

July 10, 2009

2009 Premier Award
c/o Joe Tront
Virginia Tech
359 Durham Hall
Blacksburg, VA 24061-0111

Dear Dr. Tront:

Our team is submitting two integrated tools for teamwork support for Premier Award consideration. I certify that I am authorized to submit this courseware for the competition and Engineering Pathway/NEEDS is authorized to become a non-exclusive distributor of the courseware.

Team-Maker is a tool for forming teams using instructors' criteria. The *Comprehensive Assessment of Team Member Effectiveness* (CATME) collects and analyzes self and peer evaluations of team members' contributions. As an integrated system, Team-Maker and CATME save faculty time and give faculty the feedback they need to manage teams in the classroom, and provide students with tools that help them perform well on a team, an incentive to contribute to the team, and feedback about their performance.

CATME has been available at <https://www.catme.org/> since 2005. Team-Maker was added to the site in 2007 (also accessible at <https://www.team-maker.org/>). Both are free for educational use, but require secure access. The system has over 500 faculty users at 145 institutions and has been used by more than 20,000 unique students. It has functioned properly in PC, Apple, and Blackberry browsers.

Rose-Hulman Institute of Technology holds the copyright on the original Team-Maker, which was released into the public domain via SourceForge. The copyright for the current Team-Maker algorithm and interface is held jointly by Clemson University and Rose-Hulman Institute of Technology. The copyright on the CATME interface is held by Clemson University. The copyright on the CATME instrument is jointly held by Clemson University, North Carolina State University, University of Michigan, and Western Kentucky University. The instrument and interface was developed with NSF support and with the understanding that the instrument would be free for educational use as long as that model was sustainable.

Co-authors and contributors: (all have been contacted regarding this submission)

Lisa G. Bullard, Teaching Associate Professor and Director of Undergraduate Studies,
Department of Chemical and Biomolecular Engineering, NC State
Richard M. Felder, Hoechst Celanese Professor Emeritus of Chemical Engineering, NC State
Cynthia J. Finelli, Associate Research Scientist of Engineering Education and
Director, Center for Research on Teaching and Learning, U. Michigan
Richard A. Layton, Director, Center for the Practice and Scholarship of Education and
Associate Professor of Mechanical Engineering, Rose-Hulman Institute of Technology
Misty L. Loughry, Associate Professor of Management, Georgia Southern University
Hal R. Pomeranz, Principal, Deer Run Associates
Douglas G. Schmucker, Senior Project Engineer, Zahl-Ford, Inc.

Best regards,



Matthew W. Ohland
Associate Professor



CATME and Team-Maker Tools for Teamwork

Application for the Premier Award for Excellence in Engineering Education Courseware, July 17, 2009, by
M. Ohland, L. Bullard, R. Felder, C. Finelli, R. Layton, M. Loughry, H. Pomeranz, and D. Schmucker

SUMMARY

Audience: Higher education, all disciplines that use teamwork. Although these tools were created to enhance teamwork in engineering classes, they also work well in other disciplines.

Learning resource type: Teaching: Software Tool/Environment.

Media type: Web-based.

Description: *Team-Maker* is a tool for forming teams according to instructor-specified criteria. The *Comprehensive Assessment of Team Member Effectiveness* (CATME) is an instrument for self-and peer-evaluation of team-members' contributions to a team. As an integrated system, Team-Maker and CATME save faculty time and give faculty the feedback they need to manage teams in the classroom.

Tutorial: A tutorial is provided in the appendix to guide Premier Award reviewers through the interface. The tutorial includes an account login and password.

INTRODUCTION

There is a clear need for engineering students to learn teamwork skills—team-based instructional methods have learning benefits proven by research; graduates are almost certain to work in teams and their performance evaluations will depend on their ability to do so; program accreditation criteria require that students be able to function on multidisciplinary teams. Thus, the practice of assigning group work is ubiquitous in engineering education. Careful design and assessment of team experiences are not, however. CATME and Team-Maker address this deficiency.

CATME and Team-Maker Tools help faculty manage teamwork by customizing the student experience, setting criteria and objectives for the team, and learning about their teams' experiences. *Team-Maker* is a tool for forming teams based on students' schedules, preferences, skill areas, and instructors' learning goals.¹ The *Comprehensive Assessment of Team Member Effectiveness* (CATME) enables self- and peer-evaluation of team-member contributions to a team based on behaviors that research has shown to be important for effective team functioning.²⁻⁵ The web-based CATME/Team-Maker Tools collect survey data from students, prepare reports for instructors, and provide individual feedback to students. The online system provides ease of use, simplicity of data collection, confidentiality, and timeliness of feedback, and it also flags problematic rating patterns that suggest a need for instructor intervention.³

Team-Maker: Summary of Functionality

The basic functionality of Team-Maker is to assign students to teams using instructor-defined criteria, including criteria consistent with the cooperative learning literature. First, the instructor decides which attributes of students to measure before assigning teams. Next, Team-Maker surveys students to determine their attributes. Finally, the instructor uses Team-Maker to assign students to teams by choosing weights for each criterion. The purpose of the system is to improve the likelihood that teams can meet instructors' learning objectives.

Team-Maker provides two web interfaces—one for instructors and one for students. The instructor interface is used to create a survey and, once students have completed the survey, to assign students to teams. The student's interface allows each student to complete the confidential survey. Features of the Team-Maker system important to forming cooperative-learning teams in engineering classes include: the instructor decides which attributes or skills (e.g., grades in prior courses, GPA, writing skill) are to be distributed heterogeneously across teams; the prevention, if possible, of women and underrepresented minorities being outnumbered on a team; and matching student schedules so that members of a team can find time to meet outside of class.

CATME: Summary of Functionality

The goal of the Comprehensive Assessment of Team Member Effectiveness (CATME) System is to make peer evaluation simple, reliable, and valid. Faculty use the system to enter information about classes, populate classes with students, populate teams of students within a class, and set up student surveys. The faculty interface controls the student instructions, factors surveyed, and data reported. Faculty select from five primary factors—Contributing to the Team's Work, Interacting with Teammates, Keeping Team on Track, Expecting Quality, and Having Task-Related Knowledge / Skills / Abilities. The system supports uploading common text file formats to facilitate large-scale data entry. The system also has automated features, such as notifying students when a survey opens. Sophisticated heuristics identify dysfunctional students and teams. Students using the CATME peer evaluation each receive an email when they are first assigned in the system so they can set up a password, making the system secure. Students log in to find a list of active surveys and a second list of completed surveys where the students can view results. If a student doesn't complete the entire survey, the interface remembers what data they already entered so the student can simply resume at the next login. The interface shows the names of each teammate, making it easy for students to complete the self and peer ratings.

Dramatic growth in the number of users of CATME and Team-Maker since their release (shown in Figure 1) shows that these tools meet instructors' needs for managing teams and assessing team skills. As of June 2009, there are 502 instructors and 20,035 students registered to use the system at 145 different institutions.

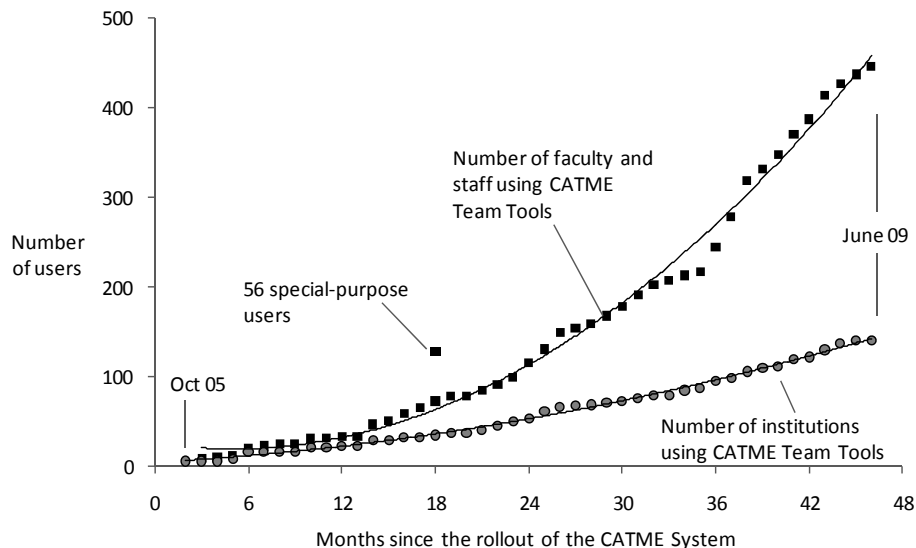


Figure 1: Growth in the number of faculty and institutions using CATME/Team-Maker Tools.

1.0 SOFTWARE DESIGN FEATURES

CATME and Team-Maker have a number of features conducive to student knowledge acquisition and team-skill development. They support most of the tenets of *cooperative learning*, a research-based approach to teamwork that has been repeatedly shown to promote attainment of a wide variety of learning objectives. The system is interactive and automates most tasks that make team formation and peer evaluation cumbersome and time-consuming for instructors and students. It can be used for summative evaluation of team-member effectiveness, an important component of cooperative learning, and for formative evaluation, so that students can identify the aspects of high-performance team functioning in which they are doing well and areas where they can improve. The sections that follow provide details on each of these program features.

1.1 Learning Objectives

Learning objectives and goals are appropriate and clearly stated, in the software (preferred) in an instructor's guide or the submission packet. The goal of the system is to support team-based learning through team formation and assessment. Since this is a tool, it has no content-specific objectives, but this goal is articulated and achieved in multiple ways.

The presentation and organization of content, as well as related activities, supports the learning objectives and goals. Cooperative learning (CL) is instruction involving students working in teams toward a common goal under conditions including the five elements below.⁴ Felder and Brent have noted, "Cooperative learning is not simply a synonym for students working in groups. A learning exercise only qualifies as CL to the extent that the listed elements are present."⁵ CATME and Team-Maker are designed to support four of these five, as follows:⁶

1. *Individual accountability.* Peer evaluations enable instructors to hold students accountable for their effectiveness on their team and for students to hold one another accountable. Ratings that are confidential, but not anonymous, particularly support accountability.⁷
2. *Face-to-face interaction.* Using Team-Maker's schedule-compatibility feature helps make sure students have common time for face-to-face interaction outside of class.
3. *Appropriate use of collaborative skills* is supported by helping students learn what "being an effective team member" means. The behaviors assessed in CATME and the feedback the system provides help students improve their effectiveness and reinforce collaborative skills.
4. *Self-assessment of team functioning* is heavily supported by the feedback the students get from CATME, which generates discussion of expectations. Students can identify areas where they are doing well and weaknesses that need to be addressed.
5. *Positive interdependence* originates in the instructor's choice of taskwork and practices such that team members have to rely on each other in a positive way, and thus is not addressed in the system.

Learners are aware of learning objectives as they are using the software and participating in the learning experience. The behavioral anchors assessed in CATME declare the skills that students are expected to display during team activities.

A clear method of measuring achievement of learning objectives and goals is provided within the software or by the learning experience. CATME assesses team-member effectiveness.

Learning objectives and goals can be correlated to ABET accreditation criteria. ABET EC 2000+ Criterion 3.d requires students be "able to function on multidisciplinary teams."

1.2 Interactivity.

The software responds appropriately to learner actions. Faculty users have immediate access to survey results. Furthermore, the system analyzes survey data and immediately alerts faculty to problems that may be developing in teams, enabling faculty to intervene and remediate.

Communication is two-way. Student surveys solicit comments for confidential feedback to faculty. When teams are created, students are sent teammates' email addresses. The system provides faculty links to email students and request technical support.

Learners control their own pace and are informed of their progress so they can make appropriate decisions about how to proceed. Web-based instruments allow anytime, anywhere convenience; students can leave and resume surveys. Students receive automatic emails from the system when surveys open and reminders near the close date. Faculty can view survey completion percentages (email reminders to faculty as the survey end date approaches also include this information) and see which students have responded.

Choices that learners make are meaningful and not “just for the sake of making choices”. CATME's format (described in detail in 1.4) was designed to clarify and reduce the number of choices raters make, eliciting meaningful responses and reducing “survey fatigue”.⁸

Learners decide what they want to learn, in what order, and how deeply they want to concentrate on specific topics. Not appropriate generally for a tool such as this. Nevertheless, when students receive feedback, they can choose what team skills to work on improving.

The learner can select the type of media that she wants to use (e.g., audio, transcript, etc.). The system provides faculty users with multiple mechanisms for loading data into the system: CSV files, importing data from a previous survey, and even direct manual input.

There are questions and challenges to help the learner monitor his or her progress. CATME's focus is to provide opportunities for students to assess their performance and receive feedback and guidance so that they can monitor and improve their own behaviors.

Learners are presented with relevant problems to solve; exemplary solutions are included. A demonstration vignette is provided so that users can practice rating in a fictional scenario. After a user finishes rating the fictitious team members, the system compares the user's ratings to expert ratings. Although this practice vignette is provided primarily for prospective faculty users to get an idea of how the system operates, several CATME users have indicated that they use the vignette to teach students how to rate their peers.

There is an analysis of learner input and useful, appropriate feedback. Analyses of student ratings patterns alert faculty in cases where intervention may be necessary. Faculty may elect to have these warnings sent to students as well. Faculty users have reported that students take this feedback seriously and that it often triggers discussion between faculty and students.

