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Experiential learning, confidence and groups

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Experiential learning, confidence and groups

by

James Michael Ulin

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
MASTER OF PUBLIC ADMINISTRATION

Major: Public Administration

Program of Study Committee:
Yong Lee, Major Professor
Matthew Potoski
Gloria Jones-Johnson

Iowa State University
Ames, Iowa
2004
This is to certify that the master’s thesis of

James Michael Ulin

has met the thesis requirements of Iowa State University

Signatures have been redacted for privacy
To my wife and daughter

for supporting me in whatever I choose to do....
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ABSTRACT

The fields of experiential learning and groups often intersect in theory and practice. As public administration continues to evolve through increasing use of multiple agency collaboration, experiential learning becomes an often sought instructional tool for government and business employees working in groups. Although this instruction often benefits groups in many ways, this study looks at the potential increases within group members via these experiential learning initiatives. I use an examination of survey data to try and show these increases in confidence and the formation of collective interdependence efficacy. The hypothesis of this study was answered by comparing several groups of participants in a one-day experiential learning exercise. Although the data reflecting the measurement of confidence and potential increases were not statistically significant, they did show increases in confidence and future areas of research. This research attempts to fill a current gap in the research on the formation of confidence in groups using experiential learning. Future analysis is necessary in this field and my research points to possible venues of exploration.
INTRODUCTION

PROBLEM STATEMENT

In today's world of partnerships and collaborations, the public and private sectors find themselves working more and more in group settings. As people enter the workforce, they are assigned to groups. Often these groups of people are from different businesses or government agencies. In all cases, they are expected to perform well. Unfortunately for experience, people in these groups have rarely worked together before.

Agranoff found evidence that nearly 20% of a public manager's time is spent in collaborative activity outside of the home government organization (7). Partnerships in government, business, and nonprofit worlds look to be "all the rage" in today's fast-paced world (Klitgaard and Treverton 6). As employees are assigned with people outside of their agency to new work groups, they encounter people that they are unfamiliar with. It becomes important to understand as much as possible about these new work groups and what happens as people work in them.

There are several attributes that are important for individuals to possess in order to help them work in group settings. These are communication, teamwork, problem-solving, cooperation, trust and respect for others (Alpine Towers Instructor Manual 3). The literature on experiential learning tells us these characteristics of individuals may be more important to their effectiveness in a team environment than their particular skills and education. People need these building blocks for trust and respect so they may function effectively as a group. The concept of trust, as used in the experiential learning literature, often coincides with what is traditionally referred to as confidence. Experiential learning provides an environment where the individual can interact in a safe and controlled group manner in order to learn these personal skills. They have an opportunity to perform these very skills and tasks in initiatives, in order to gain experience. This provides them with a way of working on these skills outside of the workplace. Experiential learning gives people an opportunity to increase their base of knowledge and reexamine how they interact with other people. Most experiential training provided today focuses on improving these personal and group qualities. A great many governmental, nonprofit and business groups rely on experiential learning programs to training their employees in these identified personal skills.

Given the foundation of experiential learning and groups, which I provide in the literature review, there are many unknowns. One of these is the relatively little research on ways to measure improvement that experiential learning brings about in individuals. In order to support the use of experiential learning as a tool for modifying individual and group characteristics, the first step is to quantitatively measure improvement in group behavior. In this study I focus on the concept of confidence building as a surrogate measure for the larger concept of trust building. Confidence building is appropriate when the interest is in measuring group performance and can be used as learning tool. Common sense would suggest that allowing groups to work together increases their camaraderie leading to higher performance. Having an accurate measure of this increased capacity would help support this assumption.
The problem then becomes, how do we measure improvement in confidence as people go through experiential learning? In the remainder of my introduction, I will address the purpose of my study specifically and my hypothesis. I will then move on to look at the literature surrounding groups and experiential learning methods.

**PURPOSE**

This study involves an experiment designed to test the improvement in confidence among group members provided by experiential learning. I have selected confidence as the individual attribute to measure for several reasons. I chose it mainly because of the data already provided by this research. The structure of the exercise and the data lend themselves to measuring confidence as compared to communication, teamwork, problem-solving, cooperation and respect for others. The study includes over 140 participants in a 1 day experiential learning exercise. The day is structured with initiatives that participants will perform in order to build teamwork, problem-solving, communication and confidence among themselves. I use an initiative called the Chicken Farm to try and measure the improvement within groups as they complete more of the experiential learning tasks. The Chicken Farm initiative is formatted in such a way as to control for communication during the initiative. I look at this data to see if trends can be seen or improvements measured. Importantly, I attempt to add to the ways of measuring improvement provided by experiential learning activities.

**HYPOTHESIS**

My hypothesis is that experiential learning initiatives will help build self-confidence among participants in a group exercise and that it is possible to measure this improvement. I identify two variables in my data that ask individuals to answer questions about how they view themselves and their teammates with respect to confidence. I examine the results of these answers indirectly by looking at the variance in the responses. I provide reasons for this in the data section. I begin with an examination of the relevant literature pertaining to groups and experiential learning. I explain the organization of my experiential learning program, the groups involved, the initiatives and the Chicken Farm initiative in particular. I look at the survey variables and the data they provide. I then look at some possible interpretations. I end with a discussion, areas of future research and my conclusion.

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1 Confidence is the measure I use throughout this research paper. There is a great deal of research on the dichotomy between confidence and trust. This includes the blending of these two terms and their subsequent use in the literature. I have provided Appendix VII at the end of this research paper to illustrate some of these points. It is a summary of my research on trust, confidence and their respective uses in the literature.
LITERATURE REVIEW

Individuals acting in group settings are the focus of this research. The Chicken Farm exercise itself is one of experiential learning. Literature on experiential learning provides a wealth of insights that are useful for contextualizing the Chicken Farm exercise that I have designed for this study. Specifically, experiential learning literature is useful to contextualize the relationship between group structure and learning outcomes. I begin with the subject of groups.

GROUPS

In an article entitled “Critical issues in abandoned information systems (IS) development projects”, Ewushi-Mensah points to “weak or problematic project teams” as a major point of failure for IT projects (75). Zieger reflects on the difficulty in managing cooperative relations when “warring” factions are members on the same project team (22). Along with pointing toward the issue of confidence within groups, both of these cases illustrate the increasing focus on teams and work groups in the public and private sectors. In order to better understand the nature of work teams, and their function, it is useful to overview the development of group theories and governance structures.

On one end of the governance continuum is the hierarchical structure, very regimented with specific delineated tasks. This can often be symbolized by a military command system. There are generals, colonels, lieutenants, and sergeants. Commands flow from top to bottom, within this strict structure of who answers to whom. Contrast this with the other end of the governance continuum, the market system. This is where best practices are rewarded in an environment with few rules (DeSanctis & Poole 159). Preference is given to efficiency and effectiveness. For collaborative partnerships, the network structure lies somewhere in between these two poles. Networks of individuals rely on a disaggregation and a looser coupling of individuals or units, where authority relations are less clearly defined and multidirectional (159). People are linked across formal organizational boundaries. These structures rely on collaboration as a critical governance mechanism (161)². An example of these structures is a kind of terrorism task force. People are picked from all organizations, agencies and businesses that can be affected in a particular region. They come together to solve a common problem, with a limited set of rules and acting on a peer-to-peer basis.

² Some of the key characteristics of networks include an emphasis on bi-directional communication flow, relatively flat reporting relationships, and multi-party cooperative work arrangements which link people and activities (160). Networks may be external or internal to an organization. They may also be stable or dynamic (160). The following authors have written on networks: Heydebrand, W. “New Organizational Forms.” Work and Occupations 16 (1989): 323-357. Karsten, H. “Converging Paths to Notes: In Search of Computer-Based Information Systems in a Networked Company.” Information Technology & People 8 (1994): 7-34.
Groups are defined as “two or more individuals working together to achieve common goals” (Mischel and Northcraft 178). Within the network structure, teams (or groups) substitute for the hierarchical relationship normally found within a particular organization. Teams have added benefits of flexibility, quicker response, and increased organizational learning (DeSanctis & Poole 161-7).

