LDR Workshop
Design and implementation of effective teamwork for student learning and leadership development

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Agnes Scott College   May 11, 2015

Workshop Layout

Welcome, Overview, & Introductions
◦ Our Stories

Course Design Foundations
◦ How Learning Works – How People Learn – Understanding by Design

Teamwork
◦ Rationale and Essential Elements
◦ Decision Making exercise

Cooperative Jigsaw: Teamwork and Leadership
◦ Rationale
◦ Key Elements

Applications in LDR 101 or other courses

2

Overall Goal

Build your knowledge of evidence-based practices for integrating teamwork into LDR 101 or other courses, and your implementation repertoire.

3

Workshop Objectives

Participants will be able to:
◦ Describe key features of evidence-based instruction and effective, teamwork strategies for facilitating learning
◦ Summarize key elements of Course Design Foundations
  ◦ *How Learning Works* and *How People Learn (HPL)*
  ◦ *Understanding by Design* (UbD) process – Content (outcomes) – Assessment – Pedagogy
◦ Explain key features of and rationale for integrating teamwork
◦ Identify connections between cooperative learning and desired outcomes of courses and programs

Participants will begin applying key elements to the design of their courses

4

Reflection and Dialogue

Systematic integration of teamwork can be achieved by structuring student-student engagement

Individually reflect on **your favorite rationale** for **engaging students**. Write for about 1 minute.

◦ Context/Audience? E.g., prior FYS section, seminar, lab
◦ Why engaging students is important?
◦ What support do you have for your rationale?

Discuss with your neighbor for about 2 minutes
◦ Select/create a response to present to the whole group if you are randomly selected

5

Seven Principles for Good Practice in Undergraduate Education

Good practice in undergraduate education:
◦ **Encourages student-faculty contact**
◦ **Encourages cooperation among students**
◦ **Encourages active learning**
◦ Gives prompt feedback
◦ Emphasizes time on task
◦ Communicates high expectations
◦ **Respects diverse talents and ways of learning**

Chickering & Gamson. (1987). http://learningcommons.evergreen.edu/pdf/fall1987.pdf   6
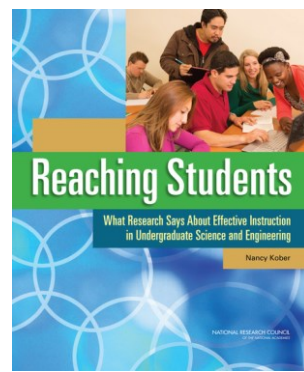
Discipline-Based Education Research (DBER) Report

National Research Council Summer 2012 –
http://www.nap.edu/catalog.php?record_id=13362

ASEE *Prism Summer 2013*

Journal of Engineering Education – October, 2013

National Research Council – 2015
http://www.nap.edu/catalog/18687/reaching-students-what-research-says-about-effective-instruction-in-undergraduate

7

Engaged Pedagogies = Reduced Failure Rates

Evidence-based research on learning indicates that when students are actively involved in their education they are more successful and less likely to fail. A new PNAS report by Freeman et al., shows a significant decrease of failure rate in active learning classroom compared to traditional lecture
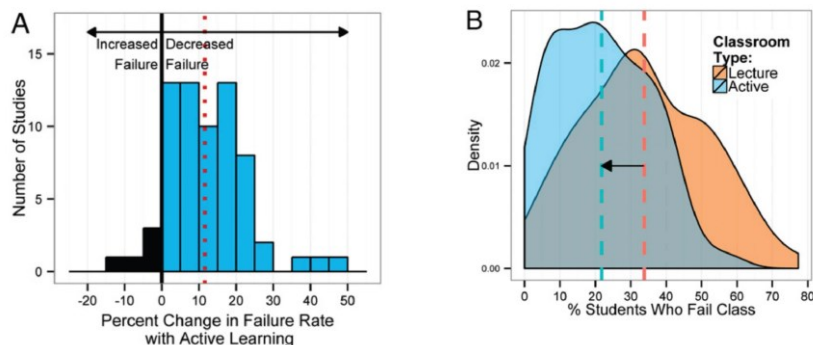
Freeman, Scott; Eddy, Sarah L.; McDonough, Miles; Smith, Michelle K.; Okoroafor, Nnadozie; Jordt, Hannah; Wenderoth, Mary Pat; Active learning increases student performance in science, engineering, and mathematics, 2014, Proc. Natl. Acad. Sci.

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Lili's Rationale for Engaging Students

Many different approaches offer alternatives to straightforward lectures and tightly structured labs. Possibilities include…cooperative learning, techniques that solicit immediate feedback on teaching and course content, and so on. These approaches allow students to analyze, criticize, and communicate…They help students take responsibility for their own learning. They also allow students to learn from each other, building communities of learners and teachers that extend beyond the classroom.

From Analysis to Action: Undergraduate Education in Science, Mathematics, Engineering, and Technology, **The National Research Council, 1996**

Mixing it up (in the classroom and lab) to engage students in their own learning

Design and facilitate learning experiences

< instructors <

Deliver information

Diversity is not simply a matter of having people who look different sitting next to each other but learning in the same way. What I'm trying to introduce into the conversation is the power of collaboration, of bringing together people who bring different kinds of skills to solving a problem. That diversity can empower creative ways of learning.

Studies show that groups with a mix of skills, backgrounds and ways of thinking are better at solving complex multidimensional problems — like designing environmental policies, cracking codes or creating social welfare systems — even if the individuals in the group are not all high performers.

Lani Guinier Redefines Diversity, Re-Evaluates Merit
New York Times Education Life, February 6, 2015

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Karl's Rationale for Engaging Students

First Teaching Experience – Third-year course in metallurgical reactions – thermodynamics and kinetics
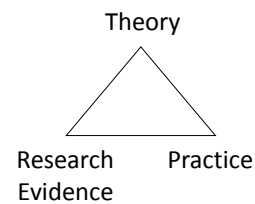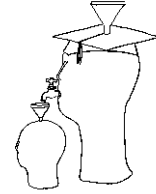
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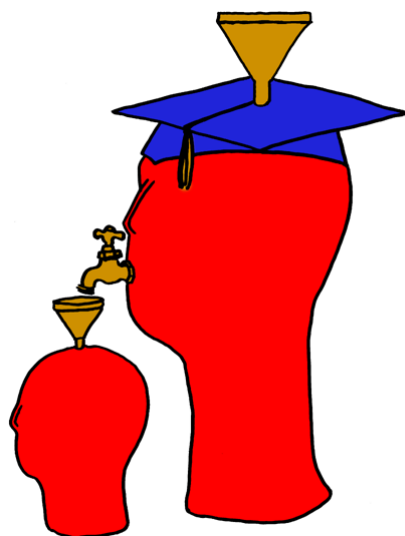
Lila M. Smith

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Engineering Education

Practice – Third-year course in metallurgical reactions – thermodynamics and kinetics

Research – ?

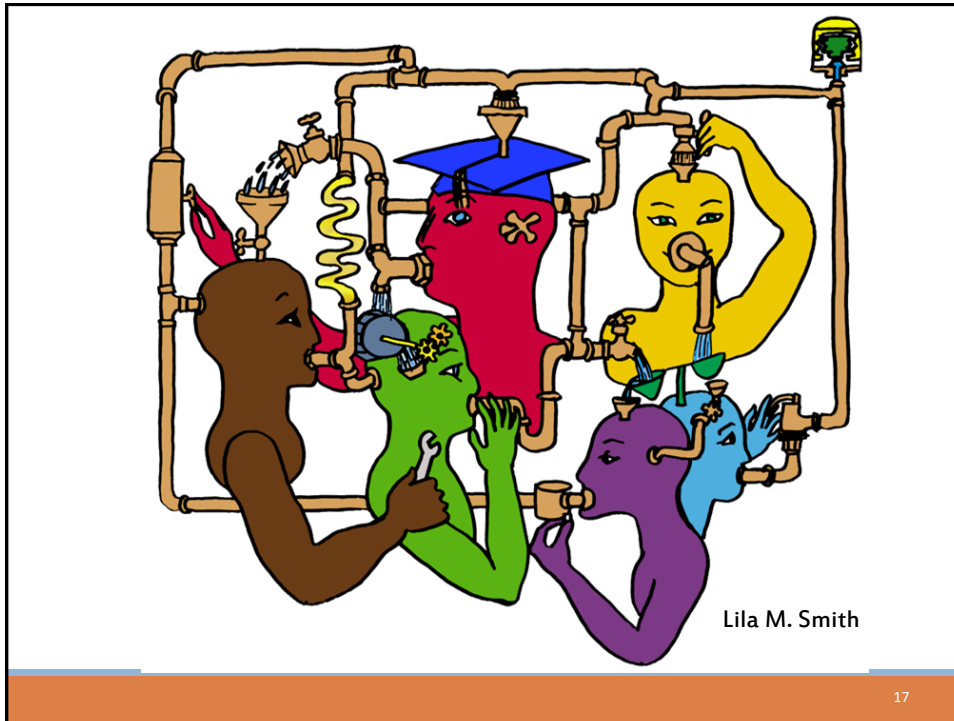Theory – ?