The system adapts its delivery style or content based on learner actions. The behavior of the interface maintains state in many respects. It constantly and automatically tracks user activity and takes actions and adjusts the default settings accordingly:

- The system defaults to creating a Team-Maker survey for the first survey administered in a class, or a peer evaluation survey otherwise. Some form data is populated from the user's profile, default term and survey start/end dates are based on the survey creation date, and other defaults are set to match previous surveys by the user.
- When students leave a survey and later return, the system remembers their earlier responses and returns them to where they were in the survey.
- When viewing survey results, the interface remembers faculty preferences such as the desire to view summary or detailed data and presents information accordingly.

1.3 Cognition/Conceptual Change.

It appears that learners will be able to demonstrate or apply the concepts introduced by the software in meaningful ways. The criteria students use to evaluate themselves and others map to skills that are important to team functioning. The CATME instrument is validated,¹¹ and further validation is in development for publication. Students' learning of these team skills is cognitive and metacognitive, and can be measured using concepts from the Social Relations Model:

- *Consensus* is whether perceivers agree in their perceptions of various targets. Experimental data indicate that relatively little of the rating variability is due to rater variance, indicating good consensus. This study is being prepared for publication.
- *Uniqueness* is whether perceivers have unique perceptions of different targets (people are not all the same). An experiment conducting three evaluations in a term showed that target rating variance and skill rating variance were lowest in the first evaluation. In the second evaluation, they learned to distinguish behaviors, and the skill rating variability increased. By the third administration, variability drops slightly as team norms develop.
- *Meta-accuracy* is how well people know how others see them.⁹ It has been observed that unskilled people consistently overestimate their skill level, whereas skilled people consistently underestimate their abilities.¹⁰ Evidence is provided in Figure 2 that students gain team skills the more they use CATME.

As research would predict,¹⁰ when (unskilled) students first use the system, their self-ratings are overestimated, exceeding ratings by teammates. As students use the survey more times (and participate in more team experiences), their self-ratings are underestimated, dropping below ratings by their teammates. This is evidence that students are developing teamwork skills the more they use CATME. Graphs of these longitudinal changes are shown in Fig. 2 for each of the five teamwork measures. In each graph, the vertical axis represents (Rating by others – Rating by self) and the horizontal axis represents the number of times students have taken a CATME survey (1–9). Negative values are overestimations of self; positive values are underestimations.

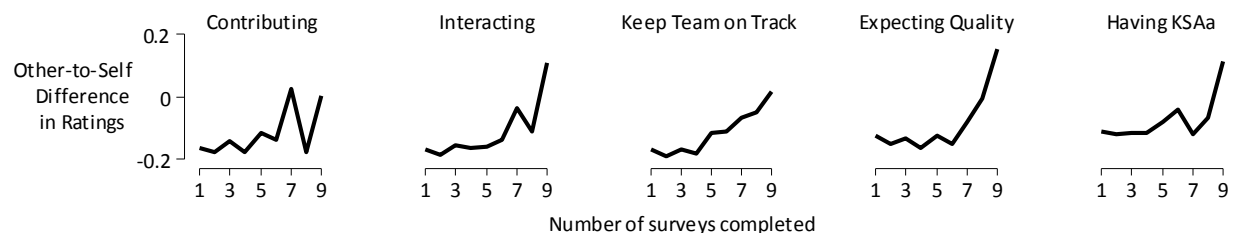


Figure 2. As students learn team skills, they are less likely to overestimate self-ratings.

It appears that learners will be able to transfer what they've learned to areas beyond what is specifically covered in the software. Team-Maker and CATME encourage students to transfer their knowledge and skills to other areas. For the students, the team skills developed can be generalized to future team contexts in other classes and jobs involving teamwork. Faculty (who also learn) become better managers of student teams, which transfers to future courses.

The software encourages and supports reflection, deep thinking, knowledge integration, and making connections. Team-Maker and CATME are fundamentally designed to promote reflection about one's own team-member effectiveness and that of one's teammates.

The software has been tested with real learners and there is evidence that it enhances learning. The system has been tested in real education settings by more than 500 faculty and over 20,000 students (see Figure 1 above). There is evidence that the CATME system in particular enhances learning (see data presented and described in Figure 2 above).

Mechanisms are provided so learners can monitor their own understanding and correct their misconceptions or poorly developed mental models. The system helps students monitor their effectiveness and makes recommendations regarding how they can improve. The system flags students whose self-ratings or ratings of others seem incongruent with other evidence. This mechanism helps learners correct misconceptions and focus on their own understanding.

1.4 Content.

The scope of the content is appropriate for the intended learning objectives and intended audience. Team-Maker and CATME enhance learning in team contexts. Team-Maker criteria arise from faculty needs and team formation research. Instructors can distribute students with different specializations across teams to support multidisciplinary projects (as ABET requires). Team-Maker forms teams with common times to meet, addressing the most practical of needs. CATME helps students improve their team effectiveness by identifying ways that members contribute to a team.¹¹ Behaviorally anchored rating scales (BARS) are simpler, more reliable, and less time-consuming than the common Likert format.⁸ CATME's behavioral descriptions of high, medium, and low performance in each rating category teach students not only how to perform well, but also how to avoid harming the team's performance. CATME provides feedback about how a student's ratings compare to those of their teammates, along with simple, clear statements about what students can do to improve their performance in each area.

There is a default sequencing of material that makes sense for learning. "Having task-related knowledge, skills, and abilities" is rated last because this is the rating category that is likely to cause the most interference with accurate rating in other categories.

The structure of the knowledge to be learned is clearly conveyed. By providing behavioral anchors within categories, CATME structures "team-member effectiveness."

The content builds on prior knowledge that learners can be expected to have; the required background knowledge is clearly stated or understood. We assume instructors and students have little prior knowledge about teamwork. This is important in engineering and other technical subjects where faculty often lack confidence in their ability to manage teamwork and students are uncomfortable with and unprepared for teamwork and fearful of the time commitment and the possibility of working with people who do not contribute fully.¹²

There are useful links between content areas. Team-Maker and CATME share data. Otherwise, this criterion is inappropriate for tools such as these, which are not content-specific.

The organization facilitates the user's exploration of the area of knowledge both inside and outside the learning experience. Again, these tools are not content-specific.

1.5 Multimedia Use.

None of the multimedia representations used is ambiguous, leads to serious misconceptions, or is likely to be misinterpreted by learners. A recent usability study of the interface identified fewer than a dozen problems in the entire interface, several of which were minor or cosmetic. Some issues have been addressed already, and the remainder will be fixed in future releases. Stronger evidence for the clarity of the interface is its rapid adoption despite the lack of formal marketing or interface training workshops (see Figure 1 earlier). The interface is intuitive and easy to use.

Media is used appropriately and not gratuitously. The interface was designed to be relatively sparse and monochromatic so that when color is used for errors, alerts, warnings, and other indications, these elements stand out and immediately draw the attention of the user. The web interface intentionally focuses on a common subset of the HTML markup language that is

portable across a wide variety of browsers and browser versions (including screen readers for disabled users). JavaScript and other “Web 2.0” technologies are specifically avoided in primary navigation of the interface, but are used when appropriate to provide helpful additional information (informational mouse-overs, etc) for users who choose to enable these technologies.

Multiple representations are used to help learners construct interrelated knowledge. We have avoided multiple visual representations to keep the interface simple and easy to learn.

Media elements are of high visual and aural quality. The interface is rich with small visual elements that provide additional depth and useful information, yet do not intrude into the usability of the interface. Examples include mouse-over schedule compatibility grids in Team-Maker results for faculty, mouse-over texts on the student schedule summary indicating which students are available during each block of time, and even small visual cues like the banner logo differentiating between Team-Maker and CATME surveys.

Multiple media types support each other. For example, text transcripts are available for audio data, or audio data narrates animation(s). Not appropriate for these tools.

Multimedia elements are clearly labeled, so the learner doesn’t have to struggle to figure out what they are looking at, or why the element is there. The interface is entirely interactive, and screen elements are clearly labeled. Context-sensitive help text is provided for users that need it.

1.6 Instructional Use and Adaptability.

Instructions or an instructor’s guide clearly explains how this software should be used to be effective, and who is expected to use the software. In addition to the on-line, context sensitive help text included in the interface, we have developed a brief tutorial document (included in the appendix). However, most of our users request an account knowing what the software does and begin using the instrument without any sort of formal training, proving it can be used by novices.

The intended use is not so narrowly defined that only a select few could use this software. The software was designed for the needs of US engineering programs, yet the interface is being used in Business/Management programs, at all academic levels from K-12 through graduate-level programs, and in other countries (even where English is not the primary language). This is compelling proof that our software is useful in any team-based educational context. CATME has been used to manage much larger teams than anticipated. After finding out that the system worked properly with 15-student teams, a user wrote, “I think CATME will help us a lot in this class. We ... had just about given up on evaluation because of the huge amount of data entry.”

There are suggestions in the instructors’ guide or mechanisms in the software to assess learning. The entire purpose of our instrument is to assess learning in team-based contexts.

The software provides different use levels (beginner, intermediate, expert). As faculty begin using our system, they are guided by a multi-screen “wizard”. As they gain experience using the system, they can turn off the “wizard” and use a streamlined interface.

Help functions and guides are provided. Context-sensitive help is available by clicking “Help” in the upper-right-hand corner of any page, linking the user to the appropriate section of the help text. The text itself serves as step-by-step instructions for using the system, and most users read the help text before using the system. Users find the system help feature useful: 50 of 50 faculty who responded that they had needed help indicated that they consult the system help. By comparison, 17 of those 50 respondents indicated that they “never” emailed the system administrators, 24 did so “in some cases,” and only 7 did so “in most cases.” Most help requests sent to the system administrators are actually requests for new functionality (many of which have since been addressed). Nine of 60 respondents reported never needing help using the system.

There are instructor-configurable software settings. The interface allows instructors to configure how surveys are administered and how data are used. This includes actions such as personalizing the instructor's experience (e.g., using multi-screen wizards or the more streamlined "expert" interface, or setting preferences in their system profile), customizing the content of surveys (instructions to students, categories to be surveyed, etc.), choosing how to use Team-Maker survey data to form teams (choosing team sizes, setting weighting for various surveyed parameters, specifically grouping or separating particular students), customizing the format of the feedback provided to students (enabling additional feedback if "exceptional" conditions occur), and deciding whether or not to make the data from the surveys available to the students and/or the research team.

There are clear suggestions for alternate uses in the instructors' guide, or easily identifiable alternate uses. Practical suggestions are provided in the help text, including advice about how to make choices on how best to administer surveys in large, multi-section, team-taught classes and suggestions for choosing among the various survey categories.

This software has potential to improve the way instructors spend their time. Feedback from faculty users shows that the system improves the way instructors spend their time. In comments from a survey conducted in July 2009, users indicated that before CATME, they...

- collected peer feedback via email forms and a spreadsheet...CATME lets me do this, and more, in far less time.
- set up a 'quiz' on our CMS, and had students fill that out. It was tedious for me and very confusing for them.
- used spreadsheets, downloaded by each student, then emailed back to me. Very tedious manual process for combining results from team members into an overall spreadsheet.

Additional statements from users are included in the appendix.

2.0 SOFTWARE DESIGN

2.1 Engagement.

The software is stimulating and challenging. As assessment tools, the primary stimulation and challenge comes from reflecting on the feedback from peers.

The software does not contain stereotypes (racial, gender, ethnic, age). Behavioral anchors are phrased without pronouns. The demonstration instrument uses gender-neutral names.

Speed of software is satisfactory. The web interface is responsive—fast enough to enable faculty to accomplish goals that were not possible with previous, paper-based instruments. For example, Purdue University used the software to form teams from 1200 students in First-Year Engineering, and even re-formed teams twice to choose between multiple "optimal" team layouts by adjusting the weight of parameters collected by Team-Maker.

The software is visually appealing and attractive in the design of its screens. The interface is designed for simplicity of visual appeal, minimizing clutter and distraction. Limited use of color is highly intentional and designed to guide the eye to critical warnings and alerts.

The learner would use it more than once. Our system has been available for slightly less than four years. Some users have administered multiple surveys in well over a dozen classes over several school terms. Some students have completed more than a dozen surveys across half a dozen classes in multiple years. One faculty user started using the system at the request of students who had used the system previously. The software is used voluntarily and repeatedly by our user base. Overwhelmingly, users surveyed say they would recommend the system to others; the large number of faculty who hear of the system by word-of-mouth is evidence of that.

There are learner-tailorable interface settings. While students cannot (and should not) customize the survey design, instructors can tailor the survey to course learning objectives and to the learners themselves through how teams are formed and assessed, as described elsewhere.

There is consideration for learners with physical impairments. The primary interface will function with screen readers. While we have tried to be sensitive to the needs of disabled users through appropriate choices in the interface design, we have not yet conducted an accessibility study nor certified the interface by relevant standards such as WAI's WCAG or USRA Sec508.

The software promotes diversity and gender equity. In engineering, where white males are usually a strong majority, Team-Maker can try to avoid isolating women and minorities on teams to ensure their voices are heard in the team, particularly in early courses.^{13,14,15,16} This might draw attention to underrepresented students, which has been criticized,¹⁷ so demographic data can be collected without influencing team formation. A future release will allow instructors to form teams that are heterogeneous by race and/or gender, as might be appropriate in later courses, when isolating underrepresented students more accurately models what students will encounter in the workforce and can help all students learn to work with diverse populations.

2.2 Learner Interface and Navigation

The software is consistent in its design and response to learner actions. Buttons controlling interface action are generally consistent and always grouped in the upper-right corner of the screen near the “Logout” and “Help” controls. “Dangerous” actions such as deleting information are generally placed in the lower right portion of the page to avoid accidental selection.

The learner will not get confused about how to proceed. The interface provides guided “wizard” interfaces to help faculty set up surveys in the systems. When taking surveys, students are clearly guided through the survey process.

