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ADAPTATION OF THE TEAM PROBLEM SOLVING ASSESSMENT TOOL FOR TEAMBUILDING APPLICATIONS

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ABSTRACT

Team building is popular with business, organizations and universities because of its ability to improve performance through group's processes. Even though teambuilding is commonly used by businesses, there are few tools that measure the effectiveness of teambuilding quantity. One author suggests that there is a large amount of anecdotal evidence that teambuilding is effective, but quantity measures of teambuilding related to the outcomes it produces exists. The purpose of this project was to adapt the Team Problem Solving Assessment Tool (TPSAT) by Armando J. Rotondi for teambuilding events. A Delphi approach was used with content experts to modify the instrument.

INTRODUCTION

Businesses rely on teams in their day-to-day operations (7, 15, 26). Teams are used because a group working toward a common purpose can more effectively develop creative solutions to the complex problems that businesses face in today's high paced environment (9). Teams are also used according to Scholtes because, "Major gains in quality and productivity most often results from teams...With proper training, teams can often tackle complex and chronic problems and come up with effective permanent solutions" (Scholtes as quoted in 27, p.6.) Team work increases the performance of an organization if the group is cohesive and focused (14). Performance is the ability of a team to meet certain goals and objectives within the organization and to accomplish them effectively and efficiently (14). Teambuilding is often used as a means of increasing a group's ability to work together and thus make them more productive (15).

Teambuilding is popular with businesses, organizations and universities because of its ability to increase performance by improving the group's processes (8). Teambuilding trainings range in their duration and activities. (13). Activities range from personality profile tests, ropes courses, themed dramatic experiences or desert adventures (3, 16). Each of these trainings has a unique ap-

proach to helping a group work more effectively.

Personality tests, such as the Matrixx System®, are frequently used to initiate group discussions about how the individuals in the group operate. This system has individuals to complete three tests to establish their dominant color and then defines the attributes of each color (18). Discussion follows with the group sharing how each color works and what strengths it possesses. It also includes discussion of how to work with individuals who are a different personality color (18). This aids a group in understanding why others reacted the way they have in past situations. Personality profile tests can be used alone or in conjunction with other teambuilding interventions.

Ropes courses are located outdoors and built on telephone poles or trees. These courses range in height from ground level initiatives to high ropes courses that can be as high as fifty feet (6). They are designed to safely challenge a group to solve unique, complex problems (22). During and at the conclusion of the event, a trained facilitator leads the group in discussion that focuses on what they are experiencing at that time and how they might transfer this back to their work environment (6).

Broderick and Pearce have suggested and developed an adaptation to outdoor ropes courses. Their development is that of a themed dramatic event that the group participates in, such as a play (3). The particular event they cited in their article is that of a Haunted House (3). The participants are immersed in the event and are again led through a discussion at the conclusion of the program that focuses on the same issues as outdoor ropes courses (3).

Desert adventures or any wilderness adventures are based on the Outward Bound model developed by Kurt Hahn (3). These trainings usually last several days where the team learns outdoor survival skills and then hikes, canoes, boats, bikes, etc. to a predetermined destination. During this grueling process, many aspects of teamwork naturally occur and are discussed by the members.

Even with this broad application, most of the interventions have the same basic objectives which include the following: to build trust between members of the team and within the organization, to teach decision-making and problem-solving skills, to develop a sense of ownership of the goals and objectives of the organization, to increase collaboration, and to provide a model of how to implement team processes in the organization (17). The assumption is by increasing a team's ability to work better together, it will increase their performance in that organization (14). Performance is defined as the number of goals met in a certain period of time (14).

Businesses use teambuilding for several different aspects of organizational development. First, teambuilding is used when new groups are being developed (16). This allows the members to recognize commonalities and begin to form relationships with each other. Second, is for the purpose of weaknesses in the dynamics of the group. These types of trainings focus on communication, problem-solving skills and conflict resolution skills. (16). Group formation and dysfunctionality of group dynamics are not the only reasons that teambuilding is used, but they are the most common. Even though teambuilding is commonly used by businesses, there are few tools that measure the effectiveness of teambuilding. One author suggests that there is a large amount of anecdotal evidence that teambuilding is effective, but no measurement of teambuilding

related to the outcomes it produces exists (3).