Social interdependence theory helps to further illustrate the interactions of individuals in groups. Here, people share common goals and their individual outcomes are affected by the actions of others in the group (Deutsch 1949, 1962). Cooperative relations are one manner in which individual actions affect others. Cooperative relations are seen as having an overall positive influence on the actions of others (Johnson & Johnson 94-6). This is supported in the research on confidence, where its increase is linked to increased efficacy.

There are issues within networked organizations that can act to either integrate or fragment teams. Thus, from the standpoint of groups, some factors bring them closer together, while others drive them further apart. The ultimate movement toward one or the other may be less dependent on the actual structure of the team, and more dependent on the process by which the team functions (DeSanctis & Poole 167). Communication in groups is important (167-70) among the many factors in team functioning. This ongoing interaction with individuals in the group creates the “shared sense of meaning” (170) over time. The mutual identification of people within a group may be enhanced in this network setting, versus the hierarchical counterpart. Social identification increases as a result of group processes and inputs by individuals, along with a sense of belongingness. The willingness to work toward common goals should increase along with this social identification (170). This concept is also referred to as “relational cohesion” in some research (Thye, Yoon, and Lawler 140). The important point here is that individuals in groups, in a networked structure, given the opportunity to interact, will experience a greater sense of belonging to each other.

4 I use the terms interchangeably, as does most research.
5 In the following work, T.J. Allen shows how teams may be superior coordinating methods for several reasons. First, they allow more parties to participate in information flow and presumably the firm is better able to respond to external demands. Secondly, they facilitate cross-functional coordination and organizational learning, as parties work together on tasks and transfer knowledge to one another. Finally, they can be more readily formed and reformed than the department or divisional structure in hierarchies, so they may operate like temporary project groups rather than ongoing institutional structures.
7 See Appendix VIII for further research on trust.
9 Relational cohesion is defined by its authors as the unifying element or force in a social situation that is perceived by individuals in an exchange relationship. It is thought to lead to higher levels of commitment and collectively-oriented behavior. Commitment here means strength of tie between a person and a group (140).
As individuals share information and experiences within a group, regardless of the structure of the group, they tend to fall into the realm of expectation states theory. In team settings, individual actors encounter each other, perform tasks together and have an opportunity to observe each other's behavior. They then begin to develop expectations about the performance of others based on their relative abilities and demonstrated skills at tasks (Shelly 41). These expectations can be seen as running parallel to the development of confidence within groups given similar sets of developmental processes and inputs. Shelly contends that these expectations are not directly observable, but rather we measure their consequences (42). This behavior is a translation of thoughts and forms when individuals offer others chances to contribute to tasks and have an opportunity to accept or reject the influence (42).

Connected to individual's perceptions of others in expectation states theory, is necessarily the perception that she holds of herself. Self-efficacy has received little attention prior to the 1970's (Mischel & Northcraft 178). It is defined as the individual's belief in her or his capability to perform a specific task (Bandura 1977). Generally, it is the level of confidence a person has in her or his skills. It is noteworthy to consider that the individual's perception of these abilities plays a role in their output in a specific task (Mischel & Northcraft 179). Individual efficacy has been shown to be positively related to work outcomes and predictive of performance (179). As a person's confidence grows in their skills, their performance also increases. Self-efficacy is thought to aggregate at the group level and manifest itself in one of two forms. There is the belief that the group has the required knowledge, skills and attitudes (KSAs) to complete the confronted task (collective task efficacy), and there is the belief in the group's KSAs to interact effectively (collective interdependence efficacy) (184 my italics). Important to this research is this dual relationship. A

---

10 There is support in the literature that says participants in structured groups with a controlled monitor (strong leadership) reported feeling more comfortable and had greater increases in self-actualization than those in unstructured groups (Kilmann & Sotile 1976). However, experiential learning theory suggests just the opposite. There appears evidence to support both sides.


11 Shelly concentrated much of his research on a third basis for expectations formed by individuals in groups. Shelly added that actors take into account their group member's membership in particular social groups. I do not address this issue here.

12 Mischel and Northcraft caution that self-efficacy is often confused with other related terms. Self-esteem is thought to be more "global" in nature and self-confidence is thought to relate more generally or diffused to an individual's task-related capabilities (179). See also:


person may think that all of their group members have can play basketball well, but this is separate from their belief in these same group members to play well as a team. Gist and Mitchell assert that these two forms are not related. As such, it must be possible to examine the interaction in groups and the KSAs required for this, while excluding or holding constant the actual technical skills required to complete an exercise (Mischel & Northcraft 184).

Given this knowledge of groups and the interactions of individuals within them, a sounder reasoning on the formation of confidence can be developed. Confidence is shown by this group literature as having two essential ingredients relevant to this research. First, individuals have confidence in themselves (self-efficacy) and secondly, they have confidence in their group members (collective interdependence efficacy). Increased confidence has been shown to be beneficial and the mechanisms within which individuals operate in groups develop similarly. In this context, a broader understanding of experiential learning theory is necessary to understand why it makes a good vehicle for confidence development.

EXPERIENTIAL LEARNING

To understand experiential learning, it is helpful to note that it is not a new concept. Sophocles once said, “One learns by doing the thing; for though you think you know it, you have no certainty until you try” (reprinted in Johnson & Johnson 47). The Russian scientist Vygotsky said several centuries later, “learning from experiences is the process whereby human development occurs” (48). Learning involves the acquisition of knowledge, skills, and attitudes (KSAs) (Rose & Buckley ix). This process of mutual learning through exploration in groups leads to additional confidence (Agranoff 22). The operation of individuals in groups can thus be seen as a function of their learning and the formation of confidence.

Kurt Lewin pioneered the experiential learning method as it is thought of today. He described the increase in learning and creativity by the study of one’s own experiences in order to learn about group dynamics (Johnson & Johnson 49). Other definitions of experiential learning utilize this same earlier construct. The experiential learning process involves: 1) formulating an action theory, 2) testing it behaviorally, 3) assessing the consequences and obtaining feedback, 4) reflecting on this action, and 5) modifying and refining the action theory (51). This is also referred to in the literature as procedural learning (49).

---

14 This theory was summarized in the Mischel and Northcraft reading by example. An individual in a group may believe that among her teammates all the task-related abilities necessary to perform a specific task are represented, but not believe that the team has the ability to interact effectively, exchange their knowledge, and work well together (184-5).
15 Walter and Marks define experiential learning as a sequence of events with one or more identified learning objectives, requiring active involvement by participants are one or more points in the sequence. Lessons are presented, illustrated, high lighted, and supported through the involvement of participants. Their central tenet is “one learns best by doing” (2).
16 In the Johnson and Johnson text, procedural learning has a heavy reliance on feedback about performance, and stresses the modification of implementation efforts until the errors in performance are eliminated (49). There is little difference in the overall structure of procedural learning and experiential learning, except for this concentration on feedback.
Chris Argyris expanded on Lewin’s theory of experiential learning by developing two models of action. This expansion is important to the formation of confidence, because it deals directly with changing behavior in individuals. Argyris postulated that there are many different espoused theories of action but that most people have a similar theory-in-use (56, 243+). The latter is the way people actually act if they are observed. It is defensive in nature, and has four governing values. These are to achieve your intended purpose, maximize winning and minimize losing, suppress negative feelings, and behave according to what you consider rational (57). For Argyris, there are two models of learning. Model I is the defensive model already mentioned that is based in rationality. Model II is one in which individuals share control over decisions and reevaluate their governing variables that they utilize in Model I. These are often referred to as Single-Loop (Model I) and Double-Loop (Model II) learning respectively (243+). Important to experiential learning is the taking of steps necessary to move people from not having confidence in each other and acting in their own self-interest, to having more confidence in others and altering their governing variables.

Experiential learning is centered around the understanding of the process by which change occurs in human functioning. It evolved as a training concept in the 1950’s and 60’s in the National Training Labs and Esalen Institute (Walter & Marks 2). There were found to be three effects on the learner in the experiential learning process. First, the learner’s cognition structures were altered. Second, their attitudes were modified. Lastly, the repertoire of behavioral skills they had access to was increased. Work on any one of these had to include all three. It was determined that singling out any one step was ineffective (Johnson & Johnson 50).}

In the Walter and Marks text they stress that participants must be fully involved, with clear lessons relevant to them, an individual sense of responsibility for their own learning, and a flexible learning environment (3). Espoused theories are those that people tell you that explain “why they act the way they do” (99,131). They are often the answers that people give when asked “why” they did something. It is based on their education and learning, among a host of other factors.

