Essential Elements In Teaming

Creation of a teaming rubric

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Prepared for
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## Images and description

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Intent of the project
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) wrote a proposal to Dr. Michael Kyte, director of the National Institute for Advanced Transportation Technology (NIATT). In the proposal, a tool for growing teaming skills in the classroom, extra-curricular activities, and in faculty teams was described. The proposed timeline was 3-weeks, at a cost of $1,450.00 to NIATT.

Presentation to NIATT
Dr. Kyte met with team LED on Monday, August 5, 2002 to review the proposal and discern the project viability. After reviewing the team’s proposition, Dr. Kyte agreed to hire the team to complete the project. The following is a technical report summarizing the procedure followed to fulfill the contract.

The Client Interview
In a client interview, Dr. Kyte and team LED agreed the best method to address the problem was to develop a rubric on teaming. 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 describes a rubric as a document that identifies the key elements of a given performance and illustrates through examples what each level of performance looks like (Arter, 8; Huba, 155). Rubrics can be used to assess as well as to teach skills in the given performance.

As a team, LED worked with Dr. Kyte to establish a mutual understanding of what the project outcomes should be. 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.
Process of Rubric Development

Figure 1 Robert Wiegers conducting an analysis and synthesis exercise with the team.

Team LED brainstormed the essential elements of optimal team performance. The list was quite long (~40-50 items), so the elements were grouped into main categories based on their similarities. These categories became the main traits for teaming in the rubric (see figure 1).

Research on rubrics was performed as well at this time, and Dr. Judy Arter, and Dr. Rick DuFour of the Assessment Training Institute (www.assessmentinst.com) were contacted via e-mail for help in locating existing rubrics and best teaming texts.

With the traits identified by the team, an outline of teaming rubric 1.0 was developed. Team LED reviewed this rubric several times to find the best description of the essential elements. Once the rubric passed the team’s expectations, it was compared to the literature on teaming studied up to that point.

See “sources of information” section 1 for the texts consulted at this stage of the process.
Rubric Testing Process

To evaluate the first iteration of the rubric, team LED organized a focus group of students, faculty, technicians, and administrative assistants to review the rubric (see Appendix A for list of participants).

![Figure 2](image1.png)

*Figure 2* Participants in the first of two focus groups reviewing rubric 1.0.

There were two 30-minute sessions on Friday, August 9, 2002 (see figure 2). In these sessions, a description of the project and LED’s affiliation with *NIATT* was given. Next the feedback forms were described and instructions for providing user feedback were given (see figure 3).

![Figure 3](image2.png)

*Figure 3* Jonathon Miller gives instructions to the second focus group reviewing rubric 1.0.

To allow the participants to focus and have the time they needed to evaluate our rubric based on past teaming experiences, the facilitators left the room. After
completing our form, refreshments were available so that verbal feedback from the participants could be obtained (see figure 4). The forms with user’s feedback from focus group 1 are in Appendix B.

Figure 4 Jonathon Miller and Karl Rink discuss the essential elements of teaming that could be more clearly included in the next version of the rubric.

Target clarification and project re-focus

With all the newly collected data, there were several alterations and changes to be made. About this time in the project, LED inquired of Dr. Kyte how important it was to him that the rubric reflects the current literature on teaming. His response was that the level of importance this had to him was a 7/10 (see Appendix C). Because of this e-mail, more research on teaming best practices was necessary, so additional sources about teaming were found.

Dr. Arter responded with several e-mails and examples of rubrics related to teaming via e-mail and the postal service (see Appendix D). The rubric 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 (see Appendix E).
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 are written for the college level application of rubrics.

The rubric was altered to reflect the information and word choice contained in the above sources and then reviewed by team LED. While reviewing, 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 that promotes 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.

**Results**

The rubric 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.

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2 See “sources of information” section 2 for texts consulted at this stage of the process.
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 in 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.

**Discussion**

This rubric 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 have 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.

Notwithstanding these strengths, for added credibility, additional testing and examples are needed. Arter describes good rubrics as having a 98% 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.

Conclusion

Team LED has developed an analytical trait rubric with 4 main traits on teaming. Each of these traits is described by 4-7 characteristics of performance. Specifically, 3 levels of performance are defined, and by inference, assessment of performance at 5 different levels can be measured. The written instructions for the use of the rubric are attached as part of the rubric in Appendix F.
Works Cited


Sources of Information:

Section 1


Section 2


Arter’s resources (included in appendix D).