ESSENTIAL ELEMENTS IN TEAMING: CREATION OF A TEAM RUBRIC

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EXECUTIVE SUMMARY

To further meet the needs of faculty and students at the University of Idaho in the College of Engineering, the Learning Environment Developers (a group of seven undergraduate mechanical engineering students known as Team LED) proposed to develop a rubric, a tool for growing teaming skills in the classroom.

Team LED developed an analytical trait rubric with four main traits on teaming. Each of these traits is described by 4 to 7 characteristics of performance. Specifically, three levels of performance are defined, and by inference, assessment of performance at five different levels can be measured.

DESCRIPTION OF THE PROBLEM

One of the top concerns of leaders in industry and academia is the ability of engineers to perform effectively in teams. A tool is needed to improve teaming skills and team performance. A rubric can be such a tool. Webster's online dictionary defines a rubric as, "an authoritative rule or direction" and "a short commentary or explanation covering a broad subject." The literature on rubrics describes them as documents that identify the key elements of a given performance and illustrate through examples what each level of performance looks like [1, 4]. Rubrics can be used to assess as well as to teach skills in the given performance.

Several University of Idaho mechanical engineering students attended an Assessment Training Institute conference in July 2002 and had been impressed by a presentation made by Dr. Judy Arter concerning the development of rubrics. With the encouragement of the faculty, the students formed a team and proposed developing a rubric on teaming for use with senior design classes in the College of Engineering.

LED worked with faculty advisors to establish a mutual understanding of project outcomes. When a working understanding of what each could expect from the other was achieved, team LED began the work of developing the first iteration of the rubric.

APPROACH AND METHODOLOGY

Process of Rubric Development

A good rubric, used instructionally, helps students know what it takes to be effective on a team. A study by the federally-funded Center for Research on Evaluation, Standards, and Student Testing at UCLA reports, "With training and practice, . . . it should be possible for students in a variety of collaborative settings to engage in productive helping behavior to maximize learning" [8].

Rubrics are best utilized in the classroom when the students can develop their own list of what good performance looks like and compare what their list with a list based on the literature. Essentially, the students will examine their list and compare it to the list accepted by experts in the field. This builds the ability of students to understand and use the language of the discipline. It also provides greater student involvement in the development of tools for assessment. When users have a voice product development, they are more likely to use it.

Quality rubrics are also presented to the user with several examples so that learners can be walked through the process of using the rubric before they are asked to use it on their peers. It is important that there be several examples of performance at each level of teaming.

Team LED brainstormed the essential elements of optimal team performance (Fig. 1). The list developed was quite long (between 40-50 items), so the elements were grouped into main categories based on their similarities. These categories became the main traits of the rubric to describe teaming.

Once the traits had been identified by the team, we developed an outline of the teaming rubric. Team LED reviewed this rubric several times to insure that the essential elements of team were best described. Once the rubric passed the team's expectations, it was compared to the literature on teaming studied up to that point.