The learner can form a mental map of where they are and how to get around in the software (e.g., through an explicit map or because the software is simple enough). Usage data suggests that users have had few difficulties using our interface. Nevertheless, a recent usability study suggested improvements to navigation that we plan to implement in future releases.

Icons and graphical symbols are clear and unambiguous. There are purposefully few graphical elements in the interface and the few that are used are clear and unambiguous—like the “fuel gauge” indicators of what percentage of students have completed a survey. To assist understanding, most graphical icons are also labeled with text (e.g. the “percent complete” marker next to the “fuel gauge” icons, or the “group similar” and “group dissimilar” labels in the Team-Maker team formation interface where complimentary graphical icons are used).

There are multiple forms of navigation (e.g., table of contents, next/previous, index, and search). Where appropriate and not confusing, multiple navigation controls are provided. The screen to modify survey parameters can be reached either from the faculty member's “Summary” page or from the class summary screen. If there is some significant condition for a particular survey that must be dealt with by the faculty user (e.g., student roster not yet loaded, or survey end date reached but survey data not released) then these conditions are flagged and the explanatory text links to the location in the interface to correct the issue.

Screens can be viewed without scrolling. The width of screens in the interface is specifically constrained so that it can be easily viewed on a wide variety of different screens without horizontal scrolling (including screens with limited display width such as small “netbook” computers). Where screens present enough information to require vertical scrolling, the most vital or most commonly edited information is presented in the initial screen of data.

Text on screens is appropriately scaled. The interface text has proven to be easily readable on a wide variety of displays, including phones and other small, handheld devices. Because the interface is web-based, users have the option of using the scaling functionality built into their web browser to make the text larger or smaller depending on their needs.

2.3 Technical Reliability

There are no obvious software bugs. In an effort to reduce the number of bugs in the production version of the interface, we have been developing and using an automated functional testing suite (based on the Selenium framework used by Google and other large web properties to test their interfaces). This gives us an automated and repeatable mechanism for ensuring the proper behavior of the interface from one release of the interface to the next.

There are no interface problems (e.g., all buttons function, screen graphics are displayed and updated appropriately, text on screens cannot be erased and/or is not cut off, etc.) Aside from our own testing efforts during the development cycle, we also have an active user community who would communicate any defects they discovered in the interface. We have provided log-in information in the appendix so that Premier Award judges can use the interface and experience its robustness for themselves.

Software crashes occur very rarely, if at all. We have **never** had an unplanned outage of the system. The interface has been unavailable **only** when we have taken the system off-line to perform system upgrades. We carefully plan the timing of these upgrades to minimize the impact on our users and provide ample warning and progress updates via email.

Screens can be viewed without scrolling. Mostly: see response in section 2.2.

Text on screens is appropriately scaled. Yes: see response in section 2.2.

3.0 ENGINEERING CONTENT

3.1 Accuracy: The content is accurate and error free.

Team-Maker and CATME content was chosen based on a review of the relevant literature and with the input of faculty having substantial experience managing student teams. The CATME system has five categories by which team members can contribute to the team. These categories were chosen based on a literature review and a rigorous empirical study.¹¹ After creating the peer evaluation instrument using a Likert scale format (strongly agree – strongly disagree), a team of nine university faculty with expertise in education, education assessment, various engineering disciplines, engineering education research, and management developed a behaviorally anchored rating scale (BARS) version of the instrument using a “critical incident methodology.”¹⁸ The BARS format has advantages including providing reliable ratings in less time than Likert scales.⁸ Empirical studies conducted using the BARS instrument will be published.

3.2 Appropriateness

There is a clear need for engineering students to learn teamwork skills—team-based instructional methods have definite benefits, graduates are expected to work in teams, and engineering accreditation criteria require that students have the ability to function on multi-disciplinary teams. Teaching teamwork skills is a complex challenge. Many faculty need and want to improve their students’ team experiences and welcome information and tools to help them implement best practices in their classes, if implementing these practices does not require too great an investment of their limited time. Team-Maker and CATME provide instructors with the support that they need to improve their educational practices in a way that respects faculty time.



APPENDIX

SUBMITTER AVAILABILITY

Matthew Ohland will be available August 1 - September 30, 2009, to work with EP/NEEDS staff as needed. Email to ohland@purdue.edu or call 765-496-1316.

ACKNOWLEDGEMENTS

Development supported by NSF award 0243254. Seed funding for Team-Maker was provided by the Educational Research & Methods Division of the American Society for Engineering Education and by Rose-Hulman Institute of Technology. The first version of Team-Maker was developed by the team of Ryan Cavanaugh, Matt Ellis, David Aramant, Mark Newheiser, Brian Klimaszewski, Brian Kopecky, and Robert Drake, advised by Don Bagert and Mark Ardis.

TUTORIAL FOR PREMIER AWARD JUDGES

See “Getting started with the CATME Team Tools System—a Tutorial” from pages 14-45.

PROMOTIONAL MATERIALS

Promotional flyers for Team-Maker and CATME are the last pages of this document. They are not numbered sequentially because these PDFs are used to print flyers for distribution.

JOURNAL / CONFERENCE PAPERS DESCRIBING THE COURSEWARE / ITS USE – see page 46.

REFERENCES – see page 47.

WORKSHOPS DELIVERED TO INTRODUCE THE SOFTWARE TO FACULTY

Loughry, Misty L., Peter Bamberger, Neal P. Mero, Matthew W. Ohland, and Greg L. Stewart, *Doing Well in Peer Evaluation of Team-Member Contributions*. Academy of Management Annual Meeting, August 3, 2007, Philadelphia, PA.

Bullard, L.F., C.J. Finelli, R.A. Layton, M.L. Loughry, M.W. Ohland, and H.R. Pomeranz, *Conducting Peer Evaluations using the Comprehensive Assessment of Team Member Effectiveness*, American Society of Engineering Education, Chicago, IL, June 18, 2006.

Layton, R.A., M.L. Loughry, M.W. Ohland, and H.R. Pomeranz, *Tools for Team Assignments and Peer Evaluations*, ASEE/IEEE Frontiers in Education, October 9, 2007.

Layton, R.A., M.L. Loughry, M.W. Ohland, and H.R. Pomeranz, *Assigning Students to Teams: Scholarship, Practice, and the Team-Maker Software System*, ASEE/IEEE Frontiers in Education Saratoga, NY, October 22, 2008.

Layton, R.A., M.L. Loughry, M.W. Ohland, and H.R. Pomeranz, *Resources for Student Teams: The Team-Maker and CATME Systems (and Why They Work)*, 2009 Process Education Conf., Gaston College, Belmont NC, July 9, 2009.

STATEMENTS OF REFERENCE

Users have provided many comments through unsolicited emails. Further, a user survey was sent to 180 faculty who have administered surveys in the past academic year; 60 responses were received July 3–12. We expect a significant increase in response rate once faculty return from summer activities. Selected comments are provided below:

Survey responses to “What do you like best about the Team-Maker system?”

- I like that it matches the schedules of the students and other parameters for me. Setting out the information sheets and trying to match them up manually can be quite difficult.
- Well designed and generally easy to use. Once we figured out the parameter settings that worked best for us, it does a great job creating and managing teams. Feedback has been enlightening and useful.

Survey responses to “What do you like best about the CATME system?”

- The exceptional conditions make it easy to identify dysfunction so I can remediate. Particularly with large-enrollment classes, this helps me find trouble spots quickly.
- CATME did a great job creating and managing teams. Feedback has been enlightening and useful.
- Easy to use, easy to set up, does not ask the student to use number or grade scale, covers the principal aspects of team performance.
- Helps to tease out specific behavior and performance issues instead of just giving someone an overall excellent, good, fair, poor

Survey responses to, “What do students say about the system?”

- Most like the anonymity and take the exercise seriously.
- They have thanked me in the comments for allowing them to review their teammates.
- They say it is pretty easy and straightforward.
- They have found it easy to use, and much better than completing paper evaluations.
- The majority of students like the system because they see it as objective. Students like receiving feedback from their peers.
- Comments have included “use this in every class.”

Other survey results:

- 92% (55/60) recommended CATME to others (it is possible that the other five use Team-Maker but do not use CATME).
- All respondents who use the Team-Maker system (35) have recommended it to others (Team-Maker was released in 2007 and doesn’t have as big a user base as CATME). Of those who do not use Team-Maker, 5 plan to use the system and 7 are considering it. The remaining do not use the system because they allow teams to self-select or because they form teams a special way.
- Since using the Team-Maker / CATME system, faculty say that they:
 - Collect more varied information for forming teams,
 - Collect more varied information on team functioning,
 - Collect team data more times in a term.
 - Are more likely to use teamwork in classes.

- Take a more active role in explaining teamwork.
 - Take a more active role in forming teams.
 - Take a more active role in managing teams.
- 94% of faculty said CATME's exceptional conditions were "somewhat useful" or "very useful"

Survey responses to "How did you form teams before using the system?"

- I let students pick their own teams.
- who knows...very unorganized
- gathered manual data, solicited preferences, and then manually sorted it out.

Survey responses to "How did you collect and use information about individual contributions to the team before using the CATME system?"

- Individual evaluations of team members - very painful - CATME is a big help!
- We had an in-house system that was not widely available across the college and required a great deal of behind the scenes support.

From unsolicited emails:

- Just a thanks for providing this service. I find it to be a very valuable tool in our ECE Senior Design class.
- I am a current user of your CATME website and have found great benefit in using it for evaluating team dynamics for senior design teams in my department.
- It's really a cool system. Here's one [student] comment we've gotten so far; I thought you'd like it: "Very accurate and to the point."
- We just finished our academic quarter and for the first time used CATME, both to make teams at the beginning of the quarter, and then at the end for peer evaluation. Overall, CATME was quite easy to use and seemed to work flawlessly, at least from the student perspective. My only serious suggestion for improvement would be to provide a way for the designer(s) to see what the surveys actually look like from the student side. [A preview feature has since been added to the interface.]
- Thanks for all you do - we LOVE CATME!
- Thank you for access to information on the CATME system. An online system for self and peer evaluation is very attractive for large classes.
- We've successfully completed our first attempt using Team-Maker and think this will be a very useful tool. The CATME web program was generally easy to use and very well designed.
- CATME gets at a lot of what they [my colleagues] want when they are asking for peer assessment. I wholeheartedly agree with you that an instrument like CATME teaches in a way that lecturing rarely does—just by identifying the range of behaviors for team performance and clarifying expectations across the team.
- I can't remember exactly where I heard about CATME, but I am pretty sure it was mentioned in an article I read in the past year. It looks pretty user friendly, so I shouldn't need any help - thanks for making the assessment available.



Getting started with the CATME Team Tools System—a Tutorial

Login information for the Premier Award reviewers:

URL: <https://www.catme.org>
Email Address: premier@catme.org
Password: DemoUser

LOGIN

[Find out more](#) or [request faculty account](#)
[Preview the instrument](#)

Email Address:
 Password:
 [Forgot your password?](#)

Login takes you directly to your personal Summary page (your “dashboard”) that shows your name at the top of the page. In this tutorial, your name is “Premier Award Judging”.

The dashboard shows your survey history. In this case, we have set up the system with two “completed” surveys that have been “released”. We will define these terms and use these completed surveys later in this tutorial—but for now we can ignore the “Demo” surveys.

Summary—Premier Award Judging

Class	Survey (Section)	Start	End	% Comp.	
Demo	Completed Peer Evaluation	06-Jul-2009	Released	<div><div></div></div> 100%	<input type="button" value="View Results"/>
Demo	Completed Teaming Survey	06-Jul-2009	Released	<div><div></div></div> 100%	<input type="button" value="Make Teams"/>

If you are not the first reviewer to log in, the dashboard may look like:

Summary—Premier Award Judging

Class	Survey (Section)	Start	End	% Comp.	
Tutorial	Team-Maker Survey	13-Jul-2009	7 days to go	<div><div></div></div> 0%	<input type="button" value="Make Teams"/> <input type="button" value="Send Reminder"/>
Demo	CATME Survey	17-Jul-2009	24-Jul-2009	<div><div></div></div> 0%	
Demo	Completed Peer Evaluation	06-Jul-2009	Released	<div><div></div></div> 100%	<input type="button" value="View Results"/>
Demo	Completed Teaming Survey	06-Jul-2009	Released	<div><div></div></div> 100%	<input type="button" value="Make Teams"/>

Select “My Profile” to go to the Profile Editor where you enter information about yourself and your institution.

Profile Editor

[Save](#) [Save and Return](#) [Cancel](#)

First Name:	<input type="text" value="Premier Award"/>	Email:	<input type="text" value="premier@catme.org"/>
Last Name:	<input type="text" value="Judging"/>	Phone:	<input type="text"/>
Password:	<input type="text"/>	School:	<input type="text" value="Virginia Tech"/>
Confirm:	<input type="text"/>	Time Zone:	<input type="text" value="US Eastern (GMT-5:00)"/>

☒ Use multi-screen "wizard" interface when creating classes/surveys

“Save and Return” returns you to the dashboard.

If you are a faculty member at the beginning of a term, the first thing to do in the CATME Team Tools System is create a class. “Add New Class” takes you to a multi-screen “wizard” that steps you through the process of setting up a new class. The screens are self-explanatory, so we’ll show the screen shots of the wizard with minimal comment.

Create Class

[Cancel](#)

Welcome!

The next several screens will guide you through the process of entering the basic information required to set up a class in the CATME system. After completing these screens, you will then have the opportunity to use a different set of screens to configure one or more surveys that will be taken by the students in the class.

Help is available at any time-- just click the [Help](#) link located in the upper-right corner above.