TEAMBUILDING MEASURES

Research articles suggests that there are several theoretical models of teamwork including Anderson & West's Team Climate Inventory (as cited in Ingram, 14), Team Effectiveness Factors, (2) and Integrated Teamwork Skill Dimensions (25). These tools establish theoretical frameworks to consider, but do not provide a way to measure teamwork. The Borrelli, Cable & Higgs's tool (2), was developed using data from a survey, but there is not a measurement device included in the model. These models do not provide a means to measure the outcomes that teambuilding may have produced in a group. They merely establish how a group should work together.

One instrument found, that has a theoretical basis and a way to quantify teambuilding, is Armando J. Rotondi's Team Problem Solving Assessment Tool (23, Appendix A.) Most teambuilding providers have some type of evaluation process that they implement at the end of an experience. However, few provide follow-up programs or evaluations to measure the long-term effects of teambuilding (17). Kipp & Kipp (16) suggest the ideal situation is: "Nothing gets better without follow-up behavioral contracts, periodic interventions; process checks and the like" (p. 139.) Teambuilding providers should not stray from post evaluations, but should also develop a continuous feedback process. Based on this approach, it seems important to offer a teambuilding program followed by periodic evaluations and activities to assess outcomes. This would help to determine if the outcomes are a result of teambuilding or other factors.

Before it can be determined if teambuilding has caused change in a group, it is important to know how the group was functioning prior to the teambuilding program. There needs to be an assessment tool developed that measures the outcomes relative to the programs implemented. This assessment tool would establish a base line for the team, which can then be used to measure outcomes of the teambuilding program.

The purpose of this project was to adapt the Team Problem Solving Assessment Tool (TPSAT) by Armando J. Rotondi (23) for teambuilding events. This tool was originally designed for the healthcare industry to assess the problem-solving potential that exists within a group. Rotondi's (23) instrument focuses on a team's efficiency when faced with a problem-solving situation. The modified tool focuses on a team's effectiveness in different problem-solving situations.

Problem-solving, in an investigative process, is used to develop a solution or solutions to an undesirable situation (10). Teambuilding is the method used to teach problem-solving skills to a team. During teambuilding, problem-solving methodology is taught to the team and then the team utilizes this method immediately.

Rotondi's TPSAT was chosen because of the quantitative component measurement system that the other models do not incorporate. The TPSAT was developed with the advice of eighteen group facilitation experts using a Delphi process (23) and then a committee of content experts developed the final product (23). This helped to establish the content validity of Rotondi's (23) tool. Once the existing TPSAT was modified for use in teambuilding, it could be used to establish a baseline of how a group was functioning prior to teambuilding. Baseline in-

formation could be used to develop a program tailored to the needs of the group. This would make teambuilding more effective for the participants. This tool can also be used in the post program assessment. To adapt this tool, a Delphi approach was utilized because of its ability to establish content validity and it was the process used to develop Rotondi's (23) instrument.

METHODS

The Delphi process is a technique that was first used in 1953 by employees of the Rand Corporation (12). One of the uses of the Delphi technique is the development and evaluations of programs (21). This technique was chosen for its ability to establish content validity and it was the process used in developing Rotondi's (23) tool.

The main objective of the Delphi process is for a group of experts to reach consensus on a given topic (12). The Delphi technique has many strengths that are beneficial to this study. The strengths include the following: the method is easy to understand for those involved in the process, information that is gained is of high quality because the members have many opportunities to provide feedback, and since the members will not meet, they maintain anonymity and are able to share their thoughts and feeling without fear of pressure from the other members (Somers, Baker & Isbell, 1984; as cited in 4).

The Delphi method includes the selection of content experts to participate in a study (12). In this study, the criteria used for the selection of members was that the participants needed to have ten or more years experience facilitating teambuilding. They needed to have conducted trainings for teambuilding facilitators, and/or have written research articles or books in the field. Based on this criteria and recommendations from professionals in the field, ten members were selected for this study. These ten individuals represent various teambuilding organizations and are the leaders in those organizations. After the Delphi group was selected, they were then asked to respond to multiple rounds of questions concerning a particular topic (12).