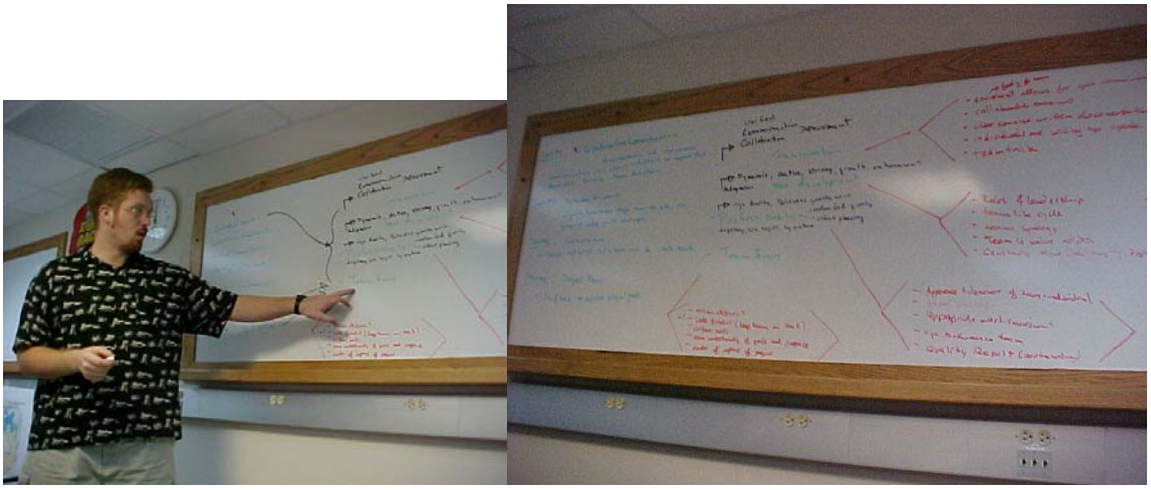

Figure 1 Robert Wiegers conducting an analysis and synthesis exercise.

Rubric Testing Process

To evaluate the first iteration of the rubric, team LED organized two focus group consisting of students, faculty, technicians, and administrative assistants to review the rubric (Appendix A).

Two 30-minute sessions were held Friday, August 9, 2002 (Fig. 1). The focus groups were provided a description of the project and the expected outcomes. Feedback forms to evaluate the rubric, developed by the team, were distributed and instructions given (see Appendix B). After completing the evaluation, the participants were given the opportunity to provide verbal feedback.

Figure 2 Jonathon Miller gives instructions to one focus group

Target Clarification and Project Re-Focus

With the newly collected data, Team LED recognized that several alterations and changes needed to be made. About this time in the project, LED inquired of Dr. Kyte, NIATT director, how important it was to him, on a scale of 1 to 10, ten being the most important) that the rubric reflects the current literature on teaming. His response was as follows: "That's a tough question for me to answer. I would expect the literature to be a good guide, but I would also expect you to bring in your own experience and good sense. So, I'd say, '7.'" Because of his response, Team LED conducted more research on teaming best practices.

Dr. Arter of the Assessment Training Institute generously supplied examples of rubrics related to teaming. To assure product quality, LED consulted Learner-Centered Assessment on College Campuses by Huba and Freed (2000). This text supports the methods described by Arter and provides additional insights into how to word the rubric so that it will help best prepare students for the professional world. Unlike Arter, Huba and Freed deal with the college level application of rubrics.

The rubric was altered to reflect the new research and reviewed by team LED. During the review, it became clear that a single rubric would not be as valuable as one worded for use by the

team collectively and another, similar, rubric with verbiage promoting individual assessment of teaming skills. In this process, the need for a "user friendly" format was also identified and the rubric organization in matrix form was adopted.

Final Product

The final rubric (Appendix C) identifies the essential traits of teaming. On the first page, a brief guide for the rubric's use is given. Each of the following pages addresses one of five essential traits of teaming. Traits are the overarching key elements present in all successful team performance. Ideally, if mastery of these traits as defined by their characteristics achieved, the team will be a high performance team. To help define each trait, one or more guiding questions are presented.

Each trait is defined by several (four to nine) characteristics. The evaluator uses characteristics to specifically measure a team's performance. Descriptions of the performances at low, medium, and high levels of proficiency are given under each heading. By comparing the team's performance to the characteristics of each trait, the evaluator can determine an overall level of performance for the team.

The rubric developed by Team LED has been checked against the rubrics Dr. Arter shared and against other teaming rubrics found during the project's information collection stage through various University professors.

FINDINGS; CONCLUSIONS; RECOMMENDATIONS

The rubric developed by Team LED is a well-developed first iteration. It uses the terminology of the strongest teaming references in the literature and has been wordsmithed by experts in the department. Many students and faculty reviewed the early versions of the rubric. The characteristics have been through several revisions to ensure that the word choice is as effective as possible.

Not withstanding these strengths, for added credibility, additional testing and examples are needed. Arter describes good rubrics as having a 98 percent inter-rater agreement within one point. Currently, no testing of the rubric for inter-rater agreement has occurred. This is largely due to the complexity of the task and a lack of established teams on which to test the rubric. With the testing of the rubric on several teams, data can be collected to validate and improve its quality.

