

Team Selection and Operation

Selection of your team members may actually be the most important decision you make for your design project. The success of your work and your project depends critically on the ability of you and your team members to work together effectively. There is more work to do than time available to do it, so everyone in your team needs to work very hard to achieve a satisfactory result.

Most teams will function as a self-directed work group, without a leader. For this case, decisions are made collectively by the entire group. Some teams will prefer to assign a leader - this person should have leadership experience in working with a group.

Experience has shown that the most effective teams are ones with diversity - the collected experience of the team in this case is much more than the experiences from a less diverse team.

However, our experience has shown that the most effective teams have:

- Similar expectations with respect to performance. If one team member is determined to receive a high grade on their work, and the other team members are happy with a lower grade, then this may create a problem in the team.
- Similar work styles. Some individuals wait until the last minute to complete the work while some like to start early. Some team members may work better in the morning while some work later at night. This may create a problem for the team.

It is possible for a team to be effective even with these issues.

There are four steps to team formation, which usually occur in the following order:

Storming: During this stage the team members are all searching for a niche on the team. Conflict might arise during this stage since team members might vie for the same function or territory.

Norming: The team members work towards resolving the issues.

Forming: The issues are resolved and the team begins to form working relationships.

Performing: The team begins to work effectively on the problem at hand.

Your team must find a way to work through these steps as fast as possible to arrive at the performing stage. Teams that are incapable of working through these steps end up with unresolved issues - in some cases these issues may escalate and the team self destructs.

Team meetings should be arranged at a time convenient for everyone on the team. The team meetings should really be focused on making decisions and distributing the work, rather than doing the work together. Remember, no work is done at a meeting, only decisions are made.

Everyone on the team has something to contribute. It is best to identify the strengths and likes of each team member and to use these to the team's advantage. It is not advised that everyone do everything. For instance, a team member might excel at figure layout and drawing - this person should be given this task. Other team members might excel at writing, or library searches. Use the abilities of the teams members to the best advantage for the team.

Conflict will always arise in any team project. Conflict is actually good for a team since a difference of opinion will always result in a critical evaluation of the issue and a resolution that is almost always better. Conflict can be a problem if the team is unable to resolve the conflict, or if the conflict turns into a personal battle between team members.

Your team might actually consider writing a charter, which describes when the team will meet, the rules for operation, how conflicts are resolved, and other issues important to the team.

Self Directed Work Teams

Years ago, there were enough middle managers in a company that almost all teams included at least one upper manager. This person usually assumed leadership in the team and made decisions when the team was unable to reach consensus. Today, the number of middle managers in a company has been reduced to the point that managers are not likely to be present on the team - all of the team members are at the same level (although they may have different titles). This is called a **self directed work team**, since no one is present to take leadership. The team has two choices - they can elect a leader or work by consensus. Most groups seem to prefer to work by consensus. For this type of team to function, the team needs to reach consensus on how the work is to be divided and the rules of operation. It takes more effort for a self-directed work team to function since all of the decisions must be handled by consensus.

Chemical Engineering Design: Team Building Checklist

Your team might consider looking at this checklist from time to time to insure that your team is on track.

1. Potential obstacles or sources of conflict to working better as a team:
 - a. difficulty in arranging team meeting times
 - b. lack of course / team commitment
 - c. lack of preparation for team meetings
 - d. lack of time management
 - e. not listening to each other, poor communications
 - f. lack of trust
 - g. procrastination: waiting too late to start work
 - h. unrealistic expectations
 - i. over managing and controlling team effort
 - j. requiring "equal" contributions from all team members, based on your personal concept of "equal"
 - k. not sharing concerns / problems / resentments with other team members
 - l. forming side groups / cliques / alliances
 - m. different course grade expectations
 - n. different work styles / work times

2. Strategies for overcoming problems:
 - a. accept responsibility for assigned task and develop a plan of action to meet each objective
 - b. come to team meetings prepared (calculations made, outline prepared, etc.) to work
 - c. slow down and listen, not just hear, team members' concerns, comments, problems
 - d. try harder to avoid goofing off, don't waste team members' time, schedule "break" time in team meetings
 - e. be more flexible about scheduling, move meeting site around
 - f. do my own work ASAP and certainly before the team meets
 - g. discuss current results and their significance
 - h. cross-training of other team members in each function.
 - i. If I want to know what the instructor's requirements are, I'll ask him / her instead of depending on what a team member thinks

3. Dysfunctional behavior that prevents my team from working as a team:
 - a. lack of ownership of project as a whole
 - b. priorities not well understood or agreed to by everyone
 - c. lack of understanding of project objectives or requirements
 - d. idle chit-chat about unrelated issues in team meetings
 - e. goofing off, not paying attention in team meetings
 - f. inability to regularly schedule meetings that all can attend

4. Ways to overcome dysfunctional behavior:
 - a. acceptance of the idea that we are all responsible for the final results or design
 - b. spend more time discussing/planning what needs to be done at each phase of the project
 - c. ask the instructor about things / concepts / conditions we don't understand
 - d. set aside "break" times during team meetings
 - e. realize that not everyone needs to be simultaneously involved in every aspect of report writing, calculations, etc. It may be more time-effective to work as pairs or even as singles and get together as a team less frequently to share information.

5. Ways to tell whether the team is functioning effectively:
 - a. we reach consensus easily and feel good about that process
 - b. obvious acceptance of responsibility / accountability for work by team members without whining / grouching about work that needs to be done
 - c. members provide constructive criticism when reviewing each part of the report
 - d. everyone seems to be contributing equally, there is no free loader, and each individual is satisfied with the work of all the team members
 - e. total outside-of-class work / effort / time decreases because there is less squabbling or arguing and more cooperation
 - f. we develop and stick to a reasonable time schedule for producing the report

6. Things for me to work on if I am the team leader:
 - a. develop a plan for the whole project effort immediately after the assignment is made.
 - b. make certain that every team member understands his / her responsibilities for each phase of the project
 - c. develop patience and improve my listening skills - share concerns / problems / resentments with other teams members
 - d. recognize incipient breakdown in team behavior / performance and develop ways to counteract that behavior
 - e. getting the first draft of the report written in time for review before it must be submitted
 - f. listening more carefully to each team member

7. Things that I can do / personal behavior that I can change to ensure that all necessary material has been included in the report:
 - a. check to be certain that all objectives have been met
 - b. check to be sure that everything required has been included
 - c. ask the instructor about any comments / suggested changes that I don't understand
 - d. proofread the entire team-written parts of the report and my sections

Adapted from information provided by R. Bethea, Texas Tech University