There are nine waypoints in the change process as it relates to experiential learning (Walter & Marks).
1) Feedback – information is made available to individuals concerning the consequences of their behavior
2) Conditioning – presence or absence of pleasurable or aversive consequences that influence behavior
3) Coercion – implies punishment or potential punishment along with a deliberate evoking of fear
4) Identification – process of acquiring new behavior through the observation of others
5) Persuasion – planned presentation of information evoking thoughts and emotions in convincing patterns
6) Support – enables rather than induces changes
7) Restructuring – deliberate or planned reorganization of some aspect of the physical environment or social structure
8) Channeling – results from the impact of social (rules, norms, roles) and technological (task, physical structure and organizational arrangements) structures
9) Re-Cognition – approaches and mechanisms for changing the way an individual thinks (58-135)

Steps 1 to 3 are centered on the outcomes, while steps 4 to 6 concern the leadership and emphasis on the personality of the leader and participant reactions with and to this. Steps 7 and 8 are ways in which social context can induce a change in an individual. Lastly, step 9 is the process of changing an individual’s cognition.

See also these works:
Using experiential learning enabled participants to learn through several channels. They were able to hear, see, and experiencing the lessons, which enhanced their recall of the topics learned (Rose & Buckley xi).

The Adult Learning Model developed by Malcolm Knowles (1992) served to morph experiential learning into a specific formula for adult learners. Several factors come into play in adult learning. First, adults are self-directed, and therefore they prefer to have some control over the learning situation. Second, they bring their own unique experiences to the learning situation, which can serve as valuable resources. Third, adults' readiness to learn is most often determined by their current needs. Finally, adults want to apply tomorrow what they have learned today, and therefore they place emphasis on the practical application of the skills and knowledge they obtain in the learning situation (Rose & Buckley ix). Knowles also found that this method of active learning resulted in much higher information retention than traditional methods of instruction (ix).

Central to these ideas of experiential learning processes is the notion of reflection. It is the “vital element” in any form of learning and must be incorporated into courses (Boud, Keogh & Walker 8). There are many learning cycles that illustrate this point. They include the four-step cycle by Kolb and Fry and the Boud model. What is consistent is the inclusion of action, reflection and transference as mandatory considerations in experiential learning.

The experiential learning cycle does not apply only to technical skills (such as how to make an air conditioner or tie a rope in knots). These attributes are often referred to as “intelligence” (IQ) and are separate and distinct from “emotional intelligence” (EQ). The latter includes self-awareness, self-control, empathy, effective listening, conflict management, collaboration and cooperation (Rose & Buckley 5 my italics). Emotional intelligence has been found to be more important to success in teams than intelligence. Improvements have been foreseen in decision-making, leadership, open communication, trusting relationships and teamwork by improving EQ (5 my italics). Rose and Buckley use an acronym of ATROC, for a framework in providing a good foundation for building EQ (6). Important in this research is the T for Trustworthy. Initiatives falling in this area highlight confidence and mutual respect. Through teamwork, team members earn trust by doing what they commit to do (7).

Experiential learning has thus demonstrated its applicability to group learning, individual learning, and adult education. It has shown to be not only appropriate, but beneficial to the creation of confidence in others and environments to cultivate this. As such, it may prove to be a viable method of training individuals and

---

20 O'Neil also said that team learning in this fashion must be relevant to work, with activities crafted over time and expert facilitators to aid groups in learning. It must also be done in a non-threatening environment. O'Neil, M. “Do's and don'ts for the new trainer.” Info-Line 9608. Alexandria, VA: American Society for Training and Development. August 1996.

21 The Kolb learning cycle is: 1) concrete experience, 2) observations and reflections, 3) formation of abstract concepts and generalizations and 4) testing implications of concepts in new situations.

22 The Boud Reflection Process begins with experiences (behavior, ideas, and feelings). This leads to an interaction with the reflective process (return to experience, utilize positive feelings, remove obstructive feelings, re-evaluate the experience). The final step is outcomes (new perspectives on experience, change in behavior, readiness for application, commitment to action) (Boud, Keogh & Walker 36).

23 ATROC (Adaptable, Trustworthy, Resourceful, Optimistic and Considerate)
groups. Training itself has been shown to foster confidence (Tessin 7)\textsuperscript{24}. Keeping in mind that training must be done for a purpose\textsuperscript{25}, it becomes used to systematically generate the appropriate KSAs for employees in order to improve the match between their characteristics and the employment requirements (Sims 21).

The literature on experiential learning shows that the process of forming a theory, testing it, assessing the consequences, reflecting and modifying the theory apply to emotional attitudes and attributes. Confidence is just such an emotional component of people. Knowles research suggests that with adult learning in particular, results can be expected soon because of the desire to immediately apply learned skills.

The field of Public Administration requires current employees to operate in collaborative partnerships. Practitioners need confidence as one of many factors to operate successfully with their peers in these environments. Given the connection between confidence and the word trust in the public administration literature it would be helpful to see an example of success within a group. In 1990, a partnership of public and non-profit individuals were brought together to solve a collective dilemma. They succeeded where other groups had failed because they “created an atmosphere of trust and a conception of group identity” (Bardach 175-6). They dramatized the role that interpersonal skills and other helpful personal attributes play in creating a “culture of trust” (184). By slowly accumulating successful experiences predicated on mutual trust, they were able to create just such a culture (189)\textsuperscript{26}.

Networked group structures emphasize collaboration and common goals. Expectation theory shows how past experience with people help to formulate our attitudes about future activity. This is a measure of our confidence in other’s ability to work well together (collective interdependence efficacy). Experiential learning uses some of the same logic to show how these critical emotional attitudes, like confidence, can be built and reinforced. This literature leaves a critical gap by not showing the improvement in confidence within groups that can be created through experiential learning processes. In this study, I measure the improvement of group confidence by experimentally fostering confidence building with the Chicken Farm exercises. I use two variables of Self Try and Other Try to try to show quantitatively the increases in confidence. In the next section, I will describe how my research was set up and the methods that I used. I will also describe the events and the data that was collected.

\textsuperscript{24} Tessin also states that training benefits an organization by fostering authenticity and openness in addition to trust (7).


METHODS AND DATA

In this section, I describe the learning events at Iowa Valley Community College District which serve as a basis for this study. I first describe the participants and their assignment to groups. I then describe in detail the Chicken Farm exercise. The Chicken Farm exercise is but one of the events, but it is the one that I have used to gather data on Self Confidence and Other Confidence. I describe the design of the Chicken Farm experiment and show how the data was collected for this study.

EXPERIENTIAL LEARNING PROGRAM

I decided to concentrate solely on using ground-based (low) exercises in this research. They are easier to set up, accommodate large groups of people more easily, and do not require the investment in learning ropes, harnesses and climbing skills. As such, ground-based initiatives can be completed more quickly with similar lessons learned. They are called “low” initiatives because they do not involve a climbing tower. The initiatives that take place on the tower, either suspended by ropes or using climbing, are called “high” initiatives.

In 2000, Iowa Valley Community College District (IVCCD) purchased an experiential learning tower, called the Alpine Tower, from Alpine Towers, Inc. This is a fifty (50) feet tall ropes course that allows participants to do exercises on the ground or at the tower’s base, as well as in the air. The tower is built like an hourglass, with three legs, and is set up to facilitate climbing. As part of the purchase of this equipment, Alpine Towers Inc. provided training in the proper use of the tower, and approved exercises for around the base. Ground based exercises were considered the first steps in building trust, communication and teamwork (Alpine Towers Instructor Manual 3) prior to having groups climb on the tower.

I was hired by IVCCD as one of the first facilitators in April of 2001. My training consisted of an initial first week of learning to use the tower and develop ground-based initiatives. I then participated later in the year in a training that concentrated on universal access for persons with disabilities to the tower. All facilitators also received training from independent consultants working in the field of business teaching these same team-building exercises. IVCCD purchased numerous books on experiential learning low initiatives. Alpine Towers encouraged the use of exercises from all sources to facilitate growth in the areas of teamwork, problem-solving, confidence, communication and cooperation. What I learned was that it was not so much the specific activities that needed to be used in order to accomplish these goals, but it was the interaction of participants together in experiential exercises that was more important.