It is also important that a quality rubric be presented with several examples of the performance it will help assess. As no current examples of teaming exist, it would be advantageous to create a video library of team performances so that the rubric can be explained and refined in an effective manner. We recommend that as the rubric is used, the performances being evaluated be videotaped. This will provide a control in the data collection on inter-rater reliability and validation of the rubric.

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APPENDIX A

Participants in Product Testing

Group 1

Ronald Smelser

Russ Porter

Will Webb

PK Northcutt

Group 2

Melissa Hanenburg

Andrew Staples

Justin Price

Chunyu Lu

Karl Rink

Jeremy Fromm

APPENDIX B

Feedback Form Used with the Focus Groups

Please take some time to fill out this rubric to evaluate the teaming rubric. (1 = poor 5 = excellent)

1. **Content:** *What counts?*
   - Does it cover everything of importance--doesn't leave important things out

     1 2 3 4 5
   - Does it leave out unimportant things? What they see is what they get.

     1 2 3 4 5
2. **Clarity:** Does everyone understand what is meant?
   - How easy is it to understand what is meant?

     1 2 3 4 5
   - Are terms defined?

     1 2 3 4 5
   - Are various levels of quality defined?

     1 2 3 4 5
   - Are there samples of work to illustrate levels of quality?

     1 2 3 4 5
3. **Practicality:** Is it easy to use by teachers and students?
   - Would students understand what is meant?

     1 2 3 4 5
   - Could students use it to self-assess?

     1 2 3 4 5
   - Is the information provided useful for planning?

     1 2 3 4 5
   - Is the rubric manageable?

     1 2 3 4 5
4. **Technical Quality / Fairness:** Is it reliable and valid?
   - Is it reliable?

     1 2 3 4 5
   - Is it valid?

     1 2 3 4 5
   - Is it fair?

     1 2 3 4 5

APPENDIX C

TEAMING RUBRIC

This is a composite rubric synthesized from several sources. It is not meant to be a checklist—the descriptors under each level of performance are indicators of the quality of the performance rather than an exhaustive listing; not everything must be 'checked off" to receive a score of a particular level. The rubric should be considered a work in progress."[ATI] (Note: The work by Larson and LeFasto [7] are the principal sources for elements of quality identified in the rubric.)

Suggestions for use:

1. Conduct a brainstorm with the group (or class) on the essential performances of teams. As brainstorm slows, as the group to synthesize their list and group the performances into 4 to 6 categories.
2. Compliment the group on their ability to develop a good list of ideas (as appropriate) and ask them if they are interested in what others who have worked on this problem have to say.
3. Present the rubric that follows and ask the group to identify which elements in their list are represented in the rubric. Identify which elements, if any, are missing.
4. Develop the rubric for the group that uses the appropriate balance of language of the discipline and "user voice" by putting the descriptors identified by the group into the version used by the teams as appropriate.
5. Reiterate the statement at the top of this page and ask the group to evaluate their performance based on the rubric's elements.
6. Request user feedback and suggestions for improvements.

Trait 1: Collaborative Climate

Guiding questions

- Does the team create a working environment that promotes trust, open communication, and synergy?
- Does the team recognize and use the strengths of each individual?

Level 5. The team establishes and maintains the environment needed for equal participation from all team members.

- Leadership within the team is based on intrinsic human values such as trust, cheerfulness, loyalty, friendliness, courtesy, kindness, thrift, and respect ("principled leadership").
- The team uses processes that reveal the strengths of each individual and they create a shared understanding of how each individual contributes.
- The team uses forward-focused evaluation.
- The team uses processes that insure that each voice is heard and valued.
- Conflicts between team members are brought to the team for resolution. The team employs a conflict resolution process that solves the problems and promotes collaboration.
- The team requires effective listening practices of its members. This includes traits such as acknowledging, attending, reflecting, probing, summarizing, etc.

Level 3. The team does is aware of the need for an appropriate environment, but lacks the skills to establish it.

