Problem
With the implementation of team-based organization principles in the workplace, team members need to be equipped with formal problem-solving methods and feel confident in their ability to apply such methods. It is difficult to justify soft-skill training in the workplace and to identify effective training methods. Currently, a single-session (two-hour), on-site training is in use and is provided by an external training resource. The effectiveness of this training in equipping team members with formal problem-solving methods and increasing their confidence in their problem-solving abilities is unknown.

Research Question
Does the currently-used problem-solving training equip team members with a set of formal problem-solving methods and result in an increase in team members’ confidence in their problem-solving abilities?

Hypothesis
The currently-used problem-solving training equips team members with a formal set of methods for problem-solving and increases team members’ confidence in their problem-solving abilities.

Variables
Independent variables. The workforce in question consists of both administrative and operative associates in both leadership and non-leadership roles. Associates function as members of various work teams, which are defined functionally. Study participants will vary in educational background, years and type of work experience, and problem-solving background prior to the training.

Dependent variables. Study participants will be provided with the currently-used, formal problem-solving training to allow for study of the effects of the training.

Outcomes
After participating in the training, team members will find that they are equipped with either newly acquired or updated formal problem-solving skills. Those who have never had training or
experience using these types of formal methods will have a new skill set. Those who have previously had training or experience in problem-solving will find their skills updated or reinforced. This addition or reinforcement of formal problem-solving methods to the team members’ skill sets will increase team members’ confidence in their problem-solving abilities.

**Research Methods and Design**

*Study method.* The qualitative descriptive research method of sampling and surveys will be used to conduct the study. Participants will be presented with a questionnaire prior to and after the training. The questionnaire will include both self-perception questions and application questions. The purpose of the self-perception questions will be to gather data regarding the participants’ perception of their current problem-solving skill level and their confidence in their formal problem-solving abilities. To represent actual workplace situations as closely as possible, the application questions will use specific examples of workplace problems (gathered from the team members’ work environment) to test the participants’ likelihood and ability to apply formal problem-solving methods. For the post-training questionnaire, participants may refer to reference materials supplied in the training, as the intention is not to measure the participants’ ability to memorize the problem-solving steps but rather to gauge their likelihood and ability to use them. The questionnaires will include multiple-choice questions, questions for which an interval scale will be used for responses, and very limited open-ended questions (such as listing or short-answer questions).

*Participant selection.* The participant group will consist of team members who complete the problem-solving training. Each training group (session) includes team members of varying educational background, years and type of work experience, and problem-solving background. For example, each training group includes members from both administrative and operative teams, salaried and non-salaried positions, leadership and non-leadership roles, and positions requiring varying levels and types of education. Using one such training group as study participants will provide a random sampling of the total workforce to which the training is available.

*Definition of study terms.* **Formal problem-solving methods** include such steps as identifying the problem, root-cause analysis, brainstorming possible solutions, testing solutions, implementing a solution, and evaluating the implemented solution. **Likelihood** of applying formal problem-solving methods (ref. questionnaire description) refers to the participants’
frequency of referencing the formal problem-solving methods as an approach to a given problem. **Ability to apply formal problem-solving methods** (ref. questionnaire description) refers to the participants’ ability to not only reference the terminology of the formal problem-solving methods but to execute those methods. Team member **confidence** in their problem-solving skills refers to their comfort level and to their perception of their own ability and effectiveness in problem-solving in the team environment.

**Results.** The results of the questionnaires prior to the training will be compiled, as will the results of the questionnaires administered after the training, and the compiled results will be compared. This comparison of pre-training and post-training questionnaire results should demonstrate the effectiveness of the training in equipping participants with formal problem-solving methods and the impact of the training on participants’ confidence in their problem-solving abilities.