In the fall of 2002, after two years of working as a facilitator, I was asked by IVCCD to design a program of low initiatives for 150 members of the Community College District staff. This was to be held on “Valley Rally Day” in the middle of October. The participants would include Deans, administrators and teachers from throughout the District. The program needed to last four (4) hours and was to promote teamwork, communication, goal-setting, trust and cooperation. IVCCD staff wanted to use the Alpine Tower and the training facilitators had received to accomplish this.
I spoke with staff at IVCCD and we also thought that it might be a good time to test whether the
experiential learning system was effective for us in teaching these things. I then needed to put together a series
of initiatives and a schedule that would allow for all members to experience the process while not depriving any
one person of an event. I did get over a dozen facilitators and schedule the events. This schedule was given to
IVCCD staff to facilitate distribution of participants. Handouts were given to all facilitators explaining this
schedule (appendix I).

PARTICIPANTS

Assistant Dean Betty Bolar was in charge of distributing participants. All employees of IVCCD were
informed of the Valley Rally Day and asked if they wanted to participate. They were told that it was strictly
voluntary, and they were allowed to remain inside if they chose not to. They were asked to respond to Betty
prior to the event on their choice. She was able to then divide them randomly so that there were nearly equal
numbers in all groups. I was involved in the planning process for the initiatives. I was not told who were in the
groups, or their identities at any point. On the day of the event, I knew only that each participant had already
been assigned a number for the event that they would begin with.

EVENTS

I used a total of six (6) low initiatives in the four-hour block. These exercises were: the chicken farm,
key pad, sightless project, lower the noodle and yurt circle, river rescue, and hazardous crossing. Except for the
chicken farm, they are specifically described in Appendix II. I used the Chicken Farm exercise as a means by
which to measure group confidence among individuals working together. During my training with Alpine
Towers, we were encouraged to develop a new exercise that could be used in low initiatives. I developed the
Chicken Farm. My instructor could think of no similar scenario and asked that it be submitted for publishing in
an experiential learning journal.

There were twelve groups of participants. I set up only 6 initiatives, but made two stations of each
one. Thus, there were two stations for the Chicken Farm, two stations of the River Rescue, etc. I did this only
to make the groups of participants smaller and easier to facilitate. I collapsed the groups into 6 at the end of the
day. For this experiment, I labeled the groups 0, 1, 2, 3, 4, and 5. The number of the group referred to the
number of experiential learning initiatives that the group had prior to doing the Chicken Farm. For example,
Group 0 started with the Chicken Farm. Group 3 did three of the experiential learning initiatives before they
did the Chicken Farm.

Table I gives the group number (0 to 5), along with the name and order of initiatives that they did prior
to the Chicken Farm. As is evident, each group did each exercise only one time. No group was allowed to
practice or repeat any of the initiatives. Because of this, the methodology I used is similar to a pre-test and
post-test, but without multiple tests of each group. Group 0 did the Chicken Farm first. I use this group as a
measure of my variables where there has been no experiential learning program. Group 5 at the end of the day,
The purpose of the Chicken Farm exercise is to devise a way of measuring confidence in individuals and confidence in their group members. Confidence is one portion of how trust is defined. In order to see how experiential learning initiatives affect individuals, I needed to separate or hold constant as many variables as possible. Many different attributes could affect the measurement I tried. Differences in communication, the ability to adapt to changing circumstances, teamwork, and problem-solving could all make it difficult to determine if there were changes in individuals as a result of these exercises. I developed the Chicken Farm as a way of trying to answer my research question. I describe the Chicken Farm below, and then I show how this may be useful in answering my overall research question.
The total runway was 25 feet long. Each box was 5 feet long and 3 feet wide.

The groups of individuals coming to the chicken farm exercise at any one time varied from 19 to 26\textsuperscript{27}. These groups were then divided in half approximately as there were two sets of every exercise. This reduced the number of participants per group and led to greater input in the initiatives (see Appendix I). Division of the participants into these groups had already been done by Betty prior to the beginning of the day. When participants came up to the exercise, they were divided up into groups of five (5). Facilitators did this without any particular order and tried to be as random as possible. Usually they picked people to form groups by having people count off by numbers according to how many groups were needed. Participants would line up and be counted in total. If there were twelve people, they would need to be divided into 3 groups. They participants would then count off by 3's. This would generally separate people standing next to each other and make for a more random distribution. Randomness was important even at this step, because it helped to ensure greater validity in the results. The remaining numbers of participants that could not be divided into a group of five, formed their own group. For example, if twelve participants came to the initiative, they were divided into the following groups: 5, 5 and 2.

Participants were given a set of commands when they came up to this exercise. For ease of use on Valley Rally Day, and because there were two facilitators watching the exercise at the same time, I distributed a

\textsuperscript{27} The exact distribution of participants in each of the six overall groups is listed in Appendix III.
handout. I facilitated one group, and read from the handout. I instructed the other facilitator to do the same. The following section on instructions illustrates what was read to the participants by the facilitator, and in what order.

INSTRUCTIONS

"Please stand behind the blue rope and listen to the instructions I am going to read to you. When I ask you to, I will have you move forward and stand at the orange rope (illustrated by a green circle above). Pick up a rubber chicken from the farm (pointing to round rope area and chickens within – a yellow circle above) and stand at the beginning of the runway. I will tell the rest of your group when you are ready. We will all then count “one chicken, two chicken, three chicken, throw!” When you hear “throw”, I want you to throw the chicken underhand onto the runway before you. You will score points based on where your chicken lands. If the chicken lands half in one space and half in another, you score the greater number of points. If the chicken lands completely out of bounds, you score zero points. Any time the chicken has part of it within a square of points, you score those points, even if most of it is out of bounds. The boundaries for the points are marked by lines and by orange cones at the borders.”

"The goal of this exercise is to score at least 15 points as a group. You have 30 seconds to talk about your strategy.”

I provided a 30 second break at this point. If there were fewer or greater than 5 participants in the group, they were given a goal of 3 points times the number in their group (3 x n). I picked 3 points as the number needed for each participant for several reasons. First, three is the middle number of points possible. It provides some risk to achieve by throwing the chicken, but it is not the riskiest. Second, three is not too easy to get. I was concerned that if I used 1 or 2 points, that participants would not feel challenged by the exercise and would lose interest. Three points would require effort and concentration. Third, I needed to keep some number of points, in this case 4 and 5, as scores that were greater than the required amount. It was important to the exercise to have it possible, if unlikely, for people to get more than they needed. The ability to overachieve was a necessary element in judging confidence. For the participants to have confidence in their group members, they could show this by not trying to overachieve themselves. I address this issue with the variables in the next section.

"Now, please turn around and face away from the runway. Shut your eyes. From now on, I want no verbal or physical forms of communication. Please, do not speak with each other unless giving the “chicken throw” commands. When I tap you, turn around, get a chicken and be ready to throw. After your group says throw, throw the chicken. Please go down, pick up your chicken and remember your points. Go down and stand at the end. You may watch the rest of your group throw if you want.”
SURVEY & VARIABLES

In order to have a means of recording the events that transpired for each individual in the chicken farm, I provided an exit survey. I asked participants after they were done with the exercise to pick up a survey and a pencil, which were provided, and to please read it. They were told to put completed surveys into another box. The exercise was then debriefed with all participants together in a group. After this was done, participants were allowed to move on to the next initiative when it was time. The surveys contained information on the group that the person was in, their sex, one of five categories for age, and then multiple variables concerning the points scored in the exercise. I have listed these multiple point variables below (Table II) while the entire survey is included in Appendix IV.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGET</td>
<td>Self Get</td>
<td>0 to 5</td>
<td>The score in points a person actually got in the exercise</td>
</tr>
<tr>
<td>STRY</td>
<td>Self Try</td>
<td>0 to 5</td>
<td>The score a person was trying to get</td>
</tr>
<tr>
<td>OGET</td>
<td>Other Get</td>
<td>0 to 5</td>
<td>The score(s) a person thought their teammates would get</td>
</tr>
<tr>
<td>OTRY</td>
<td>Other Try</td>
<td>0 to 5</td>
<td>The score(s) a person thought their teammates would try to get</td>
</tr>
<tr>
<td>TOTPT</td>
<td>Total Pts</td>
<td>0 to 18</td>
<td>The total points scored by a group in the exercise</td>
</tr>
</tbody>
</table>

The Variables I queried in the survey are included in Table II. I used only two of these variables in the research in this paper. I used the variable STRY and OTRY. From this point forward, I will refer to them as Self Try (STRY) and Other Try (OTRY). To help with understanding these variables, I have described them both below. The remainder of the variables are described in Appendix V. Like a great deal of research, I collected data for variables that I later decided were not relevant to this research. I have removed these variables from this paper to aid in the retention of the information that is necessary to understanding my research.