- The team works to have meaningful, specific reviews of performance that promote genuine improvement, but sometimes fail in their efforts.
- Some team members can identify individual member's strengths, but the team doesn't benefit from it because the strengths are not utilized.
- The team aims for forward-focused evaluations, but periodically falls short.
- New ideas are encouraged and sometimes considered fairly, or, at times, idea synthesis fails because all ideas are viewed as equally credible even after their consideration.
- Occasionally, some voices are not heard. Sometimes the dominant member rules the discussion or the quiet, shy member remains that way, or the concerns go unmentioned to provide "harmony in the team.
- Conflicts are identified, but not effectively dealt with because of lacking skills or processes. The team values conflict for team development but lacks ability in harnessing it's potential.
- Listening for understanding practices occur (roughly 50 percent of the time).

Level 1. The team does not consider an environment where each opinion is given equal consideration valuable.

- The team does not review their performance, or they do it only when required to do so.
- All team members are unaware of the strengths of their teammates, or they believe that their idea is always the best method.
- Evaluations are negative; they focus on what is wrong, and fail to make suggestions for improvement.
- When a new idea emerges, it is routinely shot down.
- Frequently, some voices are not heard. One or several team members may dominate the conversation, a reflective or shy team member may fail to state their viewpoint, or in the interests of "harmony" a team member may not voice a concern.
- Conflicts are ignored or denied. The team believes that their focus should be "to all get along."
- Listening for understanding rarely occurs.

Trait 2: Performance Development

Guiding questions

- Does the team strive for excellence?
- Does the team hold individuals accountable for their performance?
- Is there a focus on growth in performance for both the team and the individual?

Level 5. The team is constantly striving to improve overall team performance.

- The team has a process for continuous improvement. This means they regularly and routinely evaluate many aspects of individual and team performance. In addition they implement ideas for improvement, and demonstrate improved performance over time.
- The team uses roles to continuously develop the individuals' talents and enhance team performance.
- The team holds individuals accountable for their performance.
- The team strives to become an asset to the organization, supervisor, or other relevant entity.
- The team embraces and takes on increasingly challenging tasks.

Level 3. The team considers their performance when encouraged by an outside source.

- The team considers their continuous improvement important but lacks adequate skills to effect change. They evaluate some aspects of individual and team performance. They implement some ideas for improvement, and show fairly small performance improvement over time.
- The team can relate to the use of roles in developing individuals' talents and enhancing team performance, but lacks skills in establishing or using roles.
- The team has a method of accountability for individual member performance, but it is semi-effective.
- The team sees how they could benefit the organization, supervisor, or other relevant entity.
- The team accepts increasingly challenging tasks as part of their duty as a team.

Level 1. The team never formally considers their performance.

- The team does not consider their continuous improvement. They do not evaluate any aspects of individual and team performance. They do not implement ideas for improvement because none are generated, and do not performance improvement over time.
- The team is unconcerned with developing individuals' talents and enhancing team performance.
- The team has no method of accountability for individual member performance.

- The team does not see how they could benefit the organization, supervisor, or other relevant entity.
- The team shuns increasingly challenging tasks.

Trait 3: Infrastructure

Guiding questions

- Has the team established ways to work together and to use resources?
- Does the team create goals that appeal and connect with each individual?

Level 5. The team has chosen methods to govern their work and help each member improve.

- The team creates goals that appeal to each individual and that help create an atmosphere where team goals are more important than individual goals (unified commitment).
- The team has well understood expectations (e.g. defined levels of quality, on time to meetings, acceptable contribution, etc.).
- The team continually adapts plans and processes to meet the changing needs of the stakeholders involved.
- The team matches the environment and resources to the task (i.e. shop for manufacturing, conference room for client meetings, etc.).
- The team follows effective meeting practices. This means meetings have clear objectives, have an agenda, are documented appropriately, begin/end on time, stay on task, and meeting time management is appropriate.
- The team has a process for deciding if tasks are best done as a team individually.

Level 3. The team has some methods to govern their work and help members improve.