After the results were compiled, a summary was sent to the Delphi group to gain input. This process was continued until the group reached consensus (12). In this particular study, it required three rounds of feedback to reach consensus among the panel that the new tool was accurate. In the first round, the members were asked to rate Rotondi's (23) tool and provide suggestions for changes. In the second round, the members were to rank the adaptations that had been made and offer suggestions for modifications. In the third round, the members were asked to rank the criteria on the basis of distance to rescale the instrument. Rotondi (23) used a different panel of content experts to interpret the responses from the Delphi group. In this project, relevant research articles were used as a comparative standard to interpret results.

VALIDITY

The Delphi process was used for this project to establish content validity of the modified instrument through the use of content experts. The input of one member of the Delphi group is strengthened by the input of all the other members (12). This increases validity because members will challenge ideas of one another. Validity is also increased by the use of several rounds of questions to build consensus. The repeated rounds provides the panel with opportunities to re-

examine the information and constantly provide feedback until they are satisfied (12). The concern for validity is that the rate of return for the Delphi group will diminish as the number of rounds increases (12). In this study, there was a reduction of the return rate. In the last round, there was a 90% return rate, and in all other rounds there was a 100% return rate. In addition to using the Delphi members, research articles were used to interpret the responses. This method of interpretation was used as a standard of comparison for the responses.

Results

Round 1

In the initial round, the Delphi members were asked to rate each of the existing variables on a scale of one to five. This scale was developed to establish the relative importance of each variable. A score of five indicated that the variable was absolutely necessary for an assessment tool for teambuilding. A score of four designated that the variable was necessary with a few modifications. A score of three meant that the variable was necessary with several modifications. A two indicated that the variable concept was necessary but the content was not important. A score of one was indicative of a variable that was not necessary for inclusion in a teambuilding tool. They were also asked to provide any adaptations or suggest new variables and criteria.

The responses of all members of the group were compiled in a spreadsheet. Based on their suggestions and the information found in literature, the changes were made to the instrument.

The first variable was "Value of Team Process." This was modified from Rotondi's (23) variable of "Customer Values." From the responses gathered from the Delphi group, 90% of the respondents felt this category should remain in the tool. Most of the responses suggested changing the name from "Customer Values," to "Team or Individual Values". The variable was eventually named "Value of Team Process" because the Delphi group identified the importance of knowing how the group feels about working in a team, before teambuilding. This is supported in the literature by Conti & Kleiner (9). They state, "...not only does an organization need to be committed to the team concept but so does the team itself" (p. 28.) If the team is committed they will not self-destruct and they will increase their teamwork skills (9).

The next variable on Rotondi's (23) tool, "Team Expertise," was ranked necessary for this tool by only 20% of the members of the Delphi group. They did not see the relevance of this category to teambuilding. Instead a new variable was created, called "Team Relationship." This variable seeks to determine the comfort of the group members with each other and what functional development stage the group is experiencing. There are four stages of group development according to a theory by Burns (5). The stages are 'forming, storming, norming, and performing" (5, p.47). In each stage, a group is experiencing different challenges in the group process. In the formation stage, a group is in the initial stage of development (5). Members are usually friendly and are learning about each other in the group. The next stage is storming, in which members of the group are trying to determine their roles in a group. This can cause conflict between competing members who feel they should have the same role (5). It is during this time that the ground rules are established. The group is learning the strengths and weaknesses of each member through trial and error. In the norming phase, the group is

aware of each other's abilities and they begin to develop their style of working together (5). Finally, in performing, the group develops and adopts the style they will use to work through problems and is able to work in unison with each other (5).

The next category, "Team Interaction Style," was kept with few changes. 90% of the Delphi members determined it was important to assess how the members react to other member's opinions and perspectives. The Delphi group also stated that it was important to assess how members reacted when the group had opinions that differed. In effective teams, members must feel comfortable sharing information, even if they know their opinion differs from that of the group (1, 5). This provides an opportunity for team members to share information that other members may not know is available (11). The panel agreed that it was necessary to keep "Team Interaction Style" in the modified tool.