Self Try (STRY) was a variable answering the question of what score a participant was trying to get when they threw the chicken. Generally this is a whole number answer ranging from zero (0) to five (5). However, some participants checked multiple boxes for an answer. For example, they checked the box for three and four, indicating that they were trying to get either a 3 or 4 point score. For these particular answers, I took the response to be the average of the boxes that they checked. In this instance, it would be 3.5.

Other Try (OTRY) is another subjective measure of the score participants thought their group members would try to get when throwing their chicken. It was again a measure between zero and five. In some instances, participants coded more than one answer here as well. I took this to mean that the participant thought their group members would get either one score or another. For this reason, I averaged the numbers to produce a final decimal score. An example of this would be a coding of 4 and 5 for Other Try. In this case, the answer coded would be 4.5 (the average of the two scores recorded).
I constructed three variables not found in the survey of participants. These variables were mathematical manipulations of the answers given by participants. I found that they were not useful for this particular analysis\(^\text{28}\) and have omitted them.

Now that I have described the development of the experiential learning program through Alpine Towers, the schedule of events that this research data came from, the low initiatives themselves, the distribution of participants and the exit survey variables, I will move on to describe the data themselves. For purposes of this research, I examine the aggregate and average data provided in this survey and not the individual data of specific persons.

In order to measure the improvement of confidence within groups because of experiential learning, I looked at the variables from the exit survey. For the data to support my hypothesis, which was again that this confidence within group members could be built through experiential learning exercises, I felt that the variance about the mean of Self Try and Other Try would need to decrease. This decrease would need to be evident between Group 0 at the beginning of the day and Group 5 at the end of the day. Remember, Group 0 was doing the Chicken Farm exercise first, and would be a measure of the level of confidence within the group with no experiential learning. Group 5 did the Chicken Farm at the end of the day. They would have the full exposure to the varied other exercises. The variables to be examined would be: Self Try (STRY) and Other Try (OTRY).

In order to rule out potential conflicts with self-efficacy, I structured the chicken farm exercise out of skills that I was fairly confident the participants did not have. The ability to throw a chicken underhand onto a scoring surface was something that I felt individuals would not have done before. I was confident then that the actual score a participant got in the exercise would matter very little. The skill was not practiced, it was done outside, it was cold and windy, and rubber chickens bounce pretty randomly. What I was concerned about was more the perception that individuals had of their teammates and themselves. I also wanted to study their perception of the relationship between themselves and their group members. I will examine each of the variables and how they should measure improvement in confidence because of experiential learning.

For the variable Self Try (STRY), participants were asked to answer the question of how many points they were trying to get in the exercise. It was easy to understand that group members each needed three points in the exercise to collectively reach their goal. I thought that members with less confidence in their group mates would go for more points in the exercise in order to try and ensure reaching their goal. I initially thought that it would be the raw number that would matter here. As individuals gained confidence in the other participants, they would take less risk and throw the chicken closer to themselves and the number 3. This skill was nearly

\[^{28}\text{I created the variable AVGPt, DIF1 and DIF2. AVGPt was the variable TOTPT divided by the number of participants getting the score. This variable was meant to have an individual measure of the success of the group. DIF1 was a measure of the variable STRY minus OTRY. It was meant to measure the decreasing range between what an individual tried to get and what they thought their group members would try to get. DIF2 was a variable that was a measure of STRY minus SGET. This variable was meant to measure how confident group members were in their teammate’s abilities to score the point value that they thought they would go for. As such, this variable was more a measure of collective task efficacy and not relevant to this research.}\]
unknown to the participants. I determined that even this answer might be random or involve issues of self-efficacy, and participant's confidence in their ability to try an unknown task and succeed. For purposes of this research, I considered that a better measure for confidence would be the variance about the mean score of this variable.

Variance here would essentially be the breadth of scatter that the scores had. For an unpracticed skill, I surmised that the variance at the beginning of the day in Group 0 would be close to the variance found in any group from IVCCD given no training with experiential learning. As groups gained improved confidence in each other through the additional experiential learning exercises, I posited that this variance about the mean would be reduced. Thus, Group 5 would have a variance smaller than Group 0. This would be because they were less willing to take risk as they had greater confidence in the ability of their teammates to score what was needed. Experiential learning would thus train participants to take less risk and have greater confidence in their group members. As they took less risk, they would try for similar numbers in value. The closer these numbers in value, the smaller the variance would be. Group members would learn to have confidence in their ability to work as a team and score the needed points. They would learn collective interdependence efficacy as their confidence in working together increased through experiential learning.

In examining the variable Other Try, I used similar logic concerning variance and the mean. The actual score that individuals thought their group members would try to get in the exercise was affected by a host of issues. These inevitably would be tied up in the notion of collective task efficacy. It was not the ability to score a certain point value, or the perception that an individual had of others being able to score a particular number of points. Rather, I was concerned with the reduction in the variance in the answers provided. As the cluster of answers got tighter around the mean, I saw this as a potential measure of confidence in others within the group. Whatever the mean might be, of each group or overall, the critical issue for this research was whether all individuals in the group rated each other similarly. This would directly relate to the idea of collective interdependence efficacy and the perception of a groups ability to work together to reach a common goal. Being able to have closer to the same answer for each person in a group, regardless of what the answer was, would show greater confidence.

I have addressed issues relating to these two variables and self-efficacy. I have also addressed the issue of collective interdependence efficacy and how this data might be used to show this. I was concerned primarily with the variance about the mean in the variables Self Try and Other Try. In order to test my hypothesis, these variances would need to decrease as groups were exposed to more experiential learning exercises. In the next section on the results and discussion, I will review my hypothesis and then look at the variance data for Self Try and Other Try. I will show how this is related to my hypothesis and what it might mean for my research.
RESULTS AND DISCUSSION

HYPOTHESIS

My hypothesis is that confidence within group members can be learned through experiential learning exercises. In my experiment, I have designed the Chicken Farm as a way of measuring the improvement in confidence. I identify two variables from my survey data (Self Try and Other Try) that ask individuals to answer questions about how they view themselves and their teammates with respect to confidence. In order for the data to support my hypothesis, it is important to see a decrease in the variance for each variable between the group at the beginning of the day (Group 0) and the group at the end of the day (Group 5). I examine the results of these answers indirectly by looking at the variance in the responses. I provide a discussion of what these results mean for my research after looking at the data themselves.

RESULTS

The data in this research did partially support my hypothesis. Variances in the variables Self Try (STRY) and Other Try (OTRY) were smaller at the end of the day than they were at the beginning. The differences in these variables pre-test and post-test were quite large, but they were not statistically significant at the 95% probability. Given this measure of improvement in confidence, I cannot determine if experiential learning has a measurable, statistically significant improvement in confidence. My research question does not have the support of the data as I have measured it. I will examine each of the two variables specifically in the sections that follow. For purposes of my research, these two variables do not provide an exact answer to my hypothesis. What they do show is that confidence can be learned through experiential learning exercises, but it may not be statistically significant in result. I will provide charts of my variable values below, along with an interpretation of the results. I will then provide some more detailed discussion on how this data can be used in this research.
For the variable Self Try (STRY), the variance about the mean decreased from Group 0 at .96 to a level of .66 in Group 5. The values for Self Try dropped from .96 with Group 0, to .56 with Group 1, then rose to .69 with Group 2, .83 with Group 3, and .95 with Group 4. The variance then dropped down to .66 with Group 5 at the end of the day. Variance with Group 0 started out high as expected. The variance then dropped by half with the next group. It continued to rise throughout the day. The variance then dropped with the last group.