Theory

Research   Practice
Evidence

15

University of Minnesota College of Education Social, Psychological and Philosophical Foundations of Education

- Statistics, Measurement, Research Methodology
- Assessment and Evaluation
- Learning and Cognitive Psychology
- Knowledge Acquisition, Artificial Intelligence, Expert Systems
- Development Theories
- Motivation Theories
- Social Psychology of Learning: Student – Student Interaction
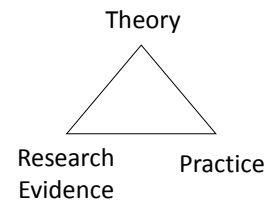
16

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Cooperative Learning

Theory – Social Interdependence – Lewin – Deutsch – Johnson & Johnson

Research – Randomized Design Field Experiments

Practice – Formal Teams/Professor's Role

Theory

Research Evidence   Practice

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Cooperative Learning Introduced to Engineering – 1981

Smith, K.A., Johnson, D.W. and Johnson, R.T., 1981. The use of cooperative learning groups in engineering education. In L.P. Grayson and J.M. Biedenbach (Eds.), *Proceedings Eleventh Annual Frontiers in Education Conference*, Rapid City, SD, Washington: IEEE/ASEE, 26-32.

JEE December 1981

19

Cooperative Learning Research Support

Johnson, D.W., Johnson, R.T., & Smith, K.A. 1998. Cooperative learning returns to college:
What evidence is there that it works? *Change*, *30* (4), 26-35.

• Over 300 Experimental Studies
• First study conducted in 1924
• High Generalizability
• Multiple Outcomes

Outcomes

1. Achievement and retention
2. Critical thinking and higher-level
   reasoning
3. Differentiated views of others
4. Accurate understanding of others'
   perspectives
5. Liking for classmates and teacher
6. Liking for subject areas
7. Teamwork skills

January 2005

March 2007

Johnson, D. W., Johnson, R. T., & Smith, K. A. (2014). Cooperative learning: Improving university instruction by basing practice on validated theory. Journal on Excellence in College Teaching, *25*(3&4)

20

Cooperative Learning is instruction that involves people working in teams to accomplish a common goal, under conditions that involve both *positive interdependence* (all members must cooperate to complete the task) and *individual and group accountability* (each member is accountable for the complete final outcome).

Key Concepts

- Positive Interdependence
- Individual and Group Accountability
- Face-to-Face Promotive Interaction
- Teamwork Skills
- Group Processing

http://personal.cege.umn.edu/~smith/links.html   21

Undergraduate Teaching Faculty: The 2013–2014 HERI Faculty Survey

Figure 2. Changes in Faculty Teaching Practices, 1989 to 2014 (% Marking "All" or "Most" Courses)
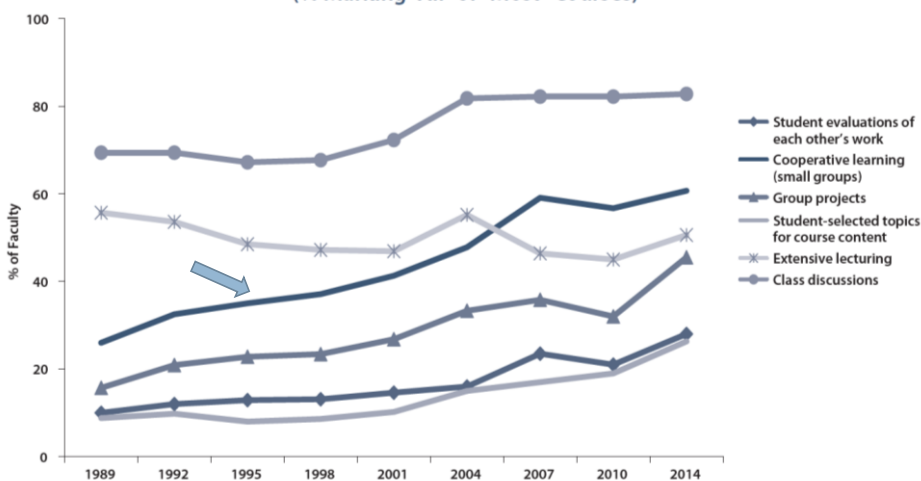
http://heri.ucla.edu/monographs/HERI-FAC2014-monograph.pdf   22

The American College Teacher:
National Norms for 2007-2008

Methods Used in "All" or "Most"	All – 2005	All – 2008	Assistant - 2008
Cooperative Learning	48	59	66
Group Projects	33	36	61
Grading on a curve	19	17	14
Term/research papers	35	44	47

http://www.heri.ucla.edu/index.php

Undergraduate Teaching Faculty, 2011*

Methods Used in "All" or "Most"	STEM women	STEM men	All other women	All other men
Cooperative learning	60%	41%	72%	53%
Group projects	36%	27%	38%	29%
Grading on a curve	17%	31%	10%	16%
Student inquiry	43%	33%	54%	47%
Extensive lecturing	50%	70%	29%	44%

*Undergraduate Teaching Faculty. National Norms for the 2010-2011 HERI Faculty Survey,

www.heri.ucla.edu/index.php

Active Learning: Cooperation in the College Classroom

Informal Cooperative Learning Groups

Formal Cooperative Learning Groups

Cooperative **Base** Groups

Notes: Cooperative Learning Handout (CL-College-814.doc)
[CL-College-814.doc]

Third Edition

ACTIVE LEARNING:

COOPERATION IN THE COLLEGE CLASSROOM

David W. Johnson
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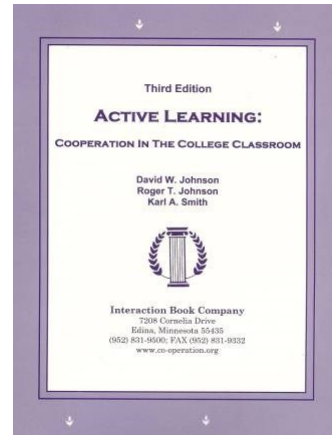
25

Book Ends on a Class Session

Advanced Organizing

10-12 Minute Lecture

Vol. 1

3-4 min. Turn to Partner

10-12 Minute Lecture

Vol. 2

3-4 min. Turn to Partner

10-12 Minute Lecture

Vol. 3

5-6 Minute Summary
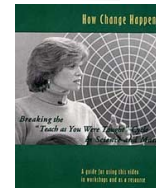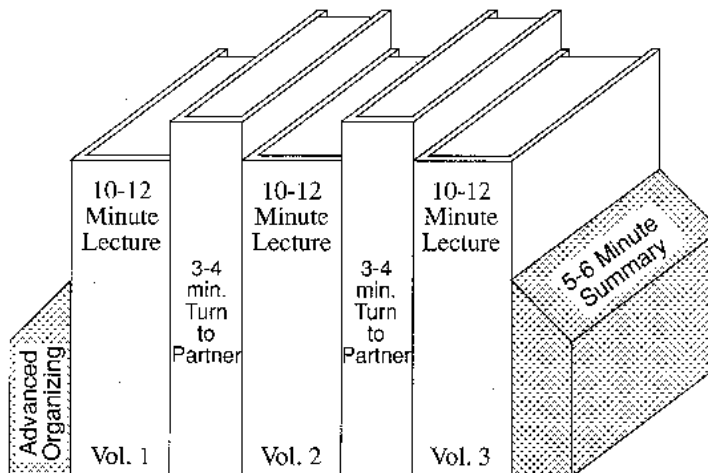
Smith, K.A. 2000. Going deeper: Formal small-group learning in large classes. Energizing large classes: From small groups to learning communities. *New Directions for Teaching and Learning*, 2000, 81, 25-46. [NDTL81Ch3GoingDeeper.pdf]