Rotondi's (23) next category was "Systematic Problem Exploration." Only 60% of the Delphi group thought this category was important. Rotondi (23) also has a variable called "Problem Definition." Seventy percent of the members indicated that this was important but they did not agree with the criteria listed. The criteria dealt with what the members know about a meeting, not what they know about a given problem. The majority of the Delphi group identified brainstorming and the process of implementation were of higher importance to teambuilding than identified in Rotondi's (23) tool. Research articles suggests that there is a process to problem-solving that starts by identifying the problem, brainstorming possible solutions, developing a solution, implementing the plan, and then evaluating the plan as it proceeds (10). This one variable was divided into three separate variables. The variables are "Problem Identification and Brainstorming," "Solution Development," and "Plan Implementation and Evaluation." Each of these categories allows a group to view how they utilize the problem-solving process.

"Meeting Facilitation" was the next variable in Rotondi's (23) tool. This has been changed to the "Leadership Styles" variable. Sixty percent of the members thought this variable should be retained. Their responses illustrated that it was more important to know what style of leadership a group most often uses and how the leader of a group was determined. The members did not feel that identifying what leadership style one person uses was as significant. According to Nurmi (19), there are four types of leadership styles. They are Autocratic, Democratic, Laissez-faire, and Synergistic (19). Each of these types of leaders have different ways of leading a group. The autocratic leader is in control of the group. Decisions are made based upon the leader's opinion. Democratic leaders share in the decision making process. They strive to achieve a compromise decision. Laissez-faire leaders exert little control or influence on a group. Decisions are made based on what the group feels is important. Synergistic leaders strive to develop solutions that no member of the team could have developed individually. Synergistic leadership leads to innovation (19).

Each of these styles is effective under the proper conditions. If a group has the ability to choose the right style of leader for the proper situation, it will be more successful. Perrin (20) states, "By recognizing that leadership is a group function to which all members can contribute, it helps develop a sense of teamwork. Sharing leadership, recognition, satisfaction, and responsibility ensures that all the resources of the group will

be used productively." (p.2) It is also important for the leader to utilize the resources he has available and not always ask his friends or closet co-workers to help with every project (20).

"Pressure to Solve the Problem" was Rotondi's (23) next variable. Thirty percent of the Delphi group thought that this variable should be part of the instrument. Ninety percent of the members requested the element of time be removed from the criteria. This variable was adapted to "Effort Shown in Previous Team Problem-Solving Situations." The original variable measured how a group responded to a predetermined timeline. The Delphi group thought outcomes were more important than time. This variable now assesses the team's effectiveness rather than their efficiency.

Ninety percent of the Delphi group highly ranked the variable, "Team Member Participation". They agreed in teambuilding it is important to know how well the members will participate. To function effectively as a team, input is needed from all participants to allow the group to utilize all of their resources (15). The Delphi group determined that knowledge of team member participation would assist them in customizing a teambuilding program.

Rotondi's (23) last variable was "Written Logs of Meetings". This category was ranked low by 90% of the members of the Delphi group. Some of them identified that it is important to capture all the thoughts that are shared during brainstorming. Roger von Oech discusses in his book the importance of writing ideas down so that they can be reviewed by the group to develop other ideas (28). This aspect was addressed in the new variable "Problem Identification and Brainstorming"

Scaling

Rotondi's (23) instrument has a broad scoring range. The scoring system ranges from zero to 100. The members of the Delphi group thought that this scale was very difficult to understand. For the modified tool the members felt that the scoring needed to be adapted to make it more understandable for the reader. With increased understanding, it is hoped that the feedback provided by the reader completing the tool would be more accurate.

To make the tool more understandable, the Delphi group suggested modifying the scoring system to a five-point scale. This scale will not have the range of Rotondi's (23) tool, but it will increase its reliability and useability. To establish that the scoring system is accurate, the Delphi group was asked to check each variable, the criteria in those variables and to scale the criterions distance. They were asked if the criterion for a score of three was a mean team situation and then if the one criteria and five criteria were the extremes of that variable. Ninety percent of the members responded and 100% of the respondents indicated that the criteria met these conditions.