I did do an F-Test of Equal Variance in order to determine if the variances in Group 0 and Group 5 are statistically different. I used a 95% probability threshold for this data (Agresti and Finlay 671). The result was that the variances are equal. The F Value for my data was 1.45 and it was just slightly under the threshold of 2.16 for statistical significance. Appendix VI illustrates the computation in detail. In summary, this means that I cannot conclude that there was a statistically significant decrease in variance between Group 0 at the beginning of the day and Group 5 at the end of the day.

I did not examine the F-Tests for each of the variables compared with Group 0. Although there was a lot of fluctuation in the variance throughout the day between all six (6) groups, the total number of participants (n) never crested 26. Larger n values make generally for small F-Test values. These smaller F-Test values increase the likelihood that differences in variance will be statistically significant. I now examine the variable Other Try (OTRY).
For the variable Other Try (OTRY), there were some decreases and increases throughout the day.

Group 0 had a variance that was .8, nearly three times the variance of Group 1 at .3. The variance then began increasing as Group 2 was .59 and Group 3 was .83. The variance then began to come down with Group 4 and Group 5 at .58 and .57 respectively. My primary concern was the difference in variance between Group 0 and Group 5. I did an F-Test similar to that for the Variable Self Try (STRY). The result was that the two variances from Group 0 and Group 5 are equal (see Appendix VI). The F-Test for Group 0 was 1.40. This was short of the 2.13 F-Value necessary to find the variances unequal.

The results of this data provide some evidence for the support of my hypothesis. Variances in the variable Self Try and Other Try do differ between different groups in the day. However, the differences in variances between Group 0 and Group 5 for the two variables Self Try (STRY) and Other Try (OTRY) are not statistically significant. Therefore, there values must be assumed to be equal. As a potential measure of confidence built by experiential learning exercises, the data from my two variables do not lend support to my hypothesis. I will now provide some areas of discussion about these results and their implication for the literature and the broader issues of measuring improvement in experiential learning exercises.

DISCUSSION

This data must be examined with respect to the theory researched in this paper. It must also be interpreted with respect to the broader issues addressed here and in public administration. There are weaknesses in this study and they must also be looked at. I will cover each of these areas in order in the following paragraphs.
The theory in this research suggests that confidence can be built in group settings and that it is very important to collective work. Experiential learning suggests that these interpersonal skills and attributes may be developed in exercises designed to foster them. Individuals participating in groups can go through experiential learning initiatives to gain confidence in each other. Much of the premise of experiential learning is that not only can attributes such as confidence be learned, they may be improved upon by participation. I chose to measure potential increases in confidence using the variance of two key variables coded on my participant survey. For reference, these variables were Self Try (STRY) and Other Try (OTRY). Earlier I discussed my reasoning for using the variance of these variables so I will not reiterate the point. My data do not support statistically significant increases in confidence through the experiential learning exercise that I set up, given my method of measurement. The decreasing variance about the variables Self Try and Other Try do suggest that confidence can be improved upon within group members doing the exercises listed. It may be possible to measure this improvement via experiential learning doing the Chicken Farm initiative. Different groups of participants could be examined, or different learning exercises could be chosen. Small collective achievements may help foster the development of confidence within work groups. The results from this data impact my hypothesis by showing that confidence can be improved upon in groups, although my data fall short of proving this with any statistical significance.

The broader issue addressed in this paper is the increasing prevalence of partnerships, cooperative agreements and collaborations in public administration. Managers find themselves working in groups during their employment. Data supporting a measurable increase of pertinent personal attributes would lend credence to the use of experiential learning exercises and initiatives in the work place. With greater statistical support for these initiatives, groups may be more inclined to employ them in order to improve their efficiency and work productivity. Groups could structure goals and activities for themselves that would slowly build communication, teamwork and confidence through small milestones and accomplishments. Outside firms or businesses specializing in this type of learning could be contracted to train particular groups of workers. Given the measurable real-world success and these supporting academic results, building this confidence through structured small exercises could increase its overall prevalence in the public sector. The literature listed in this research paper supports confidence as a key component to productivity in groups. I see my research as an attempt to support this overall mechanism of group interaction. Experiential learning programs are widespread in the United States. Experiential learning programs can be tailored specifically to different work groups to increase confidence.

There are a variety of exercises that could be chosen to work on areas of interpersonal need. This may be one of the key weaknesses of this study. It is possible that there are better activities in experiential learning that could build confidence more quickly. It is even more likely that there may be better ways to measure improvement fostered by experiential learning exercises. In this research, there were only four hours allotted and a total of six exercises. Given that one of the initiatives was the measuring stick, there were only five initiatives building confidence prior to it being measured. Perhaps there were better choices in the literature that
could have been used. And as the time was limited, perhaps not enough was allotted. As long as a safe environment is used, and participation is voluntary, more stress may be added to initiatives. Things such as the climbing tower, more physical and heavily reliant on the abilities of others, may build confidence faster. Confidence could also be measured in different ways. Thorough exit interviews could be done in smaller groups to get at the issue directly. It might also be possible to document the debriefing at the end of the exercise where these issues are discussed. Individual perspectives or views could be vocalized directly and provide a different way of measuring the results from these same initiatives.

In addition to these weaknesses already addressed, there are variables that could have affected the outcome of the results. First, the size of the group may have some impact on the answers that people provide. Groups with 2-3 members may behave differently than those with 5 members. Potentially, confidence could be built at a level for all members, but because we observe the results of confidence and not confidence itself, maybe it manifests itself differently in small groups. Gender and age may also play a mitigating role in this data. I did collect information on the gender of the participants and also their age in general categories. Maybe people with particular characteristics learn confidence faster or slower than others. Possibly they show this confidence differently with people sharing their characteristics than those who do not.

The implications of this study are widespread. Confidence may be created in an experiential learning environment given these exercises. The measures I used did not support this hypothesis directly. This study may serve for others to see potential areas of research in this field and ways of measuring improvement in confidence. Changes may be made to my research design, the initiatives and the way confidence is measured. Different variables may be used to measure the impact of group size, gender and age on the results. Importantly, we know through the literature that confidence is central to group interactions and success. This study may help to illuminate this fact and indicate that the field is worthy of additional study. I will now show some future areas of research and then finish with my general conclusion.
CONCLUSION

I began this study with a hypothesis that when people do things together for specific goals, they would increase confidence in their group performance. I assumed that the increase in group confidence can be measured by comparing with those who do not have the opportunity to work as a group. To measure the increase in group confidence I designed a Chicken Farm exercise in a high school setting. The exercise included five experimental groups and one control group. The primary variables of measurement were self try and other try measured for each group.

The result of this experiment gave support to the building of confidence in groups through initiatives in experiential learning. The result showed that the method of measuring this improvement was statistically significant. Variance in some variables measuring scores participants tried to get (Self Try) and scores they thought their group members would try to get (Other Try) could not be proven to decrease in this study. Groups in this study participated in exercises with facilitators designed to build confidence among a host of other positive group variables. I looked here only at the ability to measure confidence in one way among members. Considering that there were many different factors, my research is narrow in focus.

The literature surrounding groups, experiential learning, and confidence indicates that they are connected fields. The learning model of confidence formation among group members theorizes that confidence is linked to past experiences with other individuals. The more group members have confidence in each other, the more effective they are. In order to build this confidence, cooperative, open and sharing environments must be created. Positive past experiences within groups help to build it also. Not only are the personal attributes important, but the structure in which they are found bears analysis as well.

Network governance structures lie in the middle of a continuum between very structured (hierarchical) and unstructured (market-based) systems. Networks are based on collaboration among individuals in groups. These individuals begin to have a shared sense of meaning and identify with each other. In working together, individuals in groups have an opportunity to meet each other, work together, and observe each other’s behavior. Linked to these expectations is how the individual sees the members of their group, and their ability to work together (collective interdependence efficacy). The network structure provides ample opportunity to observe others and form different working relationships.