- The team has goals that are accepted by many team members, but not all members are committed to their realization.
- The team has developed expectations that appeal to most teammates.
- The team tries to adapt plans and processes to meet the changing needs of the stakeholders involved, but sometimes fails because of poor skills or lack of consensus.
- The team considers the impact of environment and resources on successful task completion. They are developing the ability to match tasks with the environment and resources appropriately.
- The team is developing their meeting practice. The meetings have about 50 percent of the elements important to good meetings (i.e. objectives, agendas, appropriate documentation, etc). They are developing abilities in managing time during the meetings.
- The team is developing skills in determining whether work is best done as a team or individually.

Level 1. The team has no methods to govern their work or help each member improve.

- The team has no goals. There is no sense of unity or commitment.
- The team has not discussed expectations of the team members.
- The team will not adapt plans and processes to meet the changing needs of the stakeholders involved.
- The team never considers the impact of environment and resources on successful task completion.
- The team has no meeting practice. Meetings lack objectives, agendas, and appropriate documentation. They do not begin/end on time or stay on task. During meetings, time management is non-evident.
- The team has not yet developed skills in deciding whether work is best done as a team or individually.

Trait 4: Project Focus

Guiding questions

- Does the team have clear and elevating goals?
- Is the team focused on creating results?
- Does the team consider the broad societal impacts of their work?

Level 5. The team has clear, compelling goals that elevate each member to a new level of performance.

- Team goals are elevating and clearly understood by each member and by relevant stakeholders. In addition team goals satisfy other criteria such those described by the SMART[1] acronym.
- The team considers engineering ethics. This includes loyalty to employers, societal issues and impacts, design for the environment, health, safety and similar issues.
- The team is results-oriented. They routinely and continuously create appropriate results in the process of completing a project.
- The superior quality of the team's work generates external support and recognition.

Level 3. The team is developing skills in creating clear, compelling goals that will elevate the performance of all members.

- Team goals are clearly understood by each member and by relevant stakeholders, but are not yet elevating (or vice versa). Team goals satisfy many of the other criteria such those described by the SMART acronym (the goals are SAT, SMT, or ART, etc).
- The team considers some elements of engineering ethics. This includes loyalty to employers, societal issues and impacts, design for the environment, health, safety and similar issues.
- The team is becoming results-oriented. They sometimes create appropriate results in the process of completing a project.
- The team's work generates internal support and recognition.

Level 1. The team has no goals, or the goals do not elevate team members' performance.

- Team goals are either not established or do not agree with the view of relevant stakeholders. Team goals do not satisfy other criteria such those described by the SMART acronym.
- The team never considers engineering ethics. There is no conversation about loyalty to employers, societal issues and impacts, design for the environment, health, safety and similar issues.
- The team has not developed a results-oriented view of design. They routinely and continuously create inappropriate or inadequate results in the process of completing a project.
- The poor quality of the team's work prevents future external support and recognition of the team.

[1] Attributed to Rick DuFour (ATI conference, 2002), SMART is an acronym for Strategic and specific, Measurable, Attainable, Results-oriented, and Measurable.

Trait 5: Personal Responsibility

Guiding questions

- Does the personally strive maintain the high performance of the team?

Level 5. The individual demonstrates responsible and professional behavior

- The team member is on time to team activities (as described by the team standards).
- The team member gives positive and forward-focused comments.
- The team member completes tasks on schedule and with a level performance that is judged high quality by the team.
- The team member appropriately voices their viewpoint on all team issues.
- The team member assumes leadership and responsibility on subtasks.
- The team member accepts a role and is open to rotation of roles to promote individual growth.
- Instead of spinning their wheels, the team member brings both technical and people problems to the team.
- The team member places highest priority on team success rather than on personal benefits or acclaim.
- The team member makes an adequate and appropriate contribution to the team.

Level 3. The individual demonstrates some responsible and professional behavior

- The team member is sometimes late or misses team activities.
- The team member occasionally spouts "killer-phrases." Positive comments occur about ½ of the time.
- The team member points out problems with other's viewpoint and gives some ideas for improvement.
- The team member complete some assigned tasks, or the quality of their completed work is not always acceptable to the team and must be reworked.
- The team member sometimes dominates the discussion or sometimes fails to voice their point-of-view.
- The team member assumes dutiful responsibility on many tasks.
- The team member is willing to accept roles, yet struggles to understand why they are rotated.
- The team member tries not to spin their wheels, but still gets "locked in" on some problems.
- The team member is somewhat concerned with the team's success.
- The team member makes a half-hearted contribution to the team.