Round 2

The above changes were made to the instrument and then it was returned to the members of the Delphi group for their feedback on the modifications. In this round, the members were asked to rank the changes that had been made using the same five-point scale as the first round. They were also asked if the tool was understandable and if they had any suggestions for changes in the variables or criterion.

All of the variables, with the exception of "Solution Development", were ranked as

100%. "Solution Development" has a 90% acceptance. The member who did not agree thought that the criteria needed rewording to make it more understandable. All the members felt that their previous concerns had been addressed with the modifications. They did have suggestions on the wording of some of the criterion sections to make them more readable and understandable.

Round 3

In the initial round of the Delphi process, all members expressed concern regarding the scoring system. In response, the scoring system was modified. It was important to identify if the modified scoring system and the criterion suggested in Round 1 was useable and appropriate. In order to make the instrument more useful, the criteria must be scaled on distance. To validate the criteria and establish the measurement scale, a third round of the Delphi process was necessary.

In the final round of the Delphi process, the members were requested to read the criteria for each variable. After reading the criteria for each variable, they were asked to determine the position and distance relative to each other. The panel was asked to identify a median position and then to scale the extreme of the spectrum in terms of distance. In this round, only 90% of the Delphi group responded. However, 100% of the respondents indicated that each of the criteria in all of the variables matched the assigned scores. This establishes that the measurement scaling has an equal distance among all data points.

With the establishment of the five-point measurement system, it is assumed that the scores are of equal distance. Upon completion of the assessment, a team would receive a score ranging between 10 and 50. This is based on the 10 variables and the possible points in each category. This scoring system is based upon a continuum and provides the information to compare teambuilding skills. This type of information could provide the facilitator with information to further customize a teambuilding program and identify relationships among variables.

IMPLICATIONS

Teambuilding has become a popular approach with organizations. There is little information on the impacts of these programs upon organizational outcomes. The focus of this manuscript was to identify an instrument that could be utilized to design an effective evaluation system for teambuilding. In trying to identify a measurement device, it was found that most of the systems used to evaluate teambuilding are anecdotal. The one instrument identified that could be a basis for evaluation was Rotondi's (23) instrument. This instrument was developed for the health-care industry and did not have wide application to other organizational settings. The focus of this project became the adaptation of this instrument for use with varying audiences. Important in this modification was the establishment of the variables used to define teambuilding and what system should be used to score those variables. The most difficult aspect of this modification was adjusting the measurement system. A Delphi approach was used with content experts to modify the instrument. The initial phase of this project was to establish content validity. This became the important aspect of this project. Significant changes were made in the structure of the instrument, based upon the expert panel and research articles. Variables, criteria and the measurement system were rescaled.

With the instrument modified and its content validity established, the Teambuilding Baseline Tool (Appendix B) will need to have its reliability tested. The usability will also need to be tested for the instrument's ability to discriminate and project a score that can evaluate the outcomes of teambuilding. An evaluation system will need to be developed, based upon this instrument. This evaluation will include pre- and post-test measurements. Program leaders and clients will have to be involved in this process. This will help make the tool useable in a variety of settings. In these tests, there will also need to be clinical assessment, that is, the ability of the measurement system to precisely index individual and organizational scores. These scores will be used to diagnose and prescribe intervention programs.

The results of this section could then be compared to the baseline from the pre-teambuilding assessment. Net change could be assessed in relation to outcomes. Questions could also be included for participants to complete a self-evaluation. This will allow the participant to express how he feels teambuilding has affected his teamwork skills. Gaining this information would also provide more evidence to the effectiveness, or the lack of effectiveness of teambuilding. With both the quantitative measure and the qualitative data, a company will be able to determine if teambuilding has had an effect and if the cost is worth the outcomes.