My hypothesis centered on the creation of collective interdependence efficacy, which is an individual’s belief that their group members possess the ability to interact effectively. Experiential learning theory provided the foundation in this research for testing the ability of group members to learn confidence, and increase their collective interdependence efficacy. Experiential learning theory then became the focus of this research by seeing if improvements it bestowed on participants could be measured directly and quantitatively. By creating an environment where individuals could formulate an action theory, take action, assess the consequences and reformulate a new action theory, Lewin and others provide the necessary bedrock for experiential learning.
Team members in groups have an opportunity to do what they commit to do and build confidence among themselves. In public administration, this confidence is important as collaborations and partnerships increase. Groups of individuals from different agencies working together are becoming commonplace in today’s work environment. Experiential learning is often touted as a forum for improving many different aspects of group interaction, one of which is confidence. Given the method with which I attempted to measure the potential improvements in confidence brought about by experiential learning initiatives, this study suggests that additional research is needed. This research could point to ways of determining the feasibility of measuring improvement gained from experiential learning in general and confidence in particular.

FUTURE RESEARCH

Future areas of research stemming from my findings are important. I would consider quite broadly that there may be evidence to support increases in personal and group attributes through experiential learning that I have missed. I caution that this research does not coalesce around a technical skill, as there is ample evidence to suggest that good sports teams practice together often, for instance. I consider here those things like communication, team work, problem-solving, and confidence. Confidence is by its very nature an amorphous feeling that may itself not be measurable directly30. This research would suggest that more attention needs to be paid to the idea of using a measurable variable, such as Self Try (STRY) and Other Try (OTRY), and then looking to variance to draw inferences from its value.

Specifically, the survey questions that I asked relating to how a participant thought about what they would try to score and what their group members would try to score, could be problematic. There may be discrete errors in measurement. Perhaps these variables do not accurately measure what they ask. When a participant is in the circumstances given in this study, perhaps they have too much time to communicate prior to the start of the exercise. Perhaps the variable is measuring how well a participant plans each other’s actions in a short time and then remembers this plan. If a group were to quickly decide they would all go for 3 points, a person would simply answer 3 for each question on the survey. It may have nothing to do with confidence and everything to do with the plan and their memory. Not only is this a potential problem with my research, but it is an area of future research as well. Additional initiatives could be designed to control for this problem, or ask follow-up questions that clarify which way the respondent was answering. A question clarifying the presence of a plan among group members that queried this might be all that is needed.

Future research could also examine the order and type of experiential learning exercises completed. I alluded to this earlier in the problem section. It may be that the order of the exercises I selected has some impact on the formation of confidence and my ability to measure it given this survey instrument. Group 1 went from the Hazardous Crossing to the Chicken Farm. They seemed to show much smaller variance. They could potentially be a different acting group, but it may be that when a group goes through the Hazardous Crossing, they are set up to have increased confidence. It may be then that the other exercises dilute this or change it in

30 See Shelly’s research on page 5 of this paper.
some fashion, so as to make this decreased variance less recognizable as the day progresses. Future research could look at the order of events as one possible area of change. Secondly, additional research could examine the impact on confidence, or the ability to measure increases in personal attributes through experiential learning, using different exercises. Some exercises may work well and others may not. Some may have quite steep learning curves and produce measurable results faster than others. Future research could look at these qualities of the initiatives themselves to see if there is a pattern.
APPENDIX I: IVCCD Schedule of Events
(As Handed out to Facilitators)

Number of Facilitators Needed: 15 (12 low elements, 3 tower program)
Number of Low Elements / Initiatives: 6

INITIATIVES & ASSIGNED FACILITATORS:
1 & 2: Chicken Farm (rope, 12 cones, 5 chickens, 15 tennis balls, exit survey) (JAMES & LINDA)
3 & 4: Key Pad (small rope and number keys) (JOHN & FRANK)
5 & 6: Sightless Project (3 ropes) (PAM & ELAINE)
7 & 8: Lower the Noodle & Yurt Circle (rope and 2-3 noodles) (KEVIN & GEORGE)
9 & 10: River Rescue (bases, 4 cones, 1/4 bag of props) (KAREN & DARCI)
11 & 12: Hazardous Crossing (4 cones, 1/4 bag of props, blindfolds) (BETSY & LARRY)

THERE ARE TWO GROUPS OF EACH INITIATIVE IN ORDER TO REDUCE THE NUMBER OF PARTICIPANTS. Expect up to 15 or so in your group.

Break-down of Times

8:45 – 9:25: First Block
9:30 – 10:00: Second Block
10:05 – 10:35: Third Block
10:40 – 11:10: Fourth Block
11:15 – 11:45: Fifth Block
11:50 – 12:20: Sixth Block

BREAKS: A 5 min. travel and restroom break is scheduled between initiatives. Many initiatives will have varying length and may end early. If so, groups may be released to break at this time to return to their group until time to move on.

1st BLOCK: The 1st Block is 10 minutes longer than the others so as to allow time for a Name Game warm-up and Common Likes Grouping for persons to start to know each other.

BLOCK LENGTH: 30 minutes (40 minutes for 1st Block)

INITIATIVES LOCATION: Attached is a map of the location of Initiatives. I plan on facilitators arriving at about 0730 AM to help carry equipment and set up initiatives.

DIVISION OF PARTICIPANTS: People from IVCCD will be pre-divided into 12 groups plus a separate division for those who wish to use the tower for the full day. Will we only have to worry about making sure that each person knows where there group is and which group they rotate to.

TOWER (PAUL, ZUERCHER, PATRICK): Tower outline is as follows.

Initial Meeting
Introduction of the Tower
Safety Rules, First Aid
Contract
Name Game
Common Likes Grouping
Base rail Warm-up Exercises
Raising the Sphinx
Cone Hunt & Retrieval
Artesian Beams
Pendulum & Bracing
Swing By Choice

LUNCH

Introduction of Climbing Equipment
Safety Review
Climbing

TOWER POINTS: It is important to keep the group at the tower and to not let them mix or become distracted by the persons doing low initiatives at the far west end of the fenced area.

LOW INITIATIVES: Here also, it is important to keep them focused on the task and not to become distracted with the tower activities or complaining about the day. Iowa Valley Day has not been well-received in the past and it is our job to keep them enjoying and focused on the day. Interact and help guide disruptive conversations. Do not let the groups go early from the assigned area and keep them clear instructions on where to go next. Restroom breaks can occur in limited groups and if at all possible, at the changing time between initiatives.

SCHEDULE:

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You will each be assigned an initiative number (1-12) and you will remain at this initiative all morning. During the FIRST block you will be given the group that corresponds with your INITIATIVE NUMBER (1-12). After this at each change time, you are to instruct your group to move to the next number group. You will notice that the above chart has groups along the top and blocks along the side. If a group is an even number, they move to the next even numbered initiative. The opposite is true for the odd numbered groups. TAKE TIME TO FAMILIARIZE YOURSELVES WITH THIS PROCESS.
APPENDIX II: LOW INITIATIVES

Key Pad
(a.k.a. The Calculator)
(a.k.a. Debugging the System)

Set-Up
Using a permanent, felt-tipped marker, write the numbers 1 through 30 on separate pieces of standard letter paper. Place a piece of non-climbing rope on the ground in a circle about ten feet across. Place the pieces of paper within the circle of rope in random order. They must fill the middle of rope with space in between. Place them with the numbers facing up.

Objective
Participants sit around the outside edge of the rope, equally spaced around the circle. Adjust the size of the rope circle so that there is space for all participants. Participants are now to solve a “computer debugging problem” by touching the numbered pieces of paper in the correct and sequential order starting with one. The faster the time in which they do so, the better.

Rules
Only one participant can touch the inside of the circle at any one time. The stopwatch starts on the command of “go”. Any part of a participant’s body can be used to touch the numbered squares. Groups are penalized 5 seconds for breaking the rules or touching out of order.

Sightless Project

Set-Up
Three non-climbing ropes of increasing size are used. Each is tied to itself so that there are three separate but continuous circles of rope. They are placed on the ground in separate areas.

Objective
Participants are shown their rope and then blindfolded. They are then told to form specific object with the rope. The group with the small rope is told to form a doorway big enough to walk through. The group with the medium length of rope is asked to make an equilateral triangle. The group with the largest circle of rope is told to make a square. As they work and complete their individual projects, they are told that the project is not complete. They must figure out that they can communicate with other groups and combine their projects to form a house with a roof and a door.
**Rules**
Participants must remain blindfolded unless they become disoriented.

**Lower the Noodle & Yurt Circle (these two exercises were done in the same group)**

**Set-Up**
A foam length of tube about six feet long is needed for lower the noodle. For the Yurt Circle, a large length of rope tied to itself forming a circle.