[Next >>](#)

The class name is the instructor’s choice. Let’s use the class name “Tutorial”.

Basic Class Information

[Cancel](#)

Please enter the following basic information which describes the new class. Many of the fields have been pre-filled based on the information you supplied when registering for the CATME system, though you are free to change any values you wish to. You must at least enter a name for this new class.

Class:	<input type="text" value="Tutorial"/>	School:	<input type="text" value="Virginia Tech"/>
Term:	<input type="text" value="Summer"/> <input type="text" value="2009"/>	Time Zone:	<input type="text" value="US Eastern (GMT-5:00)"/>
Type:	<input type="text" value="Lab"/>		

[Next >>](#)

Leave the box checked to enable feedback from the system to the student.

Extra Messages to Students

Cancel

The CATME peer evaluation system will analyze the peer review data and flag certain "exceptional conditions". Normally, the results that students see will include a brief alert whenever the CATME system recognizes one of these conditions that might affect that student (for a more complete description of these conditions and the corresponding messages seen by students, look [here](#)).

You may choose not to display these additional messages by unchecking the box below. If you are unsure, leave the messages enabled. This setting has no effect on Team-Maker type surveys.

☒ Enable extra messages in students' results

<< Back

Next >>

There is no user input necessary on the next screen, it merely confirms that you've completed the class setup process.

Class Setup Complete

Cancel

Congratulations!

You have now completed entering all information for the new class. Thank you for using the CATME system.

You will now be taken to a screen where you may modify any of the information you entered on the previous screens. You may also click the "Add Survey" button to create survey(s) for different groups of students in the class. Click the "Cancel" button on the next page to be returned to your personal summary page.

In the future you may choose to create classes more efficiently by simply entering all of the information into a single form like the one on the next page, rather than entering the data with the multi-screen "wizard" that you have just completed. Simply click the "My Profile" button on your personal summary page and uncheck the appropriate box near the bottom of the profile page.

Done

"Done" returns you to the Class Editor page that summarizes all the information you just entered. You may make changes if needed.

Class Editor

Save

Save and Return

Cancel

Class: Tutorial

School: Virginia Tech

Term: Summer 2009

Time Zone: US Eastern (GMT-5:00)

Type: Lab

☒ Enable extra messages in students' results

Add Survey

Delete Class

“Save and Return” saves the class and returns you to the Summary page, where the new class is now listed. “No surveys defined” indicates that you have not yet created any surveys for this new class.

Summary—Premier Award Judging					Add New Class My Profile	
Class	Survey (Section)	Start	End	% Comp.		
Tutorial				<div></div> 0%	No surveys defined	
Class	Survey (Section)	Start	End	% Comp.		
Demo	Completed Peer Evaluation	06-Jul-2009	Released	<div></div> 100%	View Results	
Demo	Completed Teaming Survey	06-Jul-2009	Released	<div></div> 100%	Make Teams	

To summarize so far, you have just created a new class called “Tutorial” and your survey history shows two previous surveys for the class “Demo”. This concludes the initial set-up for a new class. You are ready to create a survey for the class.



Creating and Administering a Team-Maker Survey

Start from the Summary page. You’ve created your class (“Tutorial”) but no surveys are defined.

Summary—Premier Award Judging

[Add New Class](#)
[My Profile](#)

Class	Survey (Section)	Start	End	% Comp.	
Tutorial				<div style="width: 0%; height: 10px; background-color: red;"></div> 0%	No surveys defined

Class	Survey (Section)	Start	End	% Comp.	
Demo	Completed Peer Evaluation	06-Jul-2009	Released	<div style="width: 100%; height: 10px; background-color: green;"></div> 100%	View Results
Demo	Completed Teaming Survey	06-Jul-2009	Released	<div style="width: 100%; height: 10px; background-color: green;"></div> 100%	Make Teams

Clicking either the class name link (“Tutorial”) or the “No surveys defined” link takes you to the Class Editor page.

Class Editor

[Save](#)
[Save and Return](#)
[Cancel](#)

Class:

School:

Term:

Time Zone:

Type:

☒ Enable extra messages in students' results

[Add Survey](#)

[Delete Class](#)

“Add Survey” takes you to a multi-screen “wizard” that steps you through the process of setting up a survey. The screens are self-explanatory, so we’ll show the screen shots of the wizard with minimal comment.

Create Survey

[Cancel](#)

The next several screens will guide you through the process of entering the basic information required to set up a survey in the system. If you wish to create multiple surveys for a given class, simply repeat this process by clicking the **"Add Survey"** button on the Class Editor page.

Before you begin entering the survey data, we recommend that you prepare a file containing information about the students from the class who will be participating in this survey, because you will need this file later in the survey creation process. **Information about preparing these files can be found [here](#).** Note that if you have created other surveys for this class, you will also be given the option of simply importing the student list from a previous survey.

Help is available at any time-- just click the [Help](#) link located in the upper-right corner above.

[Next >>](#)

At the beginning of a term you would typically create a Team-Maker survey.

Pick Survey Type

Cancel Continue

- ☒ **Team-Maker**
Gather student demographic information and assign students to teams.
- ☐ **CATME BARS**
Administer a behaviorally anchored peer evaluation and assess team member effectiveness.

Let's name this survey "Team-Maker Survey" and set the Start and End Dates.

Basic Survey Information

Cancel

Please enter a name for this survey and choose the start and end dates for the survey period. The survey will become active at 12am on the morning of the start date you choose and will close at midnight on the evening of the end date you choose. All students will automatically receive a notice when the survey opens, and students who have not yet completed the survey will receive another reminder 48 hours before the survey closes.

Survey Name:
Start Date:
End Date:

Next >>

"Next" takes you to the Survey Content screen used to customize the survey to ask the questions you want to use to form teams. Scrolling down the list of surveyed categories shows the complete set of questions available. Check or uncheck the boxes to create your custom survey.

For the purposes of the tutorial (so that what appears on your screen matches what appears in the screen shots shown here), you might want to use the four default categories. In this example, the surveyed categories are Gender, Race, GPA, and Schedule.

Survey Content

Cancel

Team-Maker uses student responses to a set of demographic questions in an effort to form the most optimal teams possible. Research has shown that scheduling constraints, gender and racial balance, and overall GPA are the most critical factors when forming teams, but a variety of other survey questions are also available (for more detail regarding each question look [here](#)).

You may choose to modify the content of the survey by selecting/de-selecting items from the list below.

;

Surveyed Categories:

<input checked="" type="checkbox"/>	Gender
<input checked="" type="checkbox"/>	Race
<input checked="" type="checkbox"/>	GPA
<input type="checkbox"/>	Prerequisite Course Gra
<input checked="" type="checkbox"/>	Schedule
<input type="checkbox"/>	Weekend Meetings

You may also edit the initial survey intro text displayed to students:

Edit Survey Intro

<< Back Next >>

“Edit Survey Intro” allows you to edit the Instructions Text seen by your students when the survey is emailed to them. You can personalize the survey so that your students know it is being created and administered by you.

Edit Instructions Text

SaveSave and ReturnCancel

You may modify the text in space below. If you would like a preview of how the message is going to look on the students' screens, click the "**Preview Text**" button underneath the editing area. Use the three buttons above to save your changes or cancel without saving any changes.

Instructions Text:

Team-Maker collects information about you and your classmates to form teams according to criteria specified by your instructor. For the best teaming experience, please answer each question completely and accurately. Your responses to the survey questions are considered confidential.

Preview Text

Team-Maker collects information about you and your classmates to form teams according to criteria specified by your instructor. For the best teaming experience, please answer each question completely and accurately. Your responses to the survey questions are considered confidential.

“Save and Return” returns you to the wizard.

The next screen in the wizard asks you to Import Students From File.

Load Students

Cancel

Now you need to load one or more lists of students who will be participating in this survey. Information on the appropriate format for these files can be found [here](#).

The imported list of students (along with any errors encountered) will be displayed below

Import Students From File

Student list is empty

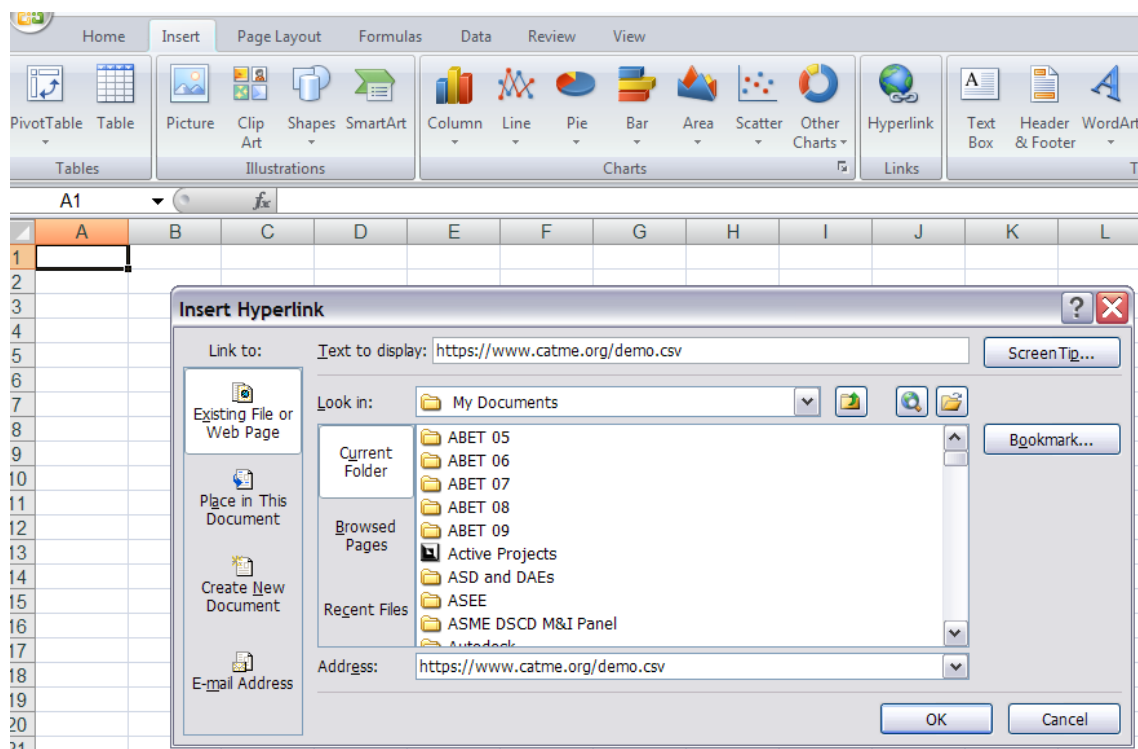
The file import action expects to read either a comma-separated values (CSV) file or a tab-delimited text file. The common way to create these files is to get all the student data into a spreadsheet and save the file in one of the two accepted formats. An excerpt from a sample CSV file for Team-Maker is shown below.

First	Last	Email	ID
Chris	Adams	chris@sysiphus.com	12
Phil	Anderson	phil@sysiphus.com	41
Joyce	Christiansen	joyce@sysiphus.com	42
Eve	Clark	eve@sysiphus.com	54
Jamie	Cook	jamie@sysiphus.com	32

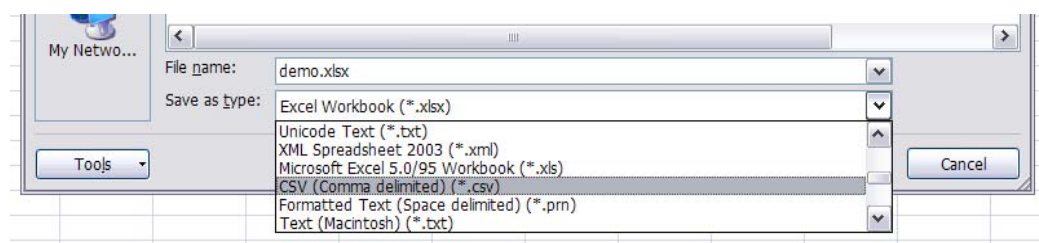
To save you the trouble of creating this file from scratch, we've provided a copy for you at

<https://www.catme.org/demo.csv>

To get this file into an MS Excel 2007 spreadsheet, under the “Insert” tab, select the “Hyperlink” button. In the dialog window that appears, type in the URL given above.



Press “OK” and click on the link that appears to import the data into the spreadsheet. Then save the file in CSV format in a convenient folder on your computer.



From the Load Students window use “Browse...” to find the CSV file on your computer and “Import” to upload the file to the CATME/Team-Maker system.

Limitations and requirements for these fields (and for additional fields not shown here) are described in the system Help. We will mention however that the “ID” field is intended to be the student’s university ID number. This ID is always known to you, the instructor, but not by the CATME Team Tools System research team. All personal identifiers are removed before data are stored for research purposes.

Once the data are imported, the student information appears in the Survey Editor window. (To save space, we show only a partial screen-shot here.)

Load Students

Cancel

Now you need to load one or more lists of students who will be participating in this survey. Information on the appropriate format for these files can be found [here](#).

If you wish to load several different student lists into the same survey, be sure to use the "Append" button—the "Replace" button will discard any existing student lists and import the new student list you've selected.

Import Students From File

Browse...

Replace Append

<< Back Next >>

Name	Student ID	Email
Adams, Chris	12	chris@sysiphus.com
Anderson, Phil	41	phil@sysiphus.com
Christiansen, Joyce	42	joyce@sysiphus.com
Clark, Eve	54	eve@sysiphus.com

The next screen in the wizard allows Faculty delegation, a useful feature for team-taught courses and large multi-section courses for which you may wish to allow other faculty (or teaching assistants) access to your survey information. We will skip this feature for now and move to the next screen, which concludes setting up a Team-Maker survey!