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Informal Cooperative Learning Groups

Can be used at any time

Can be short term and ad hoc

May be used to break up a long lecture

Provides an opportunity for students to process material they have been listening to (Cognitive Rehearsal)

Are especially effective in large lectures

Include "book ends" procedure

Are not as effective as Formal Cooperative Learning or Cooperative Base Groups

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"It could well be that faculty members of the twenty-first century college or university will find it necessary to set aside their roles as teachers and instead become **designers** of learning experiences, processes, and environments."

James Duderstadt, 1999
Nuclear Engineering Professor; Former Dean, Provost and President of the University of Michigan

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Pedagogies of Engagement

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What is your experience with course (re)design?

1. Little 1
2. Between 1&3
3. Moderate 3
4. Between 3&5
5. Extensive 5

Record your response (1, 2, 3, 4 or 5) on a Post-It note and add it to the histogram

30

What do you already know about course design?

<u>Short Answer Questions</u>

What do you feel are important considerations about course (re)design?

What are challenges you have faced with course (re)design?

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Course Design Foundations

Science of Instruction (UbD)

	No	**Yes**
Yes	Good Theory/ Poor Practice	Good Theory & Good Practice
No		Good Practice/ Poor Theory

Science of Learning (HPL)
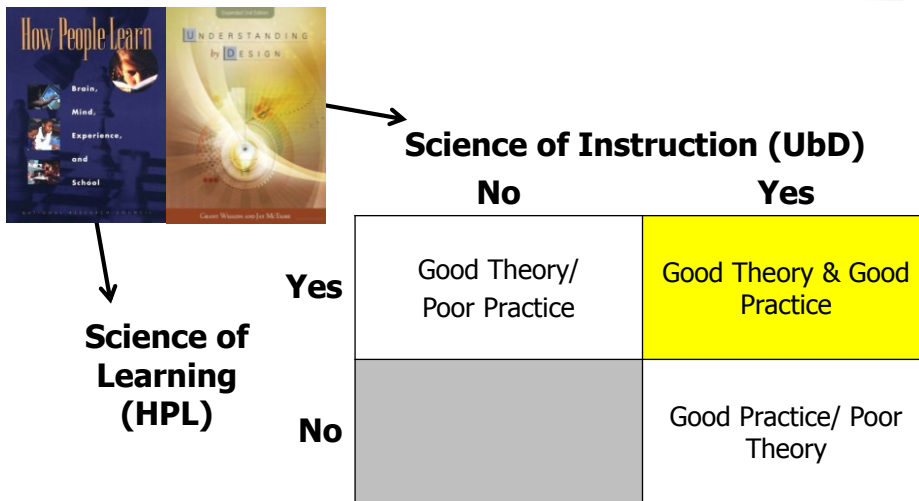
Bransford, Brown & Cocking. 1999. *How People Learn.* National Academy Press.
Wiggins & McTighe, 2005. *Understanding by Design, 2ed*. ASCD.

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The Big Picture (Good Learning Theory and Good Instructional Practice)
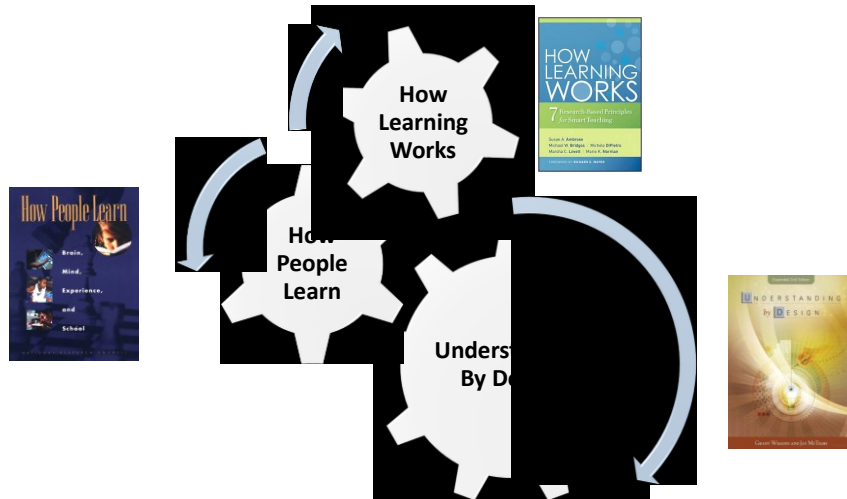
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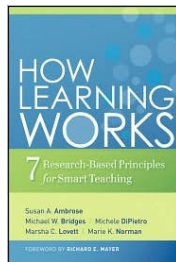
1. Students prior knowledge can help or hinder learning
2. How student organize knowledge influences how they learn and apply what they know
3. Students' motivation determines, directs, and sustains what they do to learn
4. To develop mastery, students must acquire component skills, practice integrating them, and know when to apply what they have learned
5. Goal-directed practice coupled with targeted feedback enhances the quality of students' learning
6. Students' current level of development interacts with the social, emotional, and intellectual climate of the course to impact learning
7. To become self-directed learners, students must learn to monitor and adjust their approach to learning

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How People Learn

HPL Framework
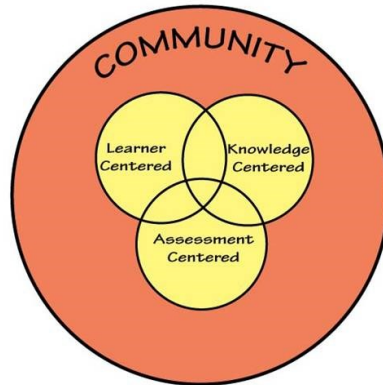
Expertise implies (Ch. 2):

◦ a set of cognitive and metacognitive skills

◦ an organized body of knowledge that is deep and contextualized

◦ an ability to notice patterns of information in a new situation

◦ flexibility in retrieving and applying that knowledge to a new problem

Bransford, Brown & Cocking. 1999. *How people learn.* National Academy Press.　35

Concept: Curricular Priorities
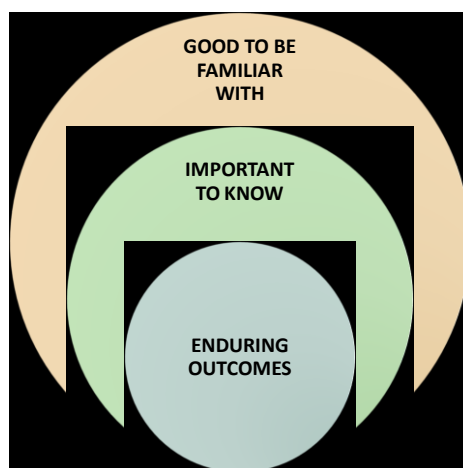
Things to Consider:

• Are the topics **enduring and transferable** big ideas having value beyond the classroom?

• Are the topics big ideas and **core processes** at the heart of the discipline?

• Are the topics **abstract, counterintuitive, often misunderstood, or easily misunderstood** ideas requiring uncoverage?

• Are the topics big ideas **embedded in facts, skills and activities**?