**Objective**
In Lower the Noodle, participants stand facing each other with their arms straight in front of them. They extend their index fingers and should be close enough that their fingers are the only parts overlapping. The noodle is then placed on the fingers, requiring that they all touch it. They are then asked to lower it to the ground while still having everyone touching it.

In the Yurt Circle, participants stand around the outside of the circle of rope. The pick up the rope and stretch it until it is a tight circle. They then lean back all together and balance on the heels of their feet. Once they have accomplished this, they try to have every other person lean in, still being balanced.

**Rules**
In Lower the Noodle, participants all must touch the noodle. If someone is not, they must start over again. In the Yurt Circle, all participants must balance using the rope to lean on. If they fall or come off balance, they start over.

**River Rescue**

**Set-Up**
Four cones are placed on the corners of a rectangle about 30 feet across and 60 feet long. Half the group of participants stand at one end while the other half stand on the other. One group is given rubber baseball bases numbering one less than the number of participants in their group. Props of tennis balls and bean bags are thrown into the rectangle.

**Objective**
The group with the bases is told that their comrades are stranded on the opposite bank of a swift-flowing river. They must use the bases (floating logs) to cross the river and rescue them. The river is swift and a log must have someone standing at least one foot on it at all times or it will float away. It is o.k. to have the rest of a person touching the water, so long as they are touching a log at all times. There are rocks and obstacles to the passage across the river and these must be negotiated around in the journey.

**Rules**
If a log is unattended or not touched, even for a second, the facilitator removes it as it “floats away”. If a person is ever not touching a log, they float away and the group must start over. The rules are only given to the group with the floating logs. They must cross, communicate the rules to the group at the other end, and re-cross successfully. In doing this, they must move around or over obstacles in their path. If they touch one of tennis balls or bean bags, they must start over.

**Hazardous Crossing**

**Set-Up**
Four cones are placed on the corners of a rectangle about 30 feet across and 60 feet long. Props of tennis balls and bean bags are thrown into middle of the rectangle by the group members. They are asked to give something that gets in their way of their ability to do their work on the job. The group is then divided in half and paired up with a partner. One of the partners is blindfolded and stands at one end of the rectangle. The partner goes to the other end of the rectangle.

**Objective**
The partner without the blindfold must yell commands from where they stand to the partner at the other end. They must guide the blindfolded participant across the rectangle, while staying within the boundaries and not touching any of the obstacles.

**Rules**
The participant must remain blindfolded at all times. The group member giving directions can only do so from their end of the rectangle. If a blindfolded participant touches an obstacle or goes out of bounds, they must start over.
APPENDIX III: PARTICIPANT NUMBERS BY GROUP

The number of participants aggregated, by group, with group 0 being the beginning of the day and group 5 being the end of the day. Group 0 had nineteen, group 1 had twenty-four, group 2 had twenty-five, group 3 had twenty-three, group 4 had twenty-four, and group 5 had twenty-six.
APPENDIX IV: CHICKEN FARM SURVEY

The following questions relate to the “chicken farm” exercise that you just completed. Please answer each question as accurately as possible. The results will be used to evaluate this program. Your participation is voluntary and confidential.

What is the letter of your group?_____

Are you? Male____ Female____

How old are you now?
Under 18____ 18-25____ 26-35____ 36-45____ Older than 45____

What score did you GET in the exercise?
0____ 1____ 2____ 3____ 4____ 5____

What score were you TRYING to get?
0____ 1____ 2____ 3____ 4____ 5____

What score did you expect your fellow group members to TRY to get?
0____ 1____ 2____ 3____ 4____ 5____

What score did you expect your fellow group members to ACTUALLY get?
0____ 1____ 2____ 3____ 4____ 5____

How many TOTAL points did your GROUP score in the exercise?_____

If you had to pick ONE WORD to describe your teamwork during the exercise, what would it be?

_________
APPENDIX V: DESCRIPTION OF UNUSED SURVEY VARIABLES

Self Get (SGET) was the name for a variable on the survey asking the individual participant how many points they scored. The value of this variable had to be a whole number between zero (no points) and five (maximum points). Facilitators were present during each participant's throw and were able to clarify for them the number of points that they scored.

Other Get (OGET) is a subjective measure from the participant's perspective of what score they thought their group members would get in the exercise. This is measured in the same way from zero to five as the other variables. In this sense, it is asking the participant what individual score they thought their group members would get. If a participant checked multiple values for this variable, I averaged them as I did before and gave them a final decimal value answer.

Total Points (TOTPT) was the actual score that the group received in the exercise. It was the aggregate score and was a whole number value between zero (the minimum score) and thirty (the maximum score). The reasons that this value could go above the potential maximum of twenty-five points (given a maximum score of five points for all five participants), was that there were occasionally groups of six participants. These groups of six resulted from only one person being left over after a division of the group into smaller groups of five. In order to facilitate team-building, it was necessary to have this one extra person become a member of another group.
APPENDIX VI: F-TEST OF EQUAL VARIANCE

VARIABLE Self Try (STRY)

Formula used:
\[
F = \frac{\text{larger variance}}{\text{smaller variance}}
\]

where \(df\) denotes degrees of freedom.

\(F_{0.05}\) provides the \(H_0\) rejection value threshold.

\(H_0: \sigma_1^2 = \sigma_2^2\)

\(H_a: \sigma_1^2 \neq \sigma_2^2\)

Computation:

\[
F = \frac{.96}{.66}
\]

\(F = 1.45\) (test value)

Group 0: \(n = 19\)
\[
Df = n - 1 = 19 - 1 = 18
\]

Group 5: \(n = 26\)
\[
Df = n - 1 = 26 - 1 = 25
\]

\(F_{18,25,0.05} = 2.16\)

\(1.45 < 2.16\)

Fail to Reject \(H_0\)

Conclude Equal Variance
VARIABLE Other Try (OTRY)

Formula used:

\[ F = \frac{\text{larger variance}}{\text{smaller variance}} \]

\[ F_{df_{larger variance}, df_{smaller variance}, 0.05} \] (provides the \( H_0 \) rejection value threshold)

\[ H_0 : \sigma_1^2 = \sigma_2^2 \]

\[ H_a : \sigma_1^2 \neq \sigma_2^2 \]

Computation:

\[ F = \frac{.8}{.57} \]

\[ F = 1.40 \] (test value)

Group 0: \( n = 19 \)

\[ Df = n - 1 \]

\[ = 19 - 1 \]

\[ = 18 \]

Group 5: \( n = 26 \)

\[ Df = n - 1 \]

\[ = 26 - 1 \]

\[ = 25 \]

\[ F_{18, 25, 0.05} = 2.16 \]

\[ 1.40 < 2.16 \]

Fail to Reject \( H_0 \)

Conclude Equal Variance
APPENDIX VII: TRUST AND CONFIDENCE

"Communities of trust acting to effect positive social change" is one manner that Cahan identifies public-private partnerships operating (1). Agranoff said that it was "clearly trust" when writing on what helps to steer networks. Networks in this sense are simply groups of individuals working together from different organizations. It is the obligation to "be concerned about others' interests, that allows a network to do its work, select its leaders, keep its members, and most important to broker those decisions it must make" (22). With this heavy reliance on trust, it becomes important to understand what trust means.

Trust comes from the German word "frost" which means comfort. In the late 1970's, Gibb defined trust in opposition to confidence. Trust implied something instinctive, and an unquestioning belief. Confidence was more cerebral and was conscious trust based on good reasons, definite evidence or past experience. Confidence centered on expectations (14). The definition of trust evolved during the 1980's and 1990's to include confidence. The usage of the word took on the elements of confidence and its definition became more general to the research. In Buskens and Raub, they acknowledge that the definitions of trust vary (168). Experiential learning literature refers to trust as the foundation for all human relationships (Rose & Buckley 7).

Trust can be based on past experiences with a partner or built on the possibilities for sanctioning an untrustworthy trustee through a person's own or third-party actions (Buskens and Raub 167). The first of these is called a Learning model. It is the focus of this research. Within this model, actors are thought to adapt their own behavior based on the perceived probabilities for certain actions by others, or on the basis of benefits they have received in the past from certain actions (173-4). Beliefs or past choices become the basis for the formation of trust among group members. In essence, how a person believes another will act, or the way