Survey Setup Complete

Congratulations!

You have now completed entering all information for the new survey. Thank you for using the system.

You will now be taken to a screen where you may modify any of the information you entered on the previous screens. Click the "Cancel" button on the next page to return to the class summary page.

In the future you may choose to create surveys more efficiently by simply entering all of the information into a single form like the one on the next page, rather than entering the data with the multi-screen "wizard" that you have just completed. Simply click the "My Profile" button on your personal summary page and uncheck the appropriate box near the bottom of the profile page.

Done

“Done” takes us to the Survey Editor where all of the parameters you just set using the wizard interface are displayed in one place you may continue to edit if need be. (Again, to save space, we show only a partial screen-shot here.)

Prof
Judging
 Class
Tutorial
 Term
Summer 2009
 Format
Lab
 School
Virginia Tech

Survey Name:
 Surveyed Categories:

☒ Gender
☒ Race
☒ GPA
☐ Prerequisite Course Grade
☒ Schedule
☐ Weekend Meetings

Start Date: Jul 16 2009
 End Date: Jul 23 2009

Preview instrument as student:

Name	Student ID	Email
Adams, Chris	12	chris@sysiphus.com
Anderson, Phil	41	phil@sysiphus.com
Christiansen, Joyce	42	joyce@sysiphus.com
Clark, Eve	54	eve@sysiphus.com

Selecting a student’s name takes you to a window in which you can edit the student information, delete the student from the course, or other actions.

First Name:
 Last Name:
 Student ID:
 Email:

Hit the “Cancel” button to exit the Student Editor and return to the Survey Editor

“Preview” allows you to see how the survey will appear to your students.

This is the first screen the student will see once he or she has logged onto the system. It should be the custom introduction you wrote using “Edit Survey Intro”. If you want to return to the Survey Editor to modify the Instructions, you may.

Instructions

[<< Return Home](#) [Take Survey >>](#)

Team-Maker collects information about you and your classmates to form teams according to criteria specified by your instructor. For the best teaming experience, please answer each question completely and accurately. Your responses to the survey questions are considered confidential.

When the student selects “Take Survey”, page 1 of the survey appears. The elements of the survey should be the items you box-checked on the Survey Editor page. In this example, you may recall we selected the following survey categories: Gender, Race, GPA, and Schedule.

Demographic Survey

[<< Return Home](#) [Continue >>](#)

What is your gender?

Make a selection ▼

Please indicate the racial/ethnic group with which you most identify:

Make a selection ▼

Your overall GPA is:

Please check the times that you are busy and unavailable for group work:

(You may select entire rows or columns by clicking the column/row headers)

Make Busy	Mon	Tue	Wed	Thu	Fri	Sat	Sun
8:00am	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9:00am	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10:00am	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11:00am	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12:00pm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1:00pm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2:00pm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3:00pm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4:00pm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5:00pm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6:00pm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7:00pm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8:00pm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9:00pm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[<< Return Home](#) [Continue >>](#)

On completing the survey, students are given the opportunity to address you directly with confidential comments.

Confidential Comments to Instructor

[Finish](#)

Thank you for taking the time to fill out our survey. We would love to have your comments or feedback in the box below.

On the Survey Editor page, “Save and Return” saves the survey and returns you to the Class Editor. Once the start date arrives, the system automatically emails your students with individual links to the survey. The “Make Teams” and “Send Reminder” buttons appear.

Class Editor

[Save](#)

[Save and Return](#)

[Cancel](#)

Class:

School:

Term:

Time Zone:

Type:

☒ Enable extra messages in students' results

[Add Survey](#)

Class	Survey (Section)	Start	End	% Comp.
Tutorial	Team-Maker Survey	13-Jul-2009	7 days to go	<div><div></div></div> 0%

[Make Teams](#)

[Send Reminder](#)

The system sends out automatic reminders, though you may use the “Send Reminder” button to send reminder emails to students who have not yet completed the survey. As students complete the survey, the % Complete “fuel-gage” bar fills-in until it reaches 100% or until the End Date arrives.

From the Class Editor, select “Save and Return” to return to the dashboard. The survey you just created should appear with 0% completion as shown below.

Summary—Premier Award Judging

[Add New Class](#)

[My Profile](#)

Class	Survey (Section)	Start	End	% Comp.
Tutorial	Team-Maker Survey	13-Jul-2009	7 days to go	<div><div></div></div> 0%
Demo	Completed Peer Evaluation	06-Jul-2009	Released	<div><div></div></div> 100%
Demo	Completed Teaming Survey	06-Jul-2009	Released	<div><div></div></div> 100%

[Make Teams](#)

[Send Reminder](#)

[View Results](#)

[Make Teams](#)

Make teams using the Demo Class and the Completed Teaming Survey.

Since you don't have any actual students to respond to the survey you just made, we've provided a completed set of survey responses in the Class called "Demo" and the survey called "Completed Teaming Survey". The fuel gage for this class shows 100% response rate.

To form teams, select the "Make Teams" button for the "Completed Teaming Survey".

The "Choose Parameters" screen appears. This is the screen on which you set the parameters and weights for forming teams according to your preferences.

You select a team size. You select a weight for each category in the survey. Try the settings shown:

- a maximum team size of four
- gender and race not considered
- GPA set to "Group Dissimilar" (for heterogeneity on a team)
- schedule set to a high weight for "Group Similar" (for schedule compatibility on a team).

Choose Parameters

CancelView Teams/DataMake New Teams

Survey	Class	Term	Format	Prof	School
Completed Teaming Survey	Demo	Summer 2009	Lab	Judging	Virginia Tech

Maximum team size 4

Gender

Ignore

Don't Outnumber

Male (19)
Female (5)

79%

20%

Race

Ignore

Don't Outnumber

White (19)
Black (2)
Hispanic (2)
Asian (1)

79%

8%

8%

4%

GPA

Group Dissimilar

Ignore

Group Similar

Above 3.66 (3)
2.67 - 3.66 (14)
1.67 - 2.66 (5)
0.67 - 1.66 (2)
Below 0.67 ()

12%

58%

20%

8%

0%

Schedule

Ignore

Group Similar

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
8:00am	83%	70%	83%	70%	83%	75%	75%
9:00am	75%	70%	75%	70%	75%	75%	79%
10:00am	100%	66%	100%	66%	100%	87%	87%
11:00am	45%	33%	45%	33%	45%	58%	58%
12:00pm	45%	45%	45%	45%	45%	79%	83%
1:00pm	54%	54%	62%	75%	62%	58%	58%
2:00pm	70%	66%	75%	79%	83%	58%	45%
3:00pm	70%	66%	75%	79%	83%	37%	29%
4:00pm	45%	45%	45%	45%	62%	37%	29%
5:00pm	41%	41%	41%	41%	54%	37%	29%
6:00pm	75%	75%	75%	75%	79%	66%	62%
7:00pm	62%	62%	62%	62%	70%	66%	54%
8:00pm	54%	66%	54%	58%	58%	62%	58%
9:00pm	54%	66%	54%	58%	58%	62%	45%

(showing percentage of students busy, by hour)

27

“Make New Teams” begins the algorithm for assigning students to teams according to these weights you have selected. While the system attempts to make teams to satisfy the criteria you set, the following “Creating Teams” screen appears.

Creating Teams

Cancel

Please be patient, this could take several minutes.

The team formation code is now performing several passes over the data in order to find the best team assignments. No fewer than three and no more than twenty passes will be performed. There is a maximum processing time limit of 20 minutes.

If this class is divided into multiple sections, each section will be processed individually with 3-20 passes performed for each section. The 20 minute time limit applies to the total processing for all sections, so the processing for an individual section will only consume a fraction of this 20 minute period.

The screen will refresh automatically with status updates showing completed passes.

Pass 6: lowest score 6.17, total score 87.50 (1 seconds)

Pass 5: lowest score 6.17, total score 87.67 (1 seconds)

Pass 4: lowest score 6.17, total score 81.83 (0 seconds)

Pass 3: lowest score 6.17, total score 88.83 (1 seconds)

Pass 2: lowest score 6.17, total score 84.83 (1 seconds)

Pass 1: lowest score 6.17, total score 85.67 (1 seconds)

When complete, the first set of team assignments appears. Your team assignments may be different from those shown below because the algorithm finds local, not global, maxima. (To save space, only the first three teams are shown here.)

Team Assignments

Cancel

Change Params

Make New Teams

Save Teams

Survey	Class	Term	Format	Prof	School
Completed Teaming Survey	Demo	Summer 2009	Lab	Judging	Virginia Tech
Display options: <input checked="" type="checkbox"/> Enable page controls <input type="checkbox"/> Show detailed data Re-Display					
Name	Student ID	Email	Team Name		
<input type="checkbox"/> Devereaux, Mike	64	mike@sysiphus.com	1		
<input type="checkbox"/> Hart, Steve	51	steve@sysiphus.com			
<input type="checkbox"/> Woodman, Toby	63	toby@sysiphus.com			
<input type="checkbox"/> Wright, Terry	14	terry@sysiphus.com			
<input type="checkbox"/> Cook, Jamie	32	jamie@sysiphus.com	2		
<input type="checkbox"/> Davis, Matt	62	matt@sysiphus.com			
<input type="checkbox"/> Dickinson, Ted	34	ted@sysiphus.com			
<input type="checkbox"/> Johnson, Barbara	52	barbara@sysiphus.com			
<input type="checkbox"/> Adams, Chris	12	chris@sysiphus.com	3		
<input type="checkbox"/> Clark, Eve	54	eve@sysiphus.com			
<input type="checkbox"/> Fields, Robin	13	robin@sysiphus.com			
<input type="checkbox"/> Nicholson, Gene	22	gene@sysiphus.com			

To examine more closely the characteristics of each team, check the “Show detailed data” box and “Re-Display” button. In this view, one can see the mix of Sex, Race, GPA, etc. for each team. A portion of this screen is shown below.

ols ☒ Show detailed data

Re-Display

Email	Team Name	Sex	Race	GPA	Schedule	Pct Busy	Tot (Max 9)
mike@sysiphus.com	1	Male	White	3.21 (2)	2 days/week with 2+ hr meeting blocks (schedule summary)	85%	
steve@sysiphus.com		Male	White	3.46 (4)		66%	
toby@sysiphus.com		Male	White	3.25 (3)		35%	
terry@sysiphus.com		Male	White	2.69 (2)		75%	
Scores:		0.00	0.00	2.00	-0.33		1.67
jamie@sysiphus.com	2	Female	White	2.29 (1)	1 days/week with 2+ hr meeting blocks (schedule summary)	67%	
matt@sysiphus.com		Female	White	3.97 (4)		60%	
ted@sysiphus.com		Female	White	3.40 (3)		74%	
barbara@sysiphus.com		Male	Hispanic	3.01 (2)		65%	
Scores:		0.00	0.00	4.00	-1.00		3.00
chris@sysiphus.com	3	Male	White	1.37 (1)	4 days/week with 2+ hr meeting blocks (schedule summary)	50%	
eve@sysiphus.com		Male	White	3.26 (3)		39%	
robin@sysiphus.com		Male	Asian	3.83 (4)		43%	
gene@sysiphus.com		Male	White	1.30 (1)		58%	
Scores:		0.00	0.00	2.00	1.67		3.67

The first thing to notice is that one student has an “Exceptional Condition” noted: the orange-colored Pct Busy box. This student, “Mike”, has indicated that he is busy 85% of the time, indicating either that he is too busy to participate in team activities or that he is unwilling to participate and has given false “busy” data. In either case, the instructor should contact Mike and council him on making time available for team activities consistent with the course objectives.

The second item to note is the schedule compatibility for each team. You can hover your mouse over the “schedule summary” for any team to see the extent of their schedule compatibility. For example, schedule compatibility for Team 3 is shown below. The “100%” blocks are those times during which 100% of the team is available to meet.

chris@sysiphus.com	<div>3</div>	Male	White	1.37 (1)	4 days/week with 2+ hr meeting blocks (schedule summary)	50%										
eve@sysiphus.com		Male	White	3.26 (3)		39%										
robin@sysiphus.com		Male	Asian	3.83 (4)		43%										
gene@sysiphus.com		Male	White	1.30 (1)												
Scores:		0.00	0.00	2.00												
						8:00am	0%	0%	0%	0%	0%	25%	25%			
						9:00am	25%	0%	25%	0%	25%	25%	25%			
						10:00am	0%	25%	0%	25%	0%	0%	25%			
						11:00am	25%	50%	25%	50%	25%	75%	75%			
						12:00pm	25%	25%	25%	25%	25%	25%	25%			
						1:00pm	50%	75%	75%	50%	50%	75%	75%			
						2:00pm	25%	50%	50%	25%	25%	75%	75%			
						3:00pm	25%	50%	50%	25%	25%	100%	100%			
						4:00pm	50%	50%	50%	50%	50%	100%	100%			
						5:00pm	75%	75%	75%	75%	75%	100%	100%			
						6:00pm	50%	50%	50%	50%	50%	75%	75%			
						7:00pm	75%	75%	75%	75%	75%	75%	75%			
						8:00pm	75%	75%	75%	100%	100%	100%	100%			
						9:00pm	75%	75%	75%	100%	100%	100%	100%			

If a set of teams is unsatisfactory, “Change Params” and try a new set of weights on your parameters. Iterate until you are satisfied with the results. Once a set of teams is satisfactory, you can edit team names if desired, then “Save Teams”.

Since you have just reassigned teams for the Demo Class, the system asks if you want to “release” the results, i.e., do you want to inform the students of their new team assignments?

