually*, college students score at the 53rd %-ile; *cooperatively*, they score at the 70th %-ile.

(Johnson, Johnson & Smith, 1998)
- Teamwork is conducive to higher-order cognitive tasks such as analysis, synthesis, evaluation, and problem solving.
(Wankat & Oreovicz, 1993)
- Diverse groups of intelligent members (can) perform better than groups comprised of the best individuals.

(Hogg & Page 2004)

Setting up students for success

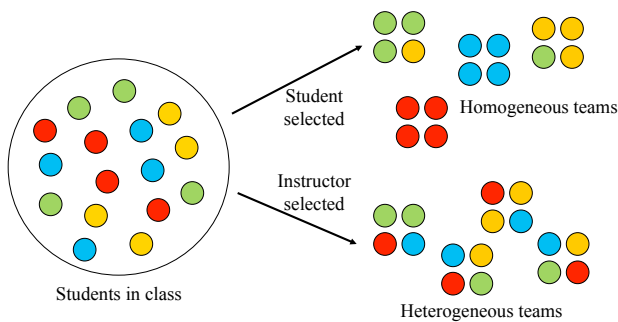


Construct teams carefully

Factors to consider when forming teams

- Method of group formation
 - Self-selected, randomly selected, or instructor-designed
- Size of group
 - Appropriate to task and manageable
- Practical issues
 - Common availability
- Composition of group
 - Mixed according to ability level
 - Mixed according to race, gender, etc.
- Longevity of group and of individual roles
 - Same all term, three week rotation, or rotate with each task
 - Informal, formal and constant, or formal and rotating

Student vs. instructor selected teams



Activity: Form teams with class roster

- Review class roster that lists students by
 - Gender
 - Minority status
 - Grade in prerequisite class
 - Available meeting times
- Form four teams
- Note difficulties and discuss

One possible solution (see handout)

- Members have common available meeting times
- Mixed ability levels
- No outnumbered females*
- No outnumbered minorities*

*Especially for students early in their career

Team 1				
Name	Gender	Minority?	Grades	Availability
Cristina	F	N	C+	E
Frederico	M	N	A	E
Hannah	F	N	A-	A, E

Team 2				
Name	Gender	Minority?	Grades	Availability
Adam	M	N	A	A, W
Bradley	M	N	C-	W
Isaac	M	N	B	W

Team 3				
Name	Gender	Minority?	Grades	Availability
Eric	M	Y	B+	A, W, E
Louis	M	N	B	A, E
Mohammed	M	Y	A	A

Team 4				
Name	Gender	Minority?	Grades	Availability
Demetrius	M	Y	B-	E, W
Glenda	F	N	C	A, E
Jonathon	M	N	C	E, W
Kimberly	F	Y	A-	E

Recommendations for constructing teams

- Use instructor-assigned teams
 - Fair to all students, they learn to work with diverse people (and may make new friends), they can be more objective, teams are set up for success, possible interpersonal conflict can be a learning experience
- Assign three or four students per team
 - Smaller groups: better participation, individual accountability, flexibility in scheduling
 - Larger groups: more ideas, more complex tasks
- Avoid scheduling conflicts
- Assure heterogeneity in terms of ability
- Do not outnumber women and minorities (especially in introductory classes)
- Provide recourse for dysfunctional teams

Assess student teams

Recommendations for assessing teams

- Measure individual performance *and* team achievements
- Evaluate individual contribution to teams
 - Use for group processing/feedback (formative) or grades (summative)
 - Employ peer ratings (see [handout](#) or www.catme.org)
- Determine grading scheme for team assignments
 - Average team grade, weighted team grade, etc.
- Encourage cooperation on tests
 - Bonus points, team tests
- **Do not use competitive grading!**

Activity: Assign student grades

- Review tabulated summary of student performance
- Talk about how you might assign individual grades

Sample use of peer rating form*

- Collect self and peer ratings
- Convert verbal descriptions to numerical scores
 - Excellent=100, Very Good=87.5, etc.
- Compute average individual rating for each student
- Compute weighting factor for each student (impose maximum and minimum)
- Calculate adjusted score for each student

*Based on Oakley et al, 2004

Sample use of peer rating form

- Convert verbal descriptions to numerical scores
- Compute average individual rating for each student

	Rating by Walter	Rating by Xavier	Rating by Yolanda	Rating by Zelda	Average individual rating
Walter	Exc=100	Exc=100	Exc=100	Exc=100	100
Xavier	Exc=100	Exc=100	Exc=100	Exc=100	100
Yolanda	Sat=75	Sat=75	Sat=75	Sat=75	75
Zelda	Sat=75	Sat=75	Sat=75	Sat=75	75

Sample use of peer rating form

- Compute weighting factor for each student

	Average individual rating	Average team rating	Weighting factor
Walter	100	87.5	$100/87.5 = 1.14 \rightarrow 1.10$
Xavier	100		$100/87.5 = 1.14 \rightarrow 1.10$
Yolanda	75		$75/87.5 = 0.86 \rightarrow 0.90$
Zelda	75		$75/87.5 = 0.86 \rightarrow 0.90$

Sample use of peer rating form

- Calculate adjusted homework score for each student

	Team homework score	Weighting factor	Adjusted homework score
Walter	90	1.1	$1.1 * 90 = 99$
Xavier	90	1.1	$1.1 * 90 = 99$
Yolanda	90	0.9	$0.9 * 90 = 81$
Zelda	90	0.9	$0.9 * 90 = 81$

Sample use of peer rating form

- Homework=50%, Tests=50% of final course grade

	Individual test score	Team homework score	Adjusted homework score	Final course grade
Walter	100	90	99	100
Xavier	75	90	99	87
Yolanda	100	90	81	91
Zelda	75	90	81	78

Concerns about using peer ratings

- Students will rate everyone as excellent
 - Identical ratings means all get the same grade, that is good
 - It hasn't happened in several large studies
- Students will inflate self ratings
 - Not found in several studies, deflation is a greater concern
 - Placing limits on the weight factor lessens this issue
- Student ratings will be based on personal prejudices
 - Gender bias: Women received and gave lower ratings than teammates
 - Racial bias: Minorities received lower ratings but gave higher ratings
 - Both may be alleviated by good team formation
- Students will complain about grades being affected by ratings
 - Nothing can eliminate *all* complaints, but peer ratings results in fewer

Keys to success

- Start from the first day of class
- Tell students what you're doing and why
- Talk about important team behaviors (communication, leadership, etc.) and provide guidance on how to work effectively in teams
- Create instructor-assigned teams

Keys to success

- Begin with tasks that are easy and well-defined, then increase the difficulty
- Design team assignments that promote "positive interdependence"
- Build in accountability
 - Randomly call on students to share their answers
 - Reflect some of the informal activities in the formal evaluations
- Be flexible and willing to adjust your approach

Activity: Discuss how to leverage diversity

- How might you design effective team experiences to leverage the diversity in your classroom?