Understanding by Design, Wiggins and McTighe (1998)　36

Identifying Big Ideas - Exercise

Individually identify 2-3 big ideas in a course you are designing or re-designing. Write them down. ~2 min

Break into pairs to discuss ~3 min

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Teamwork and LDR 101 or any course

1. Rationale for teamwork in your course
2. Characteristics of effective teamwork
3. Teamwork research
4. Structuring teamwork

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Rationale for Teamwork

Several of the learning objectives in our new Gen Ed curriculum emphasize teamwork, e.g., "recognize, analyze, and employ effective teamwork."

LRD 101 focuses on "four fundamental and leadership skills" – critical thinking, writing, public speaking, and **teamwork**.

What is your rationale for incorporating **teamwork?**

Record your rationale and your conference (Natural Science and Math, Social Science, Humanities, or Creative Arts) on a Post It Note and place it one of the Teamwork Rationale Diagrams

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Education for Life and Work
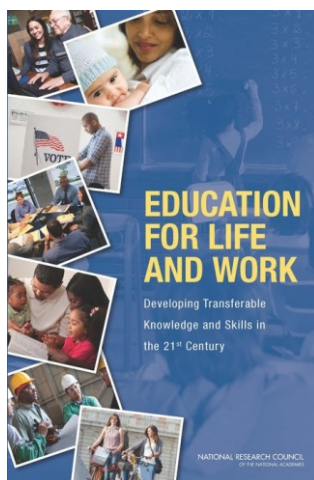
1. Introduction 15
2. A Preliminary Classification of Skills and Abilities 21
3. Importance of Deeper Learning and 21st Century Skills 37
4. Perspectives on Deeper Learning 69
5. Deeper Learning of English Language Arts, Mathematics, and Science 101
6. Teaching and Assessing for Transfer 143
7. Systems to Support Deeper Learning 185

http://www.nap.edu/catalog/13398/education-for-life-and-work-developing-transferable-knowledge-and-skills 40

Learning Outcomes Four in Five Employers Rate as Very Important
*(Proportion of employers who rate each outcome
an 8, 9, or 10 on a zero-to-10 scale)*

	Employers %
The ability to effectively communicate orally	85
The ability to work effectively with others in teams	83
The ability to effectively communicate in writing	82
Ethical judgment and decision-making	81
Critical thinking and analytical reasoning skills	81
The ability to apply knowledge and skills to real-world settings	80

http://www.aacu.org/leap/public-opinion-research/2015-survey-results

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The College Degrees And Skills Employers Most Want In 2015 (National Association of Colleges and Employers (NACE))

The NACE survey also asked employers to rate **the skills they most value in new hires**. Companies want candidates who can think critically, solve problems, work in a team, maintain a professional demeanor and demonstrate a strong work ethic. Here is the ranking in order of importance:

Competency	Essential Need Rating*
Critical Thinking/Problem Solving	4.7
Teamwork	4.6
Professionalism/Work Ethic	4.5
Oral/Written Communications	4.4
Information Technology Application	3.9
Leadership	3.9
Career Management	3.6

*Weighted average. Based on a 5-point scale where 1=Not essential, 2=Not very essential; 3=Somewhat essential; 4=Essential; 5=Absolutely essential

http://www.forbes.com/sites/susanadams/2015/04/15/the-college-degrees-and-skills-employers-most-want-in-2015/

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Top Three Main Engineering Work Activities

Engineering Total

Design – 36%

Computer applications – 31%

Management – 29%

Civil/Architectural

Management – 45%

Design – 39%

Computer applications – 20%

Burton, L., Parker, L, & LeBold, W. 1998. U.S. engineering career trends. *ASEE Prism*, *7*(9), 18-21.
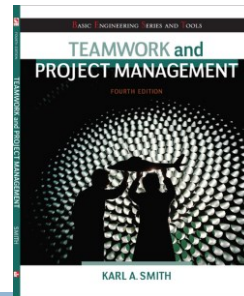
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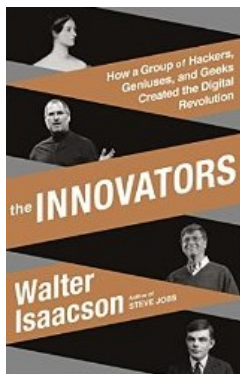
This is the story of these pioneers, hackers, inventors, and entrepreneurs – who they were, how their minds worked, and what made them so creative. It's also a narrative of **how they collaborated and why their ability to work as teams made them even *more* creative.** The tale of their teamwork is important because we don't often focus on how central that skill is to innovation.

Teamwork

PERFORMANCE LEVEL

High-performing Cooperative Group

Cooperative Group

Individual Members

Traditional Group

Pseudo-group

TYPE OF GROUP

45
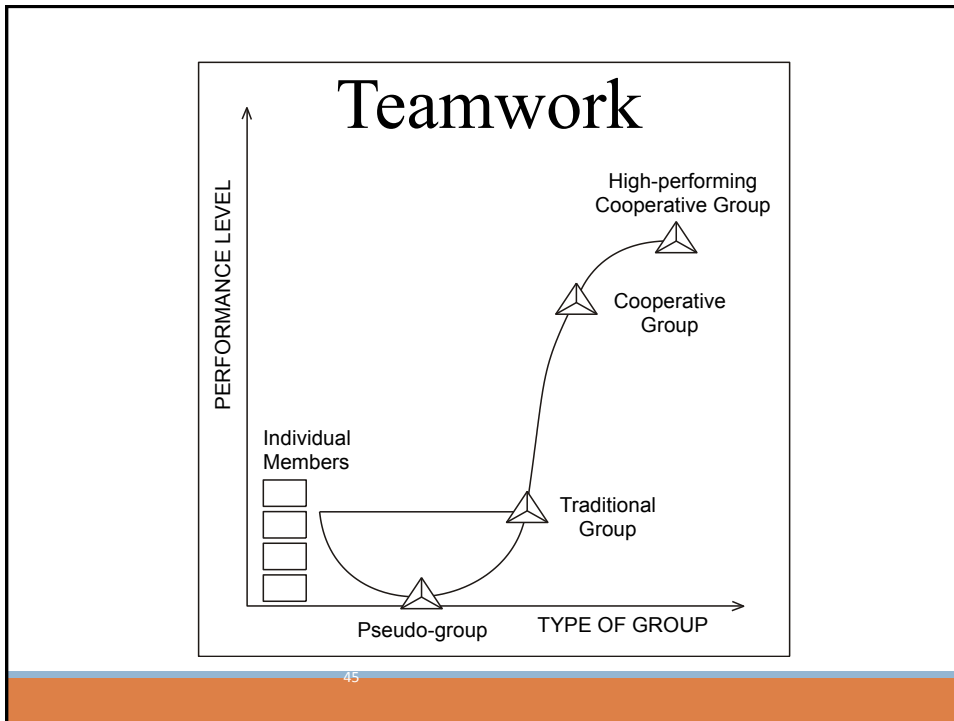
Reflection and Dialogue

Individually reflect on the Characteristics of High Performing Teams. Think/Write for about 1 minute
◦ Based on your experience on high performing teams,
◦ Or your facilitation of high performing teams in your classes,
◦ Or your imagination

Discuss with your team for about 3 minutes and record a list

Characteristics of Effective Teams?

- common goals
- Complementary strengths
- Division of labor / self selected roles
- Trust and respect
- Diverse skill set
- Common goals, flexible process with facilitator
- All contributed and brought in insight
- More engaged with the problem than the rules
- Willing to seek help from a resource / party outside the group
- Ego management
- Disagree in supportive ways
- Accomplishes the goal/completes the task
- Leadership
- Right balance between meta and productivity
- Fun or at least a positive attitude
- Willingness to let other provide leadership
- Flexibiity in roles
- Depending on the task, confidentiality
- ?

Team: Key Elements – Katzenbach and Smith (1993)

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

- SMALL NUMBER

- COMPLEMENTARY SKILLS

- COMMON PURPOSE & PERFORMANCE GOALS

- COMMON APPROACH

- MUTUAL ACCOUNTABILITY

--Katzenbach & Smith (1993)
The Wisdom of Teams

Cooperative Learning is instruction that involves people working in teams to accomplish a common goal, under conditions that involve both *positive interdependence* (all members must cooperate to complete the task) and *individual and group accountability* (each member is accountable for the complete final outcome).