Release Results

[Cancel](#)

Survey	Class	Term	Format	Prof	School
Completed Teaming Survey	Demo	Summer 2009	Lab	Judging	Virginia Tech

Do you wish to release these team assignments?

You may choose to make the team assignment information and survey data available to the students in the class and/or the research team. The researchers will see the team assignment information and the student survey responses, but the students' names and email addresses will be stripped out of the data. Students will see the names and email addresses of the other members of their team along with information on when the other members of the team are available to meet.

Preview results page for student: [Adams, Chris](#) [Preview](#)

You may also choose not to release the data to either group. You will still be able to use these team assignments to populate student lists for future surveys (via the **Import Students from Survey** control). However, we ask that you make this data available to the research team unless you have a compelling reason not to do so.

Hit the **Cancel** button above if you wish to decide later.

Release team assignments to: [Students and Researchers](#) [Release](#)

“Preview” allows you to see the team-assignment screen sent to the students if you release the results, letting them know the names and email addresses of the other members of their team plus a schedule compatibility table.

Team Information

[Return to Main Page](#)

The other members of your team:

Phil Anderson	phil@sysiphus.com
John Jameson	john@sysiphus.com
Sally Washington	sally@sysiphus.com

The following table shows what percentage of your team is available to meet during each hour:

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
8:00am	0%	0%	0%	0%	0%	0%	0%
9:00am	0%	0%	0%	0%	0%	0%	0%
10:00am	0%	0%	0%	0%	0%	0%	0%
11:00am	50%	75%	50%	75%	50%	75%	75%
12:00pm	50%	50%	50%	50%	50%	50%	50%
1:00pm	25%	75%	75%	50%	50%	75%	75%
2:00pm	25%	75%	75%	50%	50%	75%	100%
3:00pm	25%	75%	75%	50%	50%	75%	100%
4:00pm	100%	100%	100%	100%	75%	75%	100%
5:00pm	100%	100%	100%	100%	75%	75%	100%
6:00pm	25%	25%	25%	25%	25%	25%	25%
7:00pm	25%	25%	25%	25%	25%	25%	25%
8:00pm	50%	50%	50%	75%	50%	50%	75%
9:00pm	50%	50%	50%	75%	50%	50%	75%

(Hover mouse over hours with partial availability above to see which team members are available)

The numbers in the schedule compatibility table indicate the percentage of the team available during each block of time. Hovering the mouse over one of the time blocks indicates who is available. For example, mousing over Wednesday at 11am yields the information that both Sally and John are available to work.

Team Information

[Return to Main Page](#)

The other members of your team:

Phil Anderson phil@sysiphus.com
 John Jameson john@sysiphus.com
 Sally Washington sally@sysiphus.com

The following table shows what percentage of your team is available to meet during each hour:

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
8:00am	0%	0%	0%	0%	0%	0%	0%
9:00am	0%	0%	0%	0%	0%	0%	0%
10:00am	0%	0%	0%	0%	0%	0%	0%
11:00am	50%	75%	50%	75%	50%	75%	75%
12:00pm	50%	50%	Available: Sally Washington, John Jameson				
1:00pm	25%	75%	75%	50%	50%	75%	75%
2:00pm	25%	75%	75%	50%	50%	75%	100%
3:00pm	25%	75%	75%	50%	50%	75%	100%
4:00pm	100%	100%	100%	100%	75%	75%	100%
5:00pm	100%	100%	100%	100%	75%	75%	100%
6:00pm	25%	25%	25%	25%	25%	25%	25%
7:00pm	25%	25%	25%	25%	25%	25%	25%
8:00pm	50%	50%	50%	75%	50%	50%	75%
9:00pm	50%	50%	50%	75%	50%	50%	75%

(Hover mouse over hours with partial availability above to see which team members are available)

The Release Results page includes a pull-down menu for selecting the target audience for the release of results.

Release Results

[Cancel](#)

Survey	Class	Term	Format	Prof	School
Completed Teaming Survey	Demo	Summer 2009	Lab	Judging	Virginia Tech

Do you wish to release these team assignments?

You may choose to make the team assignment information and survey data available to the students in the class and/or the research team. The researchers will see the team assignment information and the student survey responses, but the students' names and email addresses will be stripped out of the data. Students will see the names and email addresses of the other members of their team along with information on when the other members of the team are available to meet.

Preview results page for student: [Preview](#)

You may also choose not to release the data to either group. You will still be able to use these team assignments to populate student lists for future surveys (via the **Import Students from Survey** control). However, we ask that you make this data available to the research team unless you have a compelling reason not to do so.

Hit the **Cancel** button above if you wish to decide later.

Release team assignments to: [Release](#)

- Students and Researchers
- Researchers only
- Students only
- Nobody (no further reminders)

If the team assignments are not released, your Summary page includes the “Survey data not released” link.

Summary—Premier Award Judging					Add New Class My Profile	
Class	Survey (Section)	Start	End	% Comp.		
Demo	Completed Teaming Survey	06-Jul-2009	13-Jul-2009	<div><div></div></div> 100%	Survey data not released	
Class	Survey (Section)	Start	End	% Comp.		
Tutorial	Team-Maker Survey	13-Jul-2009	7 days to go	<div><div></div></div> 0%	Make Teams	Send Reminder
Demo	Completed Peer Evaluation	06-Jul-2009	Released	<div><div></div></div> 100%	View Results	
Demo	Completed Teaming Survey	06-Jul-2009	13-Jul-2009	<div><div></div></div> 100%	Make Teams	

Once the team assignments are released, the End Date on the Summary page indicates “Released”.

Summary—Premier Award Judging					Add New Class My Profile	
Class	Survey (Section)	Start	End	% Comp.		
Tutorial	Team-Maker Survey	13-Jul-2009	7 days to go	<div><div></div></div> 0%	Make Teams	Send Reminder
Demo	Completed Peer Evaluation	06-Jul-2009	Released	<div><div></div></div> 100%	View Results	
Demo	Completed Teaming Survey	06-Jul-2009	Released	<div><div></div></div> 100%	Make Teams	

Now that teams are assigned, you might want to copy and paste these team assignments to a spreadsheet for use separate from the CATME Team Tools System.

Return to the *Demo Class, Completed Teaming Survey*.

Select “Make Teams”, and “View Teams Data” to show once the team assignments again. Uncheck the “Enable page controls” option and hit “Re-Display”—this will turn off the checkboxes and pop-up texts for cleaner data. Now select and copy the student data and paste it into your favorite spreadsheet.

Team Assignments					
<div> Cancel Change Params Make New Teams Save Teams </div>					
Survey	Class	Term	Format	Prof	School
Completed Teaming Survey	Demo	Summer 2009	Lab	Judging	Virginia Tech
Display options: <input type="checkbox"/> Enable page controls <input type="checkbox"/> Show detailed data Re-Display					
Name	Student ID	Email	Team Name		
Devereaux, Mike	64	mike@sysiphus.com	1		
Hart, Steve	51	steve@sysiphus.com	1		
Woodman, Toby	63	toby@sysiphus.com	1		
Wright, Terry	14	terry@sysiphus.com	1		
Anderson, Phil	41	phil@sysiphus.com	2		
Christiansen, Joyce	42	joyce@sysiphus.com	2		
Jones, Mary	21	mary@sysiphus.com	2		
Walker, Bob	33	bob@sysiphus.com	2		
Davis, Matt	62	matt@sysiphus.com	3		
Johnson, Barbara	52	barbara@sysiphus.com	3		
O'Neil, Mark	43	mark@sysiphus.com	3		
Rubens, Alice	53	alice@sysiphus.com	3		
Adams, Chris	12	chris@sysiphus.com	4		
Clark, Eve	54	eve@sysiphus.com	4		
Cook, Jamie	32	jamie@sysiphus.com	4		
Singer, Janet	44	janet@sysiphus.com	4		
Dickinson, Ted	34	ted@sysiphus.com	5		
Fields, Brian	31	brian@sysiphus.com	5		
Jameson, John	61	john@sysiphus.com	5		
Smith, Pat	11	pat@sysiphus.com	5		
Fields, Robin	13	robin@sysiphus.com	6		
Nicholson, Gene	22	gene@sysiphus.com	6		
Tyler, Alex	24	alex@sysiphus.com	6		
Washington, Sally	23	sally@sysiphus.com	6		

“Cancel” returns you to the Summary page with the teams unchanged.

This concludes the Team-Maker demonstration.



Creating and Administering a CATME Peer Evaluation

Starting from the dashboard, we wish to create a new peer evaluation survey. We will create the survey for the “Demo” class.

Summary—Premier Award Judging [Add New Class](#) [My Profile](#)

Class	Survey (Section)	Start	End	% Comp.	
Tutorial	Team-Maker Survey	13-Jul-2009	7 days to go	<div style="width: 0%; background-color: red;"></div> 0%	Make Teams Send Reminder
Demo	Completed Peer Evaluation	06-Jul-2009	Released	<div style="width: 100%; background-color: green;"></div> 100%	View Results
Demo	Completed Teaming Survey	06-Jul-2009	Released	<div style="width: 100%; background-color: green;"></div> 100%	Make Teams

Click on the Class link “Demo” to go to the Class Editor.

Class Editor [Save](#) [Save and Return](#) [Cancel](#)

Class: School:

Term: Time Zone:

Type: ☒ Enable extra messages in students' results

[Add Survey](#)

Class	Survey (Section)	Start	End	% Comp.	
Demo	Completed Peer Evaluation	06-Jul-2009	Released	<div style="width: 100%; background-color: green;"></div> 100%	View Results
Demo	Completed Teaming Survey	06-Jul-2009	Released	<div style="width: 100%; background-color: green;"></div> 100%	Make Teams

“Add Survey” to create a CATME peer-evaluation survey. Once again, the wizard will step you through the process.

Create Survey

Cancel

The next several screens will guide you through the process of entering the basic information required to set up a survey in the system. If you wish to create multiple surveys for a given class, simply repeat this process by clicking the “Add Survey” button on the Class Editor page.

Before you begin entering the survey data, we recommend that you prepare a file containing information about the students from the class who will be participating in this survey, because you will need this file later in the survey creation process. **Information about preparing these files can be found [here](#).** Note that if you have created other surveys for this class, you will also be given the option of simply importing the student list from a previous survey.

Help is available at any time-- just click the [Help](#) link located in the upper-right corner above.

Next >>

This time we’ll select CATME BARS to create and administer a self- and peer-evaluation.

Pick Survey Type

Cancel Continue

- ☐ **Team-Maker**
Gather student demographic information and assign students to teams.
- ☒ **CATME BARS**
Administer a behaviorally anchored peer evaluation and assess team member effectiveness.

The first screen asks for a survey name and start and end dates. Let’s use “CATME Survey” as the survey name.

Basic Survey Information

Cancel

Please enter a name for this survey and choose the start and end dates for the survey period. The survey will become active at 12am on the morning of the start date you choose and will close at midnight on the evening of the end date you choose. All students will automatically receive a notice when the survey opens, and students who have not yet completed the survey will receive another reminder 48 hours before the survey closes.

Survey Name:

Start Date:

End Date:

Next >>

Next we select the content of the survey. This is where you select the categories of effective team behavior on which you wish your students to rate themselves and their teammates.

Survey Content Cancel

The standard CATME instrument asks each student to rate themselves and their fellow team members on five different behavioral axes, followed by additional screen of follow-up questions that assess each student's personal feelings about each of their fellow team members.

You may choose to modify the content of the survey by selecting/de-selecting items from the list below.

Surveyed Categories:

- ☒ Contributing to Work
- ☒ Interacting with Teammates
- ☒ Keeping Team on Track
- ☒ Expecting Quality
- ☒ Having Knowledge/Skills
- ☒ Follow-Up Questions

You may also edit the initial survey intro text displayed to students: Edit Survey Intro

<< Back Next >>

Again, “Edit Survey Intro” allows you to customize the survey instructions. You got the opportunity to see this functionality in the Team-Maker section above, so we won’t repeat ourselves here.

“Next” brings you to the Load Students screen. Here, if a Team-Maker survey was already administered and released for this class, the pull-down menu allows you to import the students and their team assignments directly into the CATME peer evaluation system.

Select the “Completed Teaming Survey” to import the teams.

Load Students Cancel

Now you need to load one or more lists of students who will be participating in this survey. You may import a student list from a previous survey for this class, if one exists, using the lefthand control. You may import a list of students from a file using the righthand control (information on the appropriate format for these files can be found [here](#)).

The imported list of students (along with any errors encountered) will be displayed below

Import Students From Survey

Select Survey
Select Survey
Completed Peer Evaluation
Completed Teaming Survey

Import Students From File

Browse...
Import

<< Back Next >>

Student list is empty

The screen shows the student teams once the importing is complete.

“Next” gives you the opportunity for Faculty delegation, which we will again skip over.

“Next” takes you to the concluding screen of the wizard. You have successfully created a CATME survey.

Survey Setup Complete

Congratulations!

You have now completed entering all information for the new survey. Thank you for using the system.

You will now be taken to a screen where you may modify any of the information you entered on the previous screens. Click the **"Cancel"** button on the next page to return to the class summary page.

In the future you may choose to create surveys more efficiently by simply entering all of the information into a single form like the one on the next page, rather than entering the data with the multi-screen "wizard" that you have just completed. Simply click the **"My Profile"** button on your personal summary page and uncheck the appropriate box near the bottom of the profile page.

Done

“Done” returns you to the Survey Editor.

“Preview” allows you to see the student-view of the survey before activate it. The first screen the students will see is the instructions you wrote.