Level 1. The individual demonstrates irresponsible and non-professional behavior

- The team member is often late or misses team activities.
- The team member regularly spouts "killer-phrases." These are comments that are negative, cynical, derogatory, or overly critical.
- The team member points out problems with the viewpoints or ideas of others without giving forward-focused recommendations.
- The team member fails to complete assigned tasks, or the quality of their completed work is not acceptable to the team and must be reworked.
- The team member dominates the discussion or the team member fails to voice their point-of-view.
- The team member does not assume responsibility on any tasks.
- The team member is unwilling to accept roles.
- The team member spends far too much time trying to solve problems alone instead of asking for help when they get stuck.
- The team member is most concerned with their personal agenda and success.
- The team member makes little contribution to the team.

TEAMING RUBRIC

Evaluator: _____ Team Evaluated: _____ Date: _____

Criteria				Points
	Level 5	**Level 3**	**Level 1**	
Collaborative Climate	• Leadership within the team is based on intrinsic human values such as trust, cheerfulness, loyalty, friendliness, courtesy, kindness, thrift, and respect ("principled leadership"). • The team uses processes that reveal the strengths of each individual and they create a shared understanding of how each individual contributes. • The team uses forward-focused evaluation. • The team uses processes that insure that each voice is heard and valued. • Conflicts between team members are brought to the team for resolution. The team employs a conflict resolution process that solves the problems and promotes collaboration. • The team requires effective listening practices of its members. This includes traits such as acknowledging, attending, reflecting, probing, summarizing, etc.	• The team works to have meaningful, specific reviews of performance that promote genuine improvement, but sometimes fail in their efforts. • Some team members can identify individual member's strengths, but the team doesn't benefit from it because the strengths are not utilized. • The team aims for forward-focused evaluations, but periodically falls short. • New ideas are encouraged and sometimes considered fairly, or, at times, idea synthesis fails because all ideas are viewed as equally credible even after their consideration. • Occasionally, some voices are not heard. Sometimes the dominant member rules the discussion or the quiet, shy member remains that way, or the concerns go unmentioned to provide "harmony in the team. • Conflicts are identified, but not effectively dealt with because of lacking skills or processes. The team values conflict for team development but lacks ability in harnessing its potential. • Listening for understanding practices occur (roughly 50 percent of the time).	•The team does not review their performance, or they do it only when required to do so. •All team members are unaware of the strengths of their teammates, or they believe that their idea is always the best method. •Evaluations are negative; they focus on what is wrong, and fail to make suggestions for improvement. •When a new idea emerges, it is routinely shot down. •Frequently, some voices are not heard. One or several team members may dominate the conversation, a reflective or shy team member may fail to state their viewpoint, or in the interests of "harmony" a team member may not voice a concern. •Conflicts are ignored or denied. The team believes that their focus should be "to all get along." • Listening for understanding rarely occurs.	_____
Personal Responsibility	• The team member is on time to team activities (as described by the team standards). • The team member gives positive and forward-focused comments.	•The team member is sometimes late or misses team activities. •The team member occasionally spouts "killer-phrases." Positive comments occur about ½ of the time. •The team member points out problems with other's viewpoint and	•The team member is often late or misses team activities. •The team member regularly spouts "killer-phrases." These are comments that are negative, cynical, derogatory, or overly critical.	_____