Key Concepts

- Positive Interdependence
- Individual and Group Accountability
- Face-to-Face Promotive Interaction
- Teamwork Skills
- Group Processing

http://personal.cege.umn.edu/~smith/links.html   49

Six Basic Principles of Team Design

Keep membership small

Ensure that members have complimentary skills

Develop a common purpose

Set common goals

Establish a commonly agreed upon working approach

Integrate mutual and individual accountability

Katzenbach & Smith (2001) *The Discipline of Teams*

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Hackman – Leading Teams
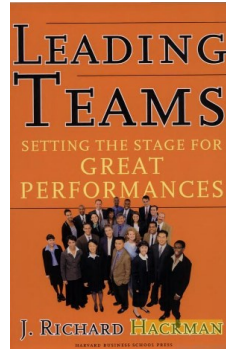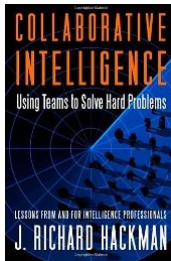
Real Team

Compelling Direction

Enabling Structure

Supportive Organizational Context

Available Expert Coaching

Team Diagnostic Survey (TDS)
https://research.wjh.harvard.edu/TDS/

Real Team

clear boundaries

team members are **interdependent** for some **common purpose**, producing a potentially assessable outcome for which members bear **collective responsibility**

at least moderate stability of membership

Compelling Direction

Good team direction is:
◦ challenging (which energizes members)
◦ clear (which orients them to their main purposes)
◦ consequential (which engages the full range of their talents)

Enabling Structure

Key structural features in fostering competent teamwork
◦ **Task design**: The team task should be well aligned with the team's purpose and have a high standing on "motivating potential."
◦ **Team composition**: The team size should be as small as possible given the work to be accomplished, should include members with ample task and interpersonal skills, and should consist of a good diversity of membership
◦ **Core norms of conduct**: Team should have established early in its life clear and explicit specification of the basic norms of conduct for member behavior.

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Edmondson - *Teaming*
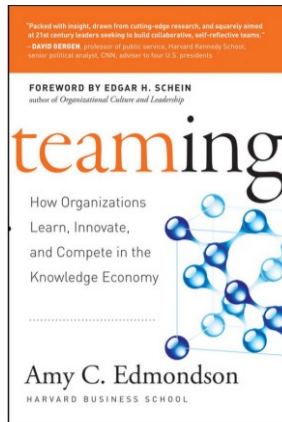
"Teaming is the engine of organizational learning."

Learning to team, teaming to learn

Teaming process (bottom-up)
- Teaming mindset adopted
- Reflection/feedback
- Interdependent action unfolds
- Coordination of steps and hand-offs
- Individuals communicate
- Recognize need for teaming

Four pillars of effective teaming
- Speaking up
- Collaboration
- Experimentation
- Reflection

Teamwork on the Fly

1. Speak Up
2. Listen intensely
3. Integrate different facts and points of view
4. Experiment interactively
5. Reflect on your ideas and actions

https://www.youtube.com/watch?v=pV15JvPwOOE

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The New Science of Building Great Teams

The chemistry of high-performing groups is no longer a mystery.
by Alex "Sandy" Pentland

Successful teams share several defining characteristics:
1. Everyone on the team talks and listens in roughly equal measure, keeping communication short and sweet.
2. Members face one another, and their conversations and gestures are energetic.
3. Members connect directly with one another – not just with the team leader
4. Members carry on back-channel or side conversations.
5. Members periodically break, go exploring outside the team, and bring information back.

The most valuable form of communication is face-to-face. E-mail and texting are least valuable. Pentland (2012)

https://hbr.org/2012/04/the-new-science-of-building-great-teams

Structuring Teamwork in the Classroom

Formal Cooperative Learning Task Groups

Active Learning:
Cooperation in the College Classroom

Informal Cooperative Learning Groups

→ **Formal** Cooperative Learning Groups

Cooperative **Base** Groups

Notes: Cooperative Learning Handout (CL-College-814.doc)
[CL-College-814.doc]

Third Edition

ACTIVE LEARNING:
COOPERATION IN THE COLLEGE CLASSROOM

David W. Johnson
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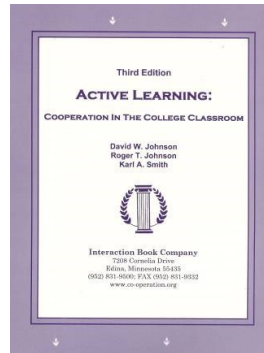
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Instructor's Role in Formal Cooperative Learning

1. Specifying Objectives

2. Making Decisions

3. Explaining Task, Positive Interdependence, and Individual Accountability

4. Monitoring and Intervening to Teach Skills

5. Evaluating Students' Achievement and Group Effectiveness

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Decisions,Decisions

Group size?
Group selection?
Group member roles?
How long to leave groups together?
Arranging the room?
Providing materials?
Time allocation?

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Optimal Group Size?

A. 2
B. 3
C. 4
D. 5
E. 6

0%	0%	0%	0%	0%
2	3	4	5	6
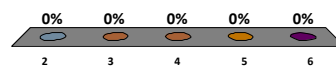
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Formal Cooperative Learning Task Groups

Perkins, David. 2003. *King Arthur's Round Table: How collaborative conversations create smart organizations.* NY: Wiley.
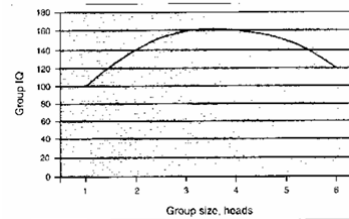
Group Selection?

A. Self selection
B. Random selection
C. Stratified random
D. Instructor assign
E. Interest
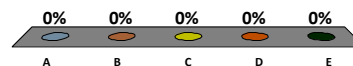
0%	0%	0%	0%	0%
A	B	C	D	E

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Session Summary (Minute Paper)

Reflect on the session

1. Most interesting, valuable, useful thing you learned.
2. Things that helped you learn.
3. Question, comments, suggestions.
4. Pace: Too slow 1 2 3 4 5 Too fast
5. Relevance: Little 1 2 3 4 5 Lots
6. Instructional Format: Ugh 1 2 3 4 5 Ah

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Agnes Scott College - Workshop (5-11-15)
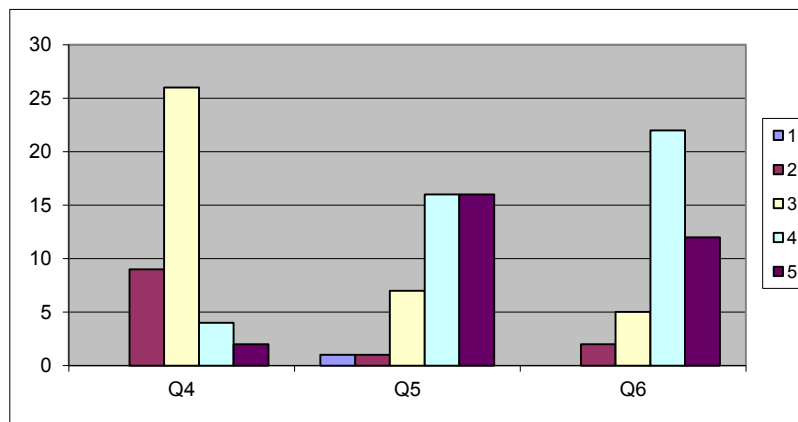
Q4 – Pace: Too slow 1 . . . . 5 Too fast (3.0)
Q5 – Relevance: Little 1 . . . 5 Lots (4.1)
Q6 – Format: Ugh 1 . . . 5 Ah (4.1)

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Formal Cooperative Learning – Types of Tasks

1. **Problem Solving, Project, or Presentation**
2. **Jigsaw – Learning new conceptual/procedural material**
3. **Group Tests**
4. Review/Correct Homework
5. Peer Composition or Editing
6. Reading Comprehension/Interpretation
7. Constructive Controversy

Challenge-Based Learning

Problem-based learning

Case-based learning

Project-based learning

Learning by design

Inquiry learning

Anchored instruction

John Bransford, Nancy Vye and Helen Bateman. Creating High-Quality
Learning Environments: Guidelines from Research on How People Learn

http://books.nap.edu/openbook.php?record_id=10239&page=159   68

Challenge-Based Learning

The Challenges

Go Public

Generate Ideas

Test Your Mettle

Multiple Perspectives

Research & Revise

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Cooperative Problem-Based Learning Format

TASK: Solve the problem(s) or Complete the project.

INDIVIDUAL: Develop ideas, Initial Model, Estimate, etc. Note strategy.

COOPERATIVE: One set of answers from the group, strive for agreement, make sure everyone is able to explain the strategies used to solve each problem.

EXPECTED CRITERIA FOR SUCCESS: Everyone must be able to explain the model and strategies used to solve each problem.

EVALUATION: Best answer within available resources or constraints.

INDIVIDUAL ACCOUNTABILITY: One member from your group may be randomly chosen to explain (a) the answer and (b) how to solve each problem.

EXPECTED BEHAVIORS: Active participating, checking, encouraging, and elaborating by all members.

INTERGROUP COOPERATION: Whenever it is helpful, check procedures, answers, and strategies with another group.

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Team Decision Making – Ranking Tasks

Typically "survival" tasks
◦ First was Moon Survival, "Lost on the moon" developed by Jay Hall for NASA in 1967
◦ Many survival tasks available – desert survival, lost at sea, winter survival, …

Individual followed by team ranking

Different decision-making conditions in each team

Team Member Roles

Facilitator/Time Keeper

Process Recorder

Task Recorder

Skeptic/Prober

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Teamwork Skills

- •Communication
- • Listening and Persuading
- •Decision Making
- •Conflict Management
- •Leadership
- •Trust and Loyalty

Team Decision Making…
World Mortality Causes

Below in alphabetical order, are listed the top causes of death in the world in 2012. The data were taken from the World Health Organization (WHO) Report. Your task is to rank them in order. Place the number 1 next to the item that is the most frequent cause of death, the number 2 next to the item that is the second most frequent, and so on. Then, in the last column, write in your estimate of the number of death per year.

To Group Members: TASKS
1. Individually determine the ranking.
2. Determine one ranking for the group.
3. Every group member must be able to explain the rationale for the group's ranking.
4. When your group finishes (each member has signed), (a) record your estimated number of fatalities in the World for each, and then (b) compare your ranking with that of another group.

World Mortality Causes

Product or Activity	Ranking	Number of Fatalities

Chronic obstructive pulmonary disease
Diabetes mellitus
Diarrheal diseases
Heart Disease
HIV/AIDS
Hypertensive heart disease
Lower respiratory infections
Road traffic accidents
Stroke

World Mortality Causes - 2012

Cause of Death	Ranking	Number of Fatalities (million)
Chronic obstructive pulmonary disease	3	3.1
Diabetes mellitus	8	1.5
Diarrheal diseases	7	1.5
Ischaemic Heart Disease	1	7.4
HIV/AIDS	6	1.5
Hypertensive heart disease	10	1.1
Lower respiratory infections	4	3.1
Road traffic accidents	9	1.3
Stroke	2	6.7
Trachea bronchus, lung disease	5	1.6

http://www.who.int/mediacentre/factsheets/fs310/en/

Group Processing
Plus/Delta Format

Plus (+) Things That Group Did Well	Delta (Δ) Things Group Could Improve

---

Team Decision-Making Process

How
◦ Individual
◦ Mathematical
◦ Consensus
◦ Iterative – H, M, L
◦ Both ends toward the middle

Assumptions/Biases
◦ Family/Friends
◦ News
◦ Youth
◦ Geographic location

Methods of Decision Making
(Johnson & Johnson, 1991)

1. Decision by authority without discussion
2. Expert member
3. Average of member's opinions
4. Decision by authority after discussion
5. Majority control
6. Minority control
7. Consensus

See Table Summarizing Characteristics – Smith (20014), pp. 69-70

Johnson, D.W. & Johnson, F.P. 1991. *Joining together: Group theory and group skills.* Prentice-Hall
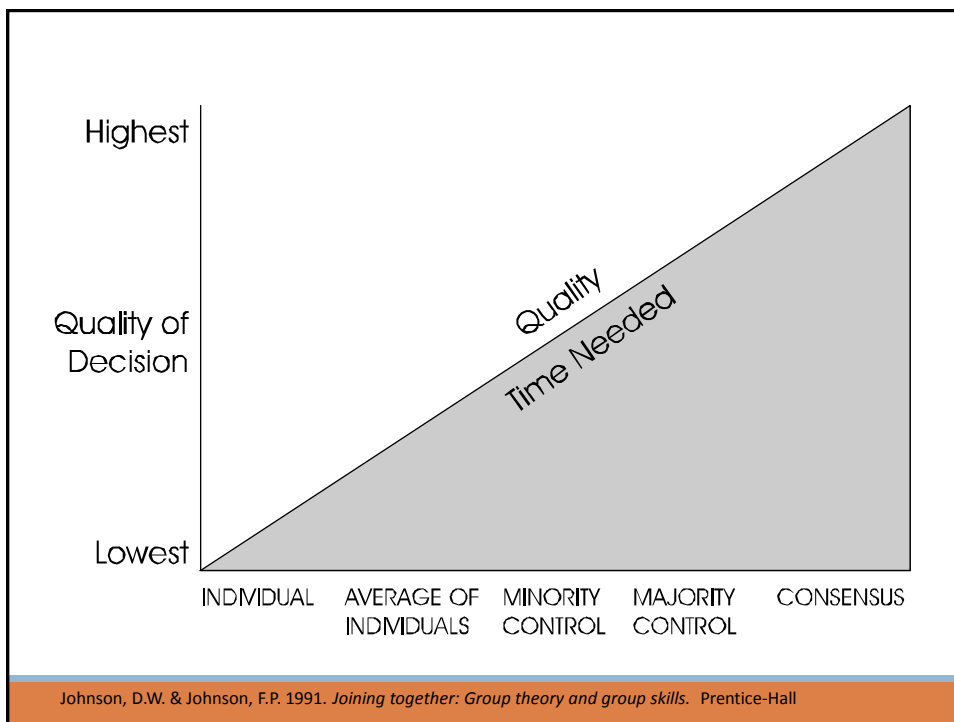
Choice of Decision-Making Method Depends On:

1. The type of decision to be made.
2. The amount of time and resources available.
3. The history of the group.
4. The nature of the task being worked on
5. The kind of climate the groups wishes to establish
6. The type of setting in which the group is working

Johnson & Johnson, 1991

Characteristics of Effective Decisions:

1. The resources of the group members are well used.
2. Time is well used.
3. The decision is correct, or of high quality.
4. The decision is put into effect fully by all the necessary members' commitment.
5. The problem-solving ability of the group is enhanced.

Johnson & Johnson, 1991

Team Charter

- Team name, members, and roles
- Team Mission Statement
- Anticipated results (goals)
- Specific tactical objectives
- **Ground rules/Guiding principles for team participation**
- Shared expectations/aspirations

Team Charter Examples & Research

Team Charter – Developed by Vivian Corwin and Marilyn A. Uy for COM 321 (Organizational Behaviour) Gustavson School of Business, University of Victoria

Group Ground Rules Contract Form – Developed by Deborah Allan, University of Delaware

Mathieu, John E. & Rapp, Tammy L. 2009. Laying the foundation for successful team performance trajectories: The role of team charters and performance strategies. *Journal of Applied Psychology, 94*(1), 90-103

Group Ground Rules Contract Form
(Adapted from a form developed by Dr. Deborah Allen, University of Delaware)

Project groups are an effective aid to learning, but to work best they require that all groups members clearly understand their responsibilities to one another. These project group ground rules describe the general responsibilities of every member to the group. You can adopt additional ground rules if your group believes they are needed. Your signature on this contract form signifies your commitment to adhere to these rules and expectations.