Instructions

<< Return Home

Take Survey >>

For each way of contributing to the team, rate each of your teammates (including yourself) by clicking on the button next to the list of behaviors that most closely describes how that team member behaved during the period being evaluated.

Your goal is to answer each question as accurately as possible. Please complete the evaluation in private and do not discuss your answers with anyone else.

Next the students will see a series of screens like that shown below asking them to rate themselves and their teammates on the categories you selected using a behaviorally-anchored scale.

Contributing to the Team's Work

[<< Back](#)
[Continue >>](#)

Chris Adams				
Brian Fields				
Mary Jones				
Phil Anderson				
Description of Rating				
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<ul style="list-style-type: none"> Does more or higher-quality work than expected. Makes important contributions that improve the team's work. Helps teammates who are having difficulty completing their work.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Demonstrates behaviors described above and below.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<ul style="list-style-type: none"> Completes a fair share of the team's work with acceptable quality. Keeps commitments and completes assignments on time. Helps teammates who are having difficulty when it is easy or important.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Demonstrates behaviors described above and below.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<ul style="list-style-type: none"> Does not do a fair share of the team's work. Delivers sloppy or incomplete work. Misses deadlines. Is late, unprepared, or absent for team meetings. Does not assist teammates. Quits if the work becomes difficult.

After the category screens, the Follow-Up Questions appear, if you had selected them as part of the survey.

Follow-up Questions

[<< Back](#)
[Continue >>](#)

SD	D	N	A	SA
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

Brian Fields				
Mary Jones				
Phil Anderson				
Description of Rating				
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I would gladly work with this individual in the future.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	If I were selecting members for a future work team, I would pick this person.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I would avoid working with this person in the future.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I like this person as an individual
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I consider this person to be a friend
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I enjoy spending time with this person

Finally, students are given an opportunity to give you confidential feedback.

Confidential Comments to Instructor

[Finish](#)

Thank you for taking the time to fill out our survey. We would love to have your comments or feedback in the box below.

Having completed your preview of the student view of the survey, “Save and Return” returns you to the Class Editor where you can see that for this class you have successfully created a CATME Survey for the Demo Class.

Class Editor

[Save](#)[Save and Return](#)[Cancel](#)Class: School: Term: Time Zone: Type: ☒ Enable extra messages in students' results[Add Survey](#)

Class	Survey (Section)	Start	End	% Comp.	
Demo	CATME Survey	17-Jul-2009	24-Jul-2009	<div></div> 0%	
Demo	Completed Peer Evaluation	06-Jul-2009	Released	<div></div> 100%	View Results
Demo	Completed Teaming Survey	06-Jul-2009	Released	<div></div> 100%	Make Teams

Returning now to the dashboard, the survey you just created should appear with 0% completion as shown below.

Summary—Premier Award Judging

[Add New Class](#)[My Profile](#)

Class	Survey (Section)	Start	End	% Comp.	
Tutorial	Team-Maker Survey	13-Jul-2009	7 days to go	<div></div> 0%	Make Teams Send Reminder
Demo	CATME Survey	17-Jul-2009	24-Jul-2009	<div></div> 0%	
Demo	Completed Peer Evaluation	06-Jul-2009	Released	<div></div> 100%	View Results
Demo	Completed Teaming Survey	06-Jul-2009	Released	<div></div> 100%	Make Teams

Evaluating Completed Peer Evaluations using the Demo Class.

Since you don't have any actual students to respond to the survey you just made, we've provided a completed set of survey responses in the survey called "Completed Peer Evaluation". The fuel gage for this class shows 100% response rate.

Select the "View Results" button for the "Completed Peer Evaluation" for the "Demo" class. The numbers indicate a student's average rating in each category on a scale from 1 to 5.

Summary Report

View Comments

View Raw Data

Return to Main Page

Survey

Class

Term

Format

Prof

School

Completed Peer Evaluation

Demo

Summer 2009

Lab

Judging

Virginia Tech

Display options:

☐ Enable pop-up texts

☐ Show raw "Adjustment Factor"

Re-Display

Preview results page for student:

Adams, Chris

Preview

Student	Team ID	Contrib. to Team	Interact w/ Team	Keeping on Track	Expect Quality	Having KSAs	Adj Factor (w/ Self)	Adj Factor (w/o Self)	Note
Clark, E.	1	4.0	3.8	4.2	4.5	4.2	1.05	1.05	
Cook, J.	1	4.5	4.2	4.0	4.5	4.0	1.05	1.05	Conf
Devereaux, M.	1	3.8	4.0	3.5	3.2	3.5	0.91	0.88	
Walker, B.	1	4.0	4.0	3.8	3.8	3.5	1.00	0.88	
Christiansen, J.	2	4.2	4.5	4.0	4.5	4.8	1.01	1.00	
Jameson, J.	2	4.2	4.5	4.2	4.5	4.0	1.00	1.05	Under
Jones, M.	2	4.5	4.5	4.0	4.5	4.2	1.00	1.00	
Woodman, T.	2	4.8	4.2	4.0	4.0	4.5	1.00	1.00	
Adams, C.	3	3.2	4.0	3.8	3.8	3.2	0.93	1.00	Under
Anderson, P.	3	4.8	4.2	3.8	3.8	4.2	1.05	1.05	Under
Singer, J.	3	3.5	4.2	4.2	3.8	3.8	1.01	1.01	
Wright, T.	3	3.5	4.0	3.8	3.8	4.2	1.00	1.00	
Davis, M.	4	4.0	4.2	4.0	4.5	4.2	1.05	1.05	High
Johnson, B.	4	3.8	4.0	3.5	3.2	3.8	1.00	0.91	
O'Neil, M.	4	3.5	3.8	3.5	3.5	3.8	1.00	0.94	
Rubens, A.	4	3.8	3.8	4.0	3.2	3.2	1.00	0.91	
Dickinson, T.	5	3.5	4.0	3.8	3.5	4.0	0.94	0.90	
Fields, B.	5	3.5	4.0	3.8	4.2	3.2	0.94	0.89	
Hart, S.	5	3.8	4.2	3.8	3.8	3.8	1.00	0.95	Conf
Smith, P.	5	4.8	4.8	4.5	4.8	4.5	1.05	1.05	
Fields, R.	6	4.0	4.2	4.5	4.5	4.0	1.00	1.00	
Nicholson, G.	6	4.5	4.5	4.8	4.5	4.8	1.03	1.01	
Tyler, A.	6	4.8	4.5	4.5	4.5	4.2	1.01	1.05	Under
Washington, S.	6	4.2	4.2	4.5	4.8	4.5	1.00	1.00	

Release data to:

Students and Researchers

Release

Adjustment factor. The system automatically computes the adjustment factor—the quotient of the individual's average rating and their team's average rating. Instructor judgment and knowledge of the team dynamics are necessary in applying these factors.

In *formative* assessment, the adjustment factor and exceptional conditions are used to identify teams that could benefit from consultation with the instructor to identify and remediate issues that might be hampering team performance. For example, Teams 1 and 5 have the special condition "Conflict" indicated. The instructor may want to interview these teams to find out what issues have arisen and intervene to help them improve their performance.

In *summative* assessment, the adjustment factor is used as a multiplier, operating on the team grade for the assignment to produce an individual grade for the assignment. For example, suppose Team 3 received a score of 95 on a project. Adams' grade would be 95×0.93 if we used the factor that included Adams' self-evaluation; Adams' grade would be 95×1.0 if we used the factor that excluded Adams' self-evaluation. Adams is "Underconfident, giving himself lower ratings than his teammates give him.

Exceptional conditions. Checking the "Enable pop-up texts" box and clicking the "Re-Display" button provides feedback to the instructor with pop-up texts when the cursor is hovered over a shaded cell in the display. The rightmost column of "Notes" is where exceptional conditions are noted.

Low—a student who rates him/herself as ineffective and who also receives "ineffective" ratings by teammates.

Overconfident—a student rated as "ineffective" by teammates but rates him/herself as much more effective.

High—a student who is rated as highly effective according to both teammate and self ratings.

Underconfident—a student rated as highly effective by teammates but who under- rates her/himself.

Manipulator—a student who rates him/ herself as highly effective yet receives "ineffective" ratings by teammates. Such a student may be trying to unfairly influence the grade distribution.

Conflict—a team in which there is considerable disagreement among the various raters about the effectiveness of an individual student.

Clique—a team in which cliques appear to have formed. The ratings show that subsets of the team rate members of their subset high and members of other subsets low.

An instructor's involvement and judgment are critical when exceptional conditions are flagged. Though the formal study of these exceptions has not been completed, faculty using the system have reported that both the clique and conflict conditions have accurately provided early warnings of those conditions.

Mousing over the "Adjustment Factor" cells brings up advice regarding the use of the adjustment.

Student	Team ID	Contrib. to Team	Interact w/ Team	Keeping on Track	Expect Quality	Having KSAs	Adj Factor (w/ Self)	Adj Factor (w/o Self)	Note
Clark, E.	1	4.0	3.8	4.2	4.5	4.2	1.05	1.05	
Cook, J.	1	4.5	4.2	4.0	4.5	4.0	1.05	1.05	Conf
Devereaux, M.	1	3.8	4.0	3.5	3.2	3.5	Note: This team has apparently encountered the "Manipulator", "Personality Conflict", or "Clique" condition (see notes in next column for more information). The "adjustment factor" value reported here may not be reliable, and you may wish to simply "flatten" these values to 1.00 when evaluating the students' grades.		
Walker, B.	1	4.0	4.0	3.8	3.8	3.5			
Christiansen, J.	2	4.2	4.5	4.0	4.5	4.8			
Jameson, J.	2	4.2	4.5	4.2	4.5	4.0			
Jones, M.	2	4.5	4.5	4.0	4.5	4.2			
Woodman, T.	2	4.8	4.2	4.0	4.0	4.5			
Adams, C.	3	3.2	4.0	3.8	3.8	3.2			

Mousing over the “Exceptional Condition” Note cells brings up advice regarding potential team dynamics.

Student	Team ID	Contrib. to Team	Interact w/ Team	Keeping on Track	Expect Quality	Having KSAs	Adj Factor (w/ Self)	Adj Factor (w/o Self)	Note
Clark, E.	1	4.0	3.8	4.2	4.5	4.2	1.05	1.05	
Cook, J.	1	4.5	4.2	4.0	4.5	4.0	1.05	1.05	Conf
Devereaux, M.	1	3.8	4.0	3.5	3.2	3.5	0.91	0.88	"Personality Conflict": This student has rated one or more team members a 2 or less, but the median rating of the student(s) by the other team members gives a score of at least 3. Perhaps this student just didn't get along with the student(s) that got poor ratings?
Walker, B.	1	4.0	4.0	3.8	3.8	3.5	1.00	0.88	
Christiansen, J.	2	4.2	4.5	4.0	4.5	4.8	1.01	1.00	
Jameson, J.	2	4.2	4.5	4.2	4.5	4.0	1.00	1.05	
Jones, M.	2	4.5	4.5	4.0	4.5	4.2	1.00	1.00	
Woodman, T.	2	4.8	4.2	4.0	4.0	4.5	1.00	1.00	
Adams, C.	3	3.2	4.0	3.8	3.8	3.2	0.93	1.00	Under
Anderson, P.	3	4.8	4.2	3.8	3.8	4.2	1.05	1.05	Under

Survey comments. The “View Comments” button brings up a screen on which are collected all the comments students made, in the format shown below. From this screen one may either return to the summary report page or the main page.

Survey Comments

[Return to Summary](#)
[Return to Main Page](#)

Survey	Class	Term	Format	Prof	School
Demo Peer Evaluation	Interface Testing	Summer 2009	Lecture w/ Lab	Faculty	Hard Knocks
Student	Team ID	Comment			
Clark, E.	1	We the people, in order to form a more perfect union, establish justice, ensure domestic tranquility, provide for the common defense, promote the general welfare, and secure the blessings of liberty for ourselves and our posterity, do ordain and establish this Constitution for the United States of America.			
Hart, S.	1	This is a test comment. Had this been a real comment, there would have been more complaining...			
O'Neil, M.	1	This is a test comment. Had this been a real comment, there would have been more complaining...			
Washington, S.	1	We the people, in order to form a more perfect union, establish justice, ensure domestic tranquility, provide for the common defense, promote the general welfare, and secure the blessings of liberty for ourselves and our posterity, do ordain and establish this Constitution for the United States of America.			
Christiansen, J.	2	Testing <i>embedded</i> <HTML> tags, "can't handle strangely quoted strings?, & & other <it; interesting > sequences			
Johnson, B.	2	We the people, in order to form a more perfect union, establish justice, ensure domestic tranquility, provide for the common defense, promote the general welfare, and secure the blessings of liberty for ourselves and our posterity, do ordain and establish this Constitution for the United States of America.			
Jones, M.	2	We the people, in order to form a more perfect union, establish justice, ensure domestic tranquility, provide for the common defense, promote the general			

Raw data. “View Raw Data” produces the following expanded screen, showing individual student ratings for each team member in each category. The numbers in a row are the ratings received by a student from each of the raters (members of their team). Student comments are shown below the table of ratings. Comments are useful in interpreting the ratings and in helping the instructor decide if the team needs assistance in working out problems.

