TEAMWORK WORKSHOP

ICOM5047
Design Project in Computer Engineering
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Reflection about groups

- Have you been a member of a team that got the job done (wrote the report, finished the project, completed the assignment) but that ended up with the members hating one another so intensely they never wanted to see each other again?

- What characteristics made the team fail?

Reflection about groups

- Lack of technical skills of some group members
- Feel insecure about participation
- Lack of communication
- Absenteeism
- Not assuming responsibility

Reflections about other types of groups

- Have you been a member of a team whose members really enjoyed one another's company and had a great time socially but in the end hadn't finished the project?

- What characteristics made the group fail or what were the reasons for failure taking into account that it was fun.

Reflections about effective teams

- Have you been a member of a team whose members really enjoyed one another's company and had a great time socially but this time finished the project?

- What characteristics made this team effective and successful?

Reflections about effective teams

- Started in a social activity
- Contributions from all members
- Motivation
- Like the work
- Go the extra mile
- Differ in opinions but manage the difference
- Trust
- Dynamism
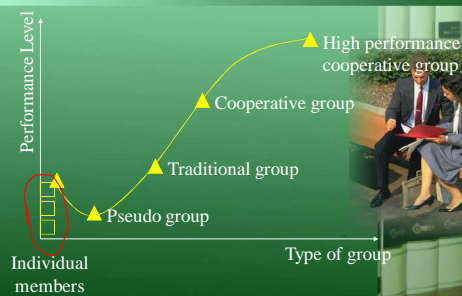- Know the members outside the work place

Reflection about effective teams

- Good participation
- Common goal
- Sense of purpose
- Leadership
- Members take responsibility
- Effective decision making
- Fun, liked to be there
- Careful listening
- Respect
- Good meeting facilitation
- Empowered members
- Constructively manage conflict

Kinds of Teams

- Pseudo teams
- Potential teams
- Real teams
- High-performing teams

Group Performance

Performance Level (y-axis)

Type of group (x-axis)

- High performance cooperative group
- Cooperative group
- Traditional group
- Pseudo group
- Individual members

Pseudo Learning Group

- Members are assigned to work together
- Members believe they will be ranked according to individual performance
- Members talk but they actually compete
- Probably would achieve more by working independently; they actually disrupt each other's work
- Members seek each other's information but do not teach what they have learned; there is not actual sharing

Cooperative Learning Groups

- Work is complex enough to require each other's cooperation
- Group's goal is maximize all member's learning
- Everyone is accountable
- Work face-to-face to produce joint work-products
- Members promote mutual success
- Analyze how effective they are achieving goals and how well they are working together

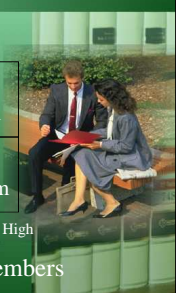## Cooperative learning

Puzzle Exercise

High Performance Cooperative Learning Groups

- Meets all criteria for being a cooperative group and outperforms reasonable expectations
- The difference is in level of commitment to each other and to the group
- Emotional binding
- Mutual concern for each other's personal growth
- Members actually have fun working with each other

Four types of teams

Specialization of tasks

High

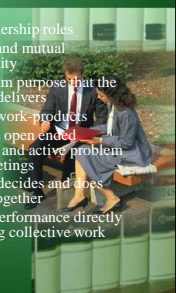|	
Type I Swim team	Type II Football team
Type III Bowling team	Type IV Volleyball team

Low High

Coordination between team members

Roles and Responsibilities

- Kinds of work
  - Core work: highly dependent on team goals
  - Coordinating work:
    - Training
    - Work scheduling
    - Budgeting
    - Interfacing with other departments/teams
    - Quality control
    - Performance measurement

Groups and Teams

Working Group
- Strong, clearly focused leader
- Individual accountability
- Group's purpose is the same as the broader organizational mission
- Individual work products
- Runs efficient meetings
- Discusses, decides and delegates
- Measures effectiveness indirectly by its influence on others

Team
- Shared leadership roles
- Individual and mutual accountability
- Specific team purpose that the team itself delivers
- Collective work-products
- Encourages open ended discussions and active problem solving meetings
- Discusses, decides and does real work together
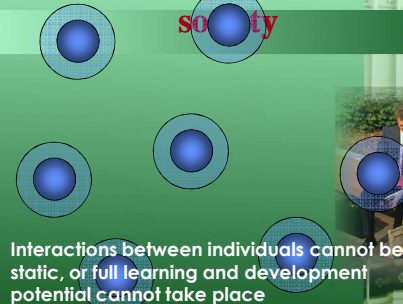- Measures performance directly by assessing collective work products

Knowledge, learning and society

Individual's current development level

Zone of Proximal Development

Zone of proximal development is the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with others.

L. S. Vigotsky. Interaction between learning and development. In *Mind in Society – The Development of Higher Psychological Processes*. Harvard University Press. 1978.
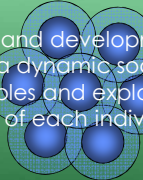
Knowledge, learning and society

Interactions between individuals cannot be static, or full learning and development potential cannot take place

Knowledge, learning and society

Learning and development take place in a dynamic social interaction that enables and exploits the full potential of each individual.

Diversity

What is diversity?

'*Collective diversity, or diversity of the group-the kind of diversity that people usually talk about- is just as essential to good engineering as individual diversity. At a fundamental level, men, women, ethnic minorities, racial minorities and people with handicaps, experience the world differently. Those differences in experience are the "gene pool" from which creativity springs*'

William A.Wolf, "Diversity in engineering". *Bridge* Vol 28 No. 4 pp 8-13. 1998

Building Team Performance

- ❑ Establish urgency and direction
- ❑ Select members based on skill and potential, not personalities
- ❑ Pay attention to first meeting and actions
- ❑ Set clear rules of behavior
- ❑ Set some immediate performance-oriented tasks and goals
- ❑ Challenge the group regularly with fresh information
- ❑ Spend lots of time together
- ❑ Exploit power of positive feedback, recogntition and reward

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Goals and metrics (score keeping)

- ❑Reasons for knowing and keeping score

  - ❑Motivate individual performance

  - ❑Basis for analyzing and making improvements to team

  - ❑Help focus team members on a common purpose and work together

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High Performance Teams Measuring Productivity

Productivity Exercise
- ❑Goal: build paper airplanes

- ❑Criteria
  - ❑An acceptable plane must be manufactured according to specification
  - ❑An acceptable plane must fly at least 20 feet

Final Reflection

"Education is an art of process, participation, and making connection. Learning is a growth and life process; and life and Nature are always relationships in process"

Medearis, C. and White Hat, A. *Mitakuye oyasin (We are all related in the Lakota tradition).* Collaboration for the Advancement of College Teaching and Learning Faculty Development. Minneapolis, MN. Nov. 1995 p. 1