All group members agree to:
1. Come to class and team meetings on time.
2. Come to class and team meetings with assignments and other necessary preparations done.

Additional ground rules:
1.

2.

If a member of the project team repeatedly fails to meet these ground rules, other members of the group are expected to take the following actions:

Step 1: (fill in this step with your group)

    If not resolved:
Step 2: Bring the issue to the attention of the teaching team.
    If not resolved:
Step 3: Meet as a group with the teaching team.

The teaching team reserves the right to make the final decisions to resolve difficulties that arise within the groups. Before this becomes necessary, the team should try to find a fair and equitable solution to the problem.

Member's Signatures: Group Number:_____

1._____   3._____

2._____   4._____

TEAMWORK VALUE RUBRIC

for more information, please contact value@aacu.org

Definition

Teamwork is behaviors under the control of individual team members (effort they put into team tasks, their manner of interacting with others on team, and the quantity and quality of contributions they make to team discussions.)

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

	Capstone 4	Milestones 3	Milestones 2	Benchmark 1
Contributes to Team Meetings	Helps the team move forward by articulating the merits of alternative ideas or proposals.	Offers alternative solutions or courses of action that build on the ideas of others.	Offers new suggestions to advance the work of the group.	Shares ideas but does not advance the work of the group.
Facilitates the Contributions of Team Members	Engages team members in ways that facilitate their contributions to meetings by both constructively building upon or synthesizing the contributions of others as well as noticing when someone is not participating and inviting them to engage.	Engages team members in ways that facilitate their contributions to meetings by constructively building upon or synthesizing the contributions of others.	Engages team members in ways that facilitate their contributions to meetings by restating the views of other team members and/or asking questions for clarification.	Engages team members by taking turns and listening to others without interrupting.
Individual Contributions Outside of Team Meetings	Completes all assigned tasks by deadline; work accomplished is thorough, comprehensive, and advances the project. Proactively helps other team members complete their assigned tasks to a similar level of excellence.	Completes all assigned tasks by deadline; work accomplished is thorough, comprehensive, and advances the project.	Completes all assigned tasks by deadline; work accomplished advances the project.	Completes all assigned tasks by deadline.
Fosters Constructive Team Climate	Supports a constructive team climate by doing all of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members.	Supports a constructive team climate by doing any three of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members.	Supports a constructive team climate by doing any two of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members.	Supports a constructive team climate by doing any one of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members.
Responds to Conflict	Addresses destructive conflict directly and constructively, helping to manage/resolve it in a way that strengthens overall team cohesiveness and future effectiveness.	Identifies and acknowledges conflict and stays engaged with it.	Redirecting focus toward common ground, toward task at hand (away from conflict).	Passively accepts alternate viewpoints/ideas/opinions.

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Inside an Active Learning Classroom

STSS at the University of Minnesota

http://vimeo.com/andyub/activeclassroom

http://youtu.be/lfT_hoiuY8w

"I love this space! It makes me feel appreciated as a student, and I feel intellectually invigorated when I work and learn in it."

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Cooperative Jigsaw

JIGSAW SCHEDULE

COOPERATIVE GROUPS (3-4 members)

PREPARATION PAIRS

CONSULTING/SHARING PAIRS

TEACHING/LEARNING IN COOPERATIVE GROUPS

WHOLE CLASS REVIEW

www.jigsaw.org/

Cooperative Jigsaw Objectives

Participants will be able to list and describe features of each article

Participants will be able to elaborate on characteristics of high performing teams

Participants will identify features to implement in their classes

Jigsaw Schedule

Preparation ~ 20 min
◦ Individual skim ~10 min
◦ Discuss with partner ~10 min

Teach & Learn ~ 20 min
◦ Article 1 ~ 5 min
◦ Article 2 ~ 5 min
◦ Article 3 ~ 5 min
◦ Article 4 ~ 5 min

Whole Group Discussion ~ 10 min
◦ Key points/BIG ideas from each article

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Teamwork Jigsaw:

- Article 1 [Cheruvelil, et.al. – Creating and maintaining high-performing…]
- Article 2 [Edmondson – Teamwork on the fly]
- Article 3 [Sunstein & Hastie – Making dumb groups smarter]
- Article 4 [Guinier – Ch. 6 – Tyranny of the meritocracy]

Preparation Pairs

TASKS:
    a. Master Assigned Material – Skim Article
    b. Plan How to Teach It To Group

PREPARE TO TEACH:
    a. List Major Points You Wish to Teach – 3 – 5 points
    b. List Practical Advice Related to Major Points
    c. Prepare Visual Aids/Graphical Organizers
    d. Prepare Procedure to Make Learners Active, Not Passive

COOPERATIVE: One Teaching Plan From The Two Of You, Both Of You Must Be Ready to Teach

Processing

Please complete the sentence:

One thing you did that helped me learn was . . .

Consulting/Practice Pairs

TASKS:
1. Find Someone Who Prepared To Teach the Same Article
2. Prepare Your Teaching Plan
3. Listen Carefully To Other's Teaching Plan
4. Incorporate Other's Best Ideas Into Your Plan

COOPERATIVE: Ensure Both of You Are Ready to Teach

Teach and Learn Group

TASK: Learn ALL the Material (All four articles)

COOPERATIVE:
      Goal: Ensure All Group Members Understand All Sections of Material
      Resource: Each Member Has One Part
      Roles: Teach, Learn

EXPECTED CRITERIA FOR SUCCESS: Everyone learns and teaches an area of expertise,
Everyone learns others' area of expertise, Everyone summarizes and synthesizes

INDIVIDUAL ACCOUNTABILITY:
   Professor Monitors Participation of All Learners
   Team members check for understanding
   Individual implementation

EXPECTED BEHAVIORS: Good Teaching, Excellent Learning, Summarizing, Synthesizing

INTERGROUP COOPERATION: Whenever it is helpful, check procedures, answers, and
strategies with another group.

Jigsaw -- Role of Listening Members

Clarify material by asking questions

Suggest creative ways to learn ideas and facts

Relate information to other strategies and elaborate

Present practical applications of information

Keep track of time

Appropriate Humor

Jigsaw Processing

Things We Liked About It	Traps to Watch Out For

Cooperative Jigsaw

Jigsaw Classroom

Welcome to the official web site of the jigsaw classroom, a cooperative learning technique that reduces racial conflict among school children, promotes better learning, improves student motivation, and increases enjoyment of the learning experience. The jigsaw technique was first developed in the early 1970s by Elliot Aronson and his students at the University of Texas and the University of California. Since then, hundreds of schools have used the jigsaw classroom with great success. The jigsaw approach is considered to be a particularly valuable tool in averting tragic events such as the Columbine massacre.
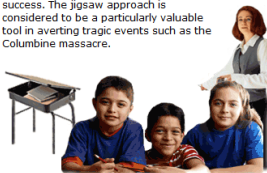
Explore the Jigsaw Classroom:
- Overview of the Technique
- History of the Jigsaw Classroom
- Jigsaw in 10 Easy Steps
- Tips on Implementation
- Books and Articles Related to the Jigsaw Technique
- Chapter 1 of Aronson's Book "Nobody Left to Hate: Teaching Compassion After Columbine"
- Links on Cooperative Learning and School Violence
- About Elliot Aronson and This Web Site

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Web Site © 2000-2013, Social Psychology Network

Site Statistics
Deutsche Übersetzung

JIGSAW SCHEDULE

COOPERATIVE GROUPS (3-4 members)

PREPARATION PAIRS

CONSULTING/SHARING PAIRS

TEACHING/LEARNING IN COOPERATIVE GROUPS

WHOLE CLASS REVIEW

www.jigsaw.org/

Cooperative Learning is instruction that involves people working in teams to accomplish a common goal, under conditions that involve both *positive interdependence* (all members must cooperate to complete the task) and *individual and group accountability* (each member is accountable for the complete final outcome).

Key Concepts

- Positive Interdependence
- Individual and Group Accountability
- Face-to-Face Promotive Interaction
- Teamwork Skills
- Group Processing

Active Learning: Cooperation in the College Classroom

Informal Cooperative Learning Groups

Formal Cooperative Learning Groups

Cooperative **Base** Groups

See Cooperative Learning Handout (CL College-912.doc)
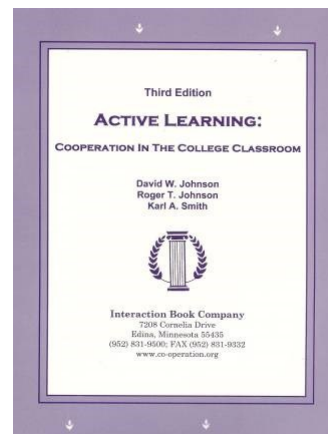
Cooperative Base Groups

Are Heterogeneous

Are Long Term (at least one quarter or semester)

Are Small (3-5 members)

Are for support

May meet at the beginning of each session or may meet between sessions

Review for quizzes, tests, etc. together

Share resources, references, etc. for individual projects

Provide a means for covering for absentees

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Edmonson-Competitive_Advantage_of_Learning-HBR-2008.pdf

Creative Performance From Students
(& Faculty) Requires Maintaining
a Creative Tension Between

Challenge and Security

Pelz, Donald, and Andrews, Frank. 1966. Scientists in Organizations: Productive Climates for Research and Development. Ann Arbor: Institute for Social Research, University of Michigan.

Pelz, Donald. 1976. Environments for creative performance within universities. In Samuel Messick (Ed.), Individuality in learning, pp. 229-247. San Francisco: Jossey-Bass

Edmonson, A.C. 2008. The competitive advantage of learning. Harvard Business Review 86 (7/8): 60-67.

Designing and Implementing Cooperative Learning

Think like a designer

Ground practice in robust theoretical framework

Start small, start early and iterate

Celebrate the successes; problem-solve the failures

The Instructor's Role in Cooperative Learning

Make Pre-Instructional Decisions

Specify Academic and Teamwork Skills Objectives: Every lesson has both (a) academic and (b) interpersonal and small group (teamwork) skills objectives.

Decide on Group Size: Learning groups should be small (groups of two or three members, four at the most).

Decide on Group Composition (Assign Students to Groups): Assign students to groups randomly or select groups yourself. Usually you will wish to maximize the heterogeneity in each group.

Assign Roles: Structure student-student interaction by assigning roles such as Reader, Recorder, Encourager of Participation and Checker for Understanding.

Arrange the Room: Group members should be "knee to knee and eye to eye" but arranged so they all can see the instructor at the front of the room.

Plan Materials: Arrange materials to give a "sink or swim together" message. Give only one paper to the group or give each member part of the material to be learned.

Explain Task And Cooperative Structure

Explain the Academic Task: Explain the task, the objectives of the lesson, the concepts and principles students need to know to complete the assignment and the procedures they are to follow.

Explain the Criteria for Success: Student work should be evaluated on a criteria-referenced basis. Make clear your criteria for evaluating students' work.

*Structure Positive Interdependence: Students must believe they "sink or swim together." Always establish mutual goals (students are responsible for their own learning and the learning of all other group members). Supplement, goal interdependence with celebration/reward, resource, role, and identity interdependence.

Structure Intergroup Cooperation: Have groups check with and help other groups. Extend the benefits of cooperation to the whole class.

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*Structure Individual Accountability: Each student must feel responsible for doing his or her share of the work and helping the other group members. Ways to ensure accountability are frequent oral quizzes of group members picked at random, individual tests, and assigning a member the role of Checker for Understanding.

*Specify Expected Behaviors: The more specific you are about the behaviors you want to see in the groups, the more likely students will do them. Social skills may be classified as **forming** (staying with the group, using quiet voices), **functioning** (contributing, encouraging others to participate), **formulating** (summarizing, elaborating), and **fermenting** (criticizing ideas, asking for justification). Regularly teach the interpersonal and small group skills you wish to see used in the learning groups.

Monitor and Intervene

*Arrange Face-to-Face Promotive Interaction: Conduct the lesson in ways that ensure that students promote each other's success face-to-face.

Monitor Students' Behavior: This is the fun part! While students are working, you circulate to see whether they understand the assignment and the material, give immediate feedback and reinforcement, and praise good use of group skills. Collect observation data on each group and student.

Intervene to Improve Taskwork and Teamwork: Provide taskwork assistance (clarify, reteach) if students do not understand the assignment. Provide teamwork assistance if students are having difficulties in working together productively.

Evaluate and Process

Evaluate Student Learning: Assess and evaluate the quality and quantity of student learning. Involve students in the assessment process.

*Process Group Functioning: Ensure each student receives feedback, analyzes the data on group functioning, sets an improvement goal, and participates in a team celebration. Have groups routinely list three things they did well in working together and, done thing they will do better tomorrow. Summarize as a whole class. Have groups celebrate their success and hard work.

Cooperative Lesson Planning Form

Subject Area: _____ Date: _____

Lesson: _____

Objectives

Academic: _____

Social Skills: _____

Preinstructional Decisions

Group Size: _____ Method Of Assigning Students: _____

Roles: _____

Room Arrangement: _____

Materials: _____

◊ One Copy Per Group   ◊ One Copy Per Person

◊ Jigsaw   ◊ Tournament

◊ Other: _____

Explain Task And Cooperative Goal Structure

1. Task: _____
   _____

2. Criteria For Success: _____
   _____

3. Positive Interdependence: _____
   _____

4. Individual Accountability: _____

5. Intergroup Cooperation: _____

6. Expected Behaviors: _____

Monitoring And Intervening

1. Observation Procedure: _____ Formal _____ Informal

2. Observation By: _____ Teacher _____ Students _____ Visitors

3. Intervening For Task Assistance: _____
   _____

4. Intervening For Teamwork Assistance: _____
   _____

5. Other: _____

Evaluating And Processing

1. Assessment Of Members' Individual Learning: _____
   _____

2. Assessment Of Group Productivity: _____
   _____

3. Small Group Processing: _____
   _____

4. Whole Class Processing: _____
   _____

5. Charts And Graphs Used: _____
   _____

6. Positive Feedback To Each Student: _____
   _____

7. Goal Setting For Improvement: _____
   _____

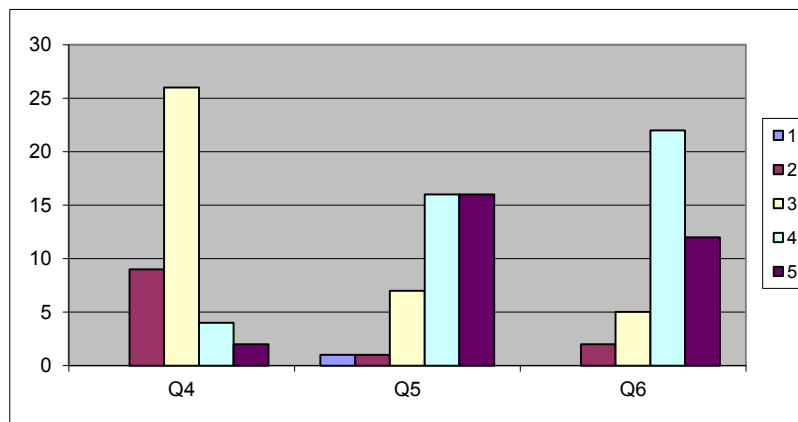8. Celebration: _____
   _____

9. Other: _____

Session Summary (Minute Paper)

Reflect on the session

1. Most interesting, valuable, useful thing you learned.
2. Things that helped you learn.
3. Question, comments, suggestions.
4. Pace: Too slow 1 2 3 4 5 Too fast
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Agnes Scott College - Workshop (5-11-15)

Q4 – Pace: Too slow 1 . . . . 5 Too fast (3.0)
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Q6 – Format: Ugh 1 . . . 5 Ah (4.1)

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