Raw Data

[Return to Summary](#)
[Return to Main Page](#)

Survey	Class	Term	Format	Prof	School
Completed Peer Evaluation	Demo	Summer 2009	Lab	Judging	Virginia Tech

 Display options: ☒ Enable pop-up texts ☐ Show raw "Adjustment Factor"

[Re-Display](#)

Student Name	Student ID	Team ID	Rater #	Rater 1					Rater 2					Rater 3					Rater 4					Adj Factor (w/ Self)	Adj Factor (w/o Self)	Note
				C	I	K	E	H	C	I	K	E	H	C	I	K	E	H	C	I	K	E	H			
Clark, Eve	54	1	1	3	3	4	5	4	5	5	5	5	5	4	3	4	4	4	4	4	4	4	4	1.05	1.05	Conf
Cook, Jamie	32	1	2	5	4	5	5	5	4	5	5	3	4	3	4	5	4	5	5	3	4	4	4	1.05	1.05	
Devereaux, Mike	64	1	3	4	5	4	4	4	3	2	2	2	1	4	4	4	3	5	4	5	4	4	4	0.91	0.88	
Walker, Bob	33	1	4	3	2	3	3	2	3	4	3	3	2	5	5	4	4	5	5	5	5	5	5	1.00	0.88	
Christiansen, Joyce	42	2	1	4	5	4	5	5	5	5	4	5	5	4	5	5	5	5	4	3	3	3	4	1.01	1.00	Under
Jameson, John	61	2	2	5	5	5	5	4	3	4	2	3	3	5	4	5	5	5	4	5	5	5	5	1.00	1.05	
Jones, Mary	21	2	3	5	5	5	5	5	5	3	5	3	5	4	5	5	5	5	3	3	3	3	3	1.00	1.00	
Woodman, Toby	63	2	4	5	5	5	5	5	5	5	3	3	3	4	4	4	4	5	5	3	4	4	5	1.00	1.00	
Adams, Chris	12	3	1	3	3	3	3	2	4	5	4	4	4	3	3	4	4	3	3	5	4	4	4	0.93	1.00	Under
Anderson, Phil	41	3	2	5	5	4	5	5	4	4	3	3	3	5	4	4	3	5	5	4	4	4	4	1.05	1.05	Under
Singer, Janet	44	3	3	2	3	3	3	2	5	5	5	5	5	3	4	5	3	4	4	5	4	4	4	1.01	1.01	
Wright, Terry	14	3	4	4	4	5	5	5	2	2	1	1	3	4	5	5	5	4	4	5	4	4	5	1.00	1.00	
Davis, Matt	62	4	1	4	4	4	4	4	5	4	5	5	5	5	5	5	5	5	2	4	2	4	3	1.05	1.05	High
Johnson, Barbara	52	4	2	1	2	1	2	1	5	5	5	3	4	4	4	3	4	5	5	5	5	4	5	1.00	0.91	
O'Neil, Mark	43	4	3	4	5	4	4	4	2	5	3	3	3	4	4	4	4	3	4	3	3	3	4	1.00	0.94	
Rubens, Alice	53	4	4	3	2	2	2	2	5	4	4	4	3	3	5	5	3	4	4	4	5	4	4	1.00	0.91	
Dickinson, Ted	34	5	1	4	4	4	4	5	5	5	5	4	4	1	2	1	2	3	4	5	5	4	4	0.94	0.90	
Fields, Brian	31	5	2	5	5	5	5	5	4	5	4	5	4	1	2	2	2	1	4	4	4	5	3	0.94	0.89	
Hart, Steve	51	5	3	5	5	4	4	5	5	5	5	5	5	3	5	4	4	4	4	2	2	2	1	1.00	0.95	Conf
Smith, Pat	11	5	4	5	4	4	5	5	5	5	5	5	5	5	5	5	5	5	4	5	4	4	3	1.05	1.05	
Fields, Robin	13	6	1	4	4	4	4	4	3	4	4	4	3	4	4	5	5	5	5	5	5	5	4	1.00	1.00	
Nicholson, Gene	22	6	2	5	5	5	4	5	5	5	5	5	5	4	4	5	5	4	4	4	4	4	5	1.03	1.01	
Tyler, Alex	24	6	3	5	5	5	5	5	5	5	5	5	4	4	3	3	4	3	5	5	5	4	5	1.01	1.05	Under
Washington, Sally	23	6	4	4	5	5	5	5	4	4	4	4	4	4	3	4	5	4	5	5	5	5	5	1.00	1.00	

Student Name	Student ID	Team ID	Rater #	Rater 1						Rater 2						Rater 3						Rater 4						
				Q1	Q2	Q3	Q4	Q5	Q6	Q1	Q2	Q3	Q4	Q5	Q6	Q1	Q2	Q3	Q4	Q5	Q6	Q1	Q2	Q3	Q4	Q5	Q6	
Clark, Eve	54	1	1							4	4	2	3	2	3		4	2	4	4	4	4	4	2	4	4	5	
Cook, Jamie	32	1	2	4	5	1	5	5	5							4	2	4	3	3	2	2	2	4	3	2	2	
Devereaux, Mike	64	1	3	2	2	5	1	1	2	5	5	2	5	5	5							5	5	1	5	5	4	
<																												

Preview. Return to the Summary Report by clicking the “Return to Summary” button. We can preview a results page for a particular student by selecting a name from the drop-down window and selecting “Preview”. We’ll use the second student, Jamie Cook, to illustrate.

The first item the student sees is advice regarding the potential conflict he or she has with their teammate Mike Devereaux. This feedback is customized based on the particular exceptional condition.

Survey Results

[Return to Main Page](#)

Your evaluation indicates that Mike Devereaux contributed very little very little to the project. This is not consistent with the assessment of the rest of the team. Your instructor may require additional information to clarify what happened in your team.

Contributing to the Team's Work

How You Rated Yourself			How Your Teammates Rated You	
			Average Rating for You and Your Team	
			Description of Rating	
			<ul style="list-style-type: none"> Does more or higher-quality work than expected. Makes important contributions that improve the team's work. Helps teammates who are having difficulty completing their work. 	
			Demonstrates behaviors described above and below.	
			<ul style="list-style-type: none"> Completes a fair share of the team's work with acceptable quality. Keeps commitments and completes assignments on time. Helps teammates who are having difficulty when it is easy or important. 	
			Demonstrates behaviors described above and below.	
			<ul style="list-style-type: none"> Does not do a fair share of the team's work. Delivers sloppy or incomplete work. Misses deadlines. Is late, unprepared, or absent for team meetings. Does not assist teammates. Quits if the work becomes difficult. 	

Research suggests the following behaviors will improve your ratings in this area:

- Do a fair share of the team's work.
- Fulfill your responsibilities to the team.
- Come to team meetings prepared.
- Complete your work in a timely manner.
- Do work that is complete and accurate.
- Make important contributions to the team's final product.
- Keep trying when faced with difficult situations.
- Offer to help teammates when it is appropriate.

As the students scrolls down this screen, he or she will find the ratings results for each of the surveyed categories, plus advice on how to improve their ratings in that category.

The dashboard now shows that you have created two surveys with 0% Completion (no actual students) and the two 100% Completed surveys we provided for the demonstration.

Summary—Premier Award Judging

[Add New Class](#)
[My Profile](#)

Class	Survey (Section)	Start	End	% Comp.	
Tutorial	Team-Maker Survey	13-Jul-2009	7 days to go	<div><div></div></div> 0%	Make Teams Send Reminder
Demo	CATME Survey	17-Jul-2009	24-Jul-2009	<div><div></div></div> 0%	
Demo	Completed Peer Evaluation	06-Jul-2009	Released	<div><div></div></div> 100%	View Results
Demo	Completed Teaming Survey	06-Jul-2009	Released	<div><div></div></div> 100%	Make Teams

This concludes the CATME demonstration.



JOURNAL / CONFERENCE PAPERS DESCRIBING THE COURSEWARE / ITS USE

Ohland, M.W., M.L. Loughry, R.L. Carter, L.F. Bullard, R.M. Felder, C.J. Finelli, R.A. Layton, and D.G. Schmucker (2005). "Developing a Peer Evaluation Instrument that is Simple, Reliable, and Valid," in proc. *2005 American Society of Engineering Education Annual Conference*, Portland, Oregon.

Loughry, M.L., M.W. Ohland, and D.D. Moore, "Development of a Theory-Based Assessment of Team Member Effectiveness," *Annual Meeting of the Southern Management Association*, November 9-12, 2005.

Ohland, Matthew W., Hal R. Pomeranz, and Harlan W. Feinstein, "The Comprehensive Assessment of Team Member Effectiveness: A New Peer Evaluation Instrument," *Proceedings of the American Society of Engineering Education Annual Conference*, Chicago, IL, June 2006.

Ohland, M.W., and M.L. Loughry, "Designing a Peer Evaluation Instrument that is Simple, Reliable, and Valid: The Comprehensive Assessment of Team-Member Effectiveness," National Science Foundation—Drury University Conference on Assessment of Student Achievement, October 19-21, 2006.

Loughry, M.L., M.W. Ohland, and D.D. Moore, "Behaviorally Anchored Peer Evaluation of Team Member Effectiveness," *Annual Meeting of the Southern Management Association*, Clearwater, FL October 25-28, 2006.

Formation And Peer Evaluation: CATME Incorporates Team-Maker," *Proceedings of the American Society of Engineering Education Annual Conference*, Honolulu, HI, June 2007, 4 pages.

Loughry, M. L., Ohland, M. W., & Moore, D. D. 2007. Development of a theory-based assessment of team member effectiveness. *Educational and Psychological Measurement*, **67**: 505-524.

Layton, R.A., M.L. Loughry, and M.W. Ohland, "Design and Validation of a Web-Based System for Assigning Members to Teams Using Instructor-Specified Criteria," accepted with revisions to *Advances in Engineering Education*, September 10, 2008, Manuscript AAE-09-078.

These documents are appended to this application after the "REFERENCES" section. The page numbers will not follow in sequence because the PDFs of these publications will retain their original formatting.



REFERENCES

- ¹ Layton, R.A., M.L. Loughry, and M.W. Ohland (2009) "Design and Validation of a Web-Based System for Assigning Members to Teams Using Instructor-Specified Criteria," accepted with revisions to *Advances in Engineering Education*, September 10, 2008, Manuscript AAE-09-078.
- ² Ohland, M.W., M.L. Loughry, R.L. Carter, L.F. Bullard, R.M. Felder, C.J. Finelli, R.A. Layton, and D.G. Schmucker (2005). "Developing a Peer Evaluation Instrument that is Simple, Reliable, and Valid," in proc. *2005 American Society of Engineering Education Annual Conference*, Portland, Oregon.
- ³ Ohland, M.W., H.R. Pomeranz, and H.W. Feinstein (2006), "The Comprehensive Assessment of Team Member Effectiveness: A New Peer Evaluation Instrument," in proc. *American Society of Engineering Education Annual Conference*, Chicago, IL.
- ⁴ Johnson, D.W., R.T. Johnson, and K.A. Smith (1998), *Active learning: Cooperation in the college classroom*, Edina, MN: Interaction Book Co.
- ⁵ Felder, R.M. and Brent, R. (1994) *Cooperative Learning in Technical Courses: Procedures, Pitfalls, and Payoffs*. ERIC Document Reproduction Service, ED 377038.
- ⁶ Millis, B.J., and P.G. Cottell, Jr., *Cooperative Learning for Higher Education Faculty*, Phoenix, American Council on Education/Oryx Press, p. 194 (1998).
- ⁷ Mero, N.P., R.M. Guidice, and A.L. Anna, "The interacting effects of accountability and individual differences on rater response to a performance-rating task," *Journal of Applied Social Psychology*, 36(4), 795-819, 2006.
- ⁸ Ohland, M. W., Layton, R. A., Loughry, M. L., & Yuhasz, A. G. (2005). Effects of Behavioral Anchors on Peer Evaluation Reliability. *Journal of Engineering Education*, **94** (3): 319-326.
- ⁹ Kenny, D. A., & DePaulo, B. M. 1993. Do people know how others view them? An empirical and theoretical account. *Psychological Bulletin*, 114, 145-161.
- ¹⁰ Kruger, J. & Dunning, D (1999). Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology*, 77, 1121-1134.
- ¹¹ Loughry, M. L., Ohland, M. W., & Moore, D. D. 2007. Development of a theory-based assessment of team member effectiveness. *Educational and Psychological Measurement*, **67**: 505-524.
- ¹² Marin-Garcia, J. A., & Lloret, J. (2008). Improving teamwork with university engineering students. The effect of an assessment method to prevent shirking. *WSEAS Transactions on Advances in Engineering Education*, **1** (5): 1-11.
- ¹³ Heller, P. & Hollabaugh, M. (1992). Teaching Problem Solving through Cooperative Grouping. Part 2: Designing Problems and Structuring Groups. *Am. J. Phys.* **60**: 637-644.
- ¹⁴ Cordero, R., DiTomaso, N., & Farris, G.F. (1997). Gender and race/ethnic composition of technical work groups: Relationship to creative productivity and morale. *Journal of Engineering and Technology Management* **13**:205-221.
- ¹⁵ Kirchmeyer, Catherine (1993). Multicultural Task Groups: An Account of the Low Contribution Level of Minorities. *Small Group Research*, **24** (1): 127-148.
- ¹⁶ Rosser, S. (1998). Group work in science, engineering, and mathematics: Consequences of ignoring gender and race. *College Teaching*, **46**(3).
- ¹⁷ McLoughlin, Lisa A. (2005). Spotlighting: Emergent Gender Bias in Undergraduate Engineering Education. *Journal of Engineering Education* **94** (4):9.
- ¹⁸ Hedge, J. W., Bruskiewicz, K. T., Logan, K. K., Hanson, M. A., & Buck, D. (1999). *Crew resource management team and individual job analysis and rating scale development for air force tanker crews* (Technical Report No. 336). Minneapolis, MN: Personnel Decisions Research Institutes, Inc.