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Team Problem Solving Assessment Tool
Armando J. Rotondi

Variable	Description	Score 0-100	Criteria
Customer's Values	The extent to which the team understands the values (needs, concerns, expectations, desires) and considers them during problem solving.	100	• The team will take the time to truly understand the customer's values, and considers these essential to developing the best solution.
		20	• The team honestly believes the customer's values are important but will not take the time to fully understand them.
		0	• The team does not understand the customer's values, and does not believe they are important to developing a solution.
Team member expertise	The amount of domain specific knowledge a team contains.	100	• The team has both theoretical and practical expertise (those close to the process, the ones that know and understand it in a day-to-day sense) about the problem.
		75	• All members of the team are theoretical experts.
		30	• All members of the team are practical experts.
		0	• The team does not have expert practitioners or theoreticians.
Team interaction style	How the members react to other members' opinions and perspectives when they are different from their own.	100	• The team will have in-depth win/win discussions, which reveal the rational behind members' opinions and perspectives. The members will make a genuine effort to understand each other's ideas and perspectives during their discussion, and search for insights in opposing views in order to develop a synergistic and superior solution. Ideas will be debated to reveal their strengths and weaknesses.
		45	• The members will tend to defend their own opinions but they are willing to listen and debate each other's rationales. This means that the members can be moved some of the time by persuasive arguments.
		0	• Members' ideas about the problem and its solution will not be explored to reveal their strengths and weaknesses, and their will be little constructive debate. Members will defend their positions to protect their egos. He discussion will rarely go deeper than the exchange of opinions, and there will be little discussion of the rationale behind a member's opinion or perspective.

Variable	Description	Score 0-100	Criteria
Systematic problem exploration and solution development	The process a team uses to explore the problem and to develop a solution.	100	• The team will break the problem into manageable parts and thoroughly explore each part, in an effort to identify a customer's particular needs, and the "root causes" of problems. Where appropriate, data will be used to pinpoint problem causes. The team will asses potential problems resulting from interaction of the parts with the whole. A solution will then be developed to address the identified needs and causes of each part of the problem.
		35	• The team will have a general discussion about the problem. The discussion will jump with no clear plan from one part of the problem to another, and no part will be explored in great depth. Some ideas to solve the problem will be briefly discussed. Finally, there will be some debate about how a "standard" approach might be modified to solve this problem.
		0	• Members will throw out solutions and the team will react to them. The team will not seriously attempt to identify or discuss the possible components of the problem in order to understand it better. The team will basically jump from the problem to a solution. The problem will be solved by using a standard and obvious approach.
Meeting facilitation	The facilitation of each meeting.	100	• A facilitator, skilled in problem solving and team meeting techniques will run the meeting.
		52	• A natural/positional leader will run the meeting, but he or she has few or no facilitation skills.
		0	• The team has no member designated to run the meeting and none of the members have position, or facilitation skills.
Pressure to solve the problem	The importance of the team's efforts for solving the problem.	100	• The team has a time-table for action which contributes to their sense of importance of each meeting.
		40	• The team feels pressure, but there is not a fixed time when the task has to be completed.
		0	• There is no pressure on the meeting regarding the output of their meetings.

Variable	Description	Score 0-100	Criteria
Problem definition	The amount a team knows about their meetings and what is expected of them during their meetings.	100	• The purpose of each meeting will be clearly defined ahead of time. Each meeting will be planned and structured. This includes providing background (e.g., on the problem) and an indication of what the team should accomplish during each meeting. An "agenda" has been developed. Each member has an understanding of what will be expected of him or her, and what to expect during the meeting.
		30	• The members will know the reason(s) for each meeting but will have very few specifics about each meeting.
		0	• The members will have little or no idea of what a given meeting will be for or what will be expected of them during the meeting.
Team member participation	The degree of involvement of members in the team's problem solving efforts.	100	• All members will be actively involved in the problem solving process.
		75	• One or two of the members will participate very little if at all in the problem solving process, but the majority of the team will be actively involved.
		0	• The problem solving process will be completely dominated by a minority of the team.
Written logs of meetings	A team's "thinking" and deliberations will be recorded for all to see during their meetings.	100	• A written log will be kept during meetings, which will be visible to the entire team. The purpose of the log is to record the rich diversity of ideas generated by the team so that no idea will be overlooked because of who contributed it, or because it was not reiterated frequently.
		30	• Members will be provided with pads for taking their own notes, and the meeting room will have a blackboard for the team's use.
		0	• No mechanism will be in place to record and use the team's thinking.