	• The team member completes tasks on schedule and with a level performance that is judged high quality by the team. • The team member appropriately voices their viewpoint on all team issues. • The team member assumes leadership and responsibility on subtasks. • The team member accepts a role and is open to rotation of roles to promote individual growth. • Instead of spinning their wheels, the team member brings both technical and people problems to the team. • The team member places highest priority on team success rather than on personal benefits or acclaim. • The team member makes an adequate and appropriate contribution to the team.	gives some ideas for improvement. • The team member complete some assigned tasks, or the quality of their completed work is not always acceptable to the team and must be reworked. • The team member sometimes dominates the discussion or sometimes fails to voice their point-of-view. • The team member assumes dutiful responsibility on many tasks. • The team member is willing to accept roles, yet struggles to understand why they are rotated. • The team member tries not to spin their wheels, but still gets "locked in" on some problems. • The team member is somewhat concerned with the team's success. • The team member makes a half-hearted contribution to the team.	• The team member points out problems with the viewpoints or ideas of others without giving forward-focused recommendations. • The team member fails to complete assigned tasks, or the quality of their completed work is not acceptable to the team and must be reworked. • The team member dominates the discussion or the team member fails to voice their point-of-view. • The team member does not assume responsibility on any tasks. • The team member is unwilling to accept roles. • The team member spends far too much time trying to solve problems alone instead of asking for help when they get stuck. • The team member is most concerned with their personal agenda and success. • The team member makes little contribution to the team.	

Infrastructure	• The team creates goals that appeal to each individual and that help create an atmosphere where team goals are more important than individual goals (unified commitment). • The team has well understood expectations (e.g. defined levels of quality, on time to meetings, acceptable contribution, etc.). • The team continually adapts plans and processes to meet the changing needs of the stakeholders involved. • The team matches the environment and resources to the task (i.e. shop for manufacturing, conference room for client meetings, etc.). • The team follows effective meeting practices. This means meetings have clear objectives, have an agenda, are documented appropriately, begin/end on time, stay on task, and meeting time management is appropriate.	• The team has goals that are accepted by many team members, but not all members are committed to their realization. • The team has developed expectations that appeal to most teammates. • The team tries to adapt plans and processes to meet the changing needs of the stakeholders involved, but sometimes fails because of poor skills or lack of consensus. • The team considers the impact of environment and resources on successful task completion. They are developing the ability to match tasks with the environment and resources appropriately. • The team is developing their meeting practice. The meetings have about 50 percent of the elements important to good meetings (i.e. objectives, agendas, appropriate documentation, etc). They are developing abilities in managing time during the meetings. • The team is developing skills in determining whether work is best done as a team or individually.	• The team has no goals. There is no sense of unity or commitment. • The team has not discussed expectations of the team members. • The team will not adapt plans and processes to meet the changing needs of the stakeholders involved. • The team never considers the impact of environment and resources on successful task completion. • The team has no meeting practice. Meetings lack objectives, agendas, and appropriate documentation. They do not begin/end on time or stay on task. During meetings, time management is non-evident. • The team has not yet developed skills in deciding whether work is best done as a team or individually.	_____

	• The team has a process for deciding if tasks are best done as a team individually.			
Project Focus	• Team goals are elevating and clearly understood by each member and by relevant stakeholders. In addition team goals satisfy other criteria such those described by the SMART[2] acronym. • The team considers engineering ethics. This includes loyalty to employers, societal issues and impacts, design for the environment, health, safety and similar issues. • The team is results-oriented. They routinely and continuously create appropriate results in the process of completing a project. • The superior quality of the team's work generates external support and recognition.	• Team goals are clearly understood by each member and by relevant stakeholders, but are not yet elevating (or vice versa). Team goals satisfy many of the other criteria such those described by the SMART acronym (the goals are SAT, SMT, or ART, etc). • The team considers some elements of engineering ethics. This includes loyalty to employers, societal issues and impacts, design for the environment, health, safety and similar issues. • The team is becoming results-oriented. They sometimes create appropriate results in the process of completing a project. • The team's work generates internal support and recognition.	• Team goals are either not established or do not agree with the view of relevant stakeholders. Team goals do not satisfy other criteria such those described by the SMART acronym. • The team never considers engineering ethics. There is no conversation about loyalty to employers, societal issues and impacts, design for the environment, health, safety and similar issues. • The team has not developed a results-oriented view of design. They routinely and continuously create inappropriate or inadequate results in the process of completing a project. • The poor quality of the team's work prevents future external support and recognition of the team.	_____

[2] Attributed to Rick DuFour (ATI conference, 2002), SMART is an acronym for Strategic and specific, Measurable, Attainable, Results-oriented, and Measurable.