Teambuilding Baseline Tool
Tim Borton

Purpose: Information gathered from this tool is confidential. Information will only be used by the facilitator to customize training to meet the needs of your group. Using current and historical information assess your group in the following areas. Rank each variable on a scale of 1-5. Please note that the last variable "Team Configuration" is information on the future purpose of the group of individuals receiving this training.

Variable	Description	Score (1-5)	Criteria
Value of Team Process	The team's understanding and commitment to using a group approach to problem solving	5	• All members of the team understand team problem solving approach and are willing to utilize concepts
		3	• Some members understand approach and are committed to utilizing them
		1	• Members do not understand approach and/or are not willing to utilize approach
Team Relationship	The comfort level of individuals with other group members	5	• Team is established and all members feel comfortable sharing their thoughts, ideas and feelings with the group
		3	• Team is established but members have predetermined terms of service, with new members frequently joining the group
		1	• Team has recently been formed without an opportunity for barrier breaking amongst members
Team Interaction Style	How the members react to other members' opinions and perspectives when they are different from their own.	5	• The team will have in-depth win/win discussions, which reveal the rational behind members' opinions and perspectives
		3	• The members will tend to defend their own opinions but they are willing to listen and debate each other's rationales
		1	• Members' ideas about the problem and its solution will not be explored to reveal their strengths and weaknesses, and their will be little constructive debate

Variable	Description	Score (1-5)	Criteria
Problem Identification & Brainstorming	The amount of time and effort that is spent identifying a problem and brainstorming possible solutions	5	• Members take their time discussing the problem and its causes as well as time to brainstorm possible solutions. All ideas are recorded and discussed without judgment
		3	• Members take their time discussing problem and its causes, but then limits brainstorming to one or two ideas and moves on. Brainstorming ideas are dismissed as they are mentioned or a common method is adapted
		1	• Members do not take time to identify the root cause and no opportunity is given for creative solutions
Solution Development	Ability to develop the solution and disseminate information to the members and their respective responsibilities	5	• All members are aware of the solution being utilized and know what their responsibilities are for that solution. The team takes the time to break the solution into manageable parts
		3	• All information is contained within a few members of the team and not shared with the entire group. The few members have a fully developed solution
		1	• Solution to the problem has been identified, but no effort has gone into developing the solution
Implementation and Evaluation	The way a group implements their plan and reevaluates their plan when faced with set backs	5	• Solution is implemented as outlined with members willing to evaluate progress and flex solution as needed
		3	• Solution is implemented as outlined with reluctance to evaluate progress
		1	• Few members are actively involved in the implementation and the members are not receptive to deviating from original solution

Variable	Description	Score (1-5)	Criteria
Leadership Styles	How the leadership is shared by the group	5	• Leadership is fluid and the leader changes based upon the situation and individual's strengths
		3	• Leadership is not determined based upon the situation or experience, yet controlled by a few select members
		1	• There is no method for selecting leaders and the same person is always in charge regardless of the situation
Effort Shown in Previous Team Problem Solving Situations	The effort and outcomes displayed in past problem soiving situations	5	• Team has historically solved problems as a team in a timely manner and handled obstacles as they arose
		3	• Historically, group cohesiveness has suffered throughout the process of solving problems
		1	• Team has not historically been successful in problem solving or overcoming obstacles
Team member participation	The degree of involvement of members in the team's problem solving efforts.	5	• All members will be actively involved in the problem solving process
		3	• A few of the members will participate very little if at all in the problem solving process, but the majority of the team will be actively involved
		1	• The problem solving process will be completely dominated by a minority of the team
Team Configuration	The amount of time the team will spend working together to solve problems	5	• The group will continue to function as a unit and effectively solve problems together. The team will support each other throughout the process
		3	• A few members of the team will stay together and work on problems in their own area. Others in their area have not participated in teambuilding. Support is shared between the individuals who have received training
		1	•No members of the group will stay together. They will all disperse to their own area throughout the organization. Support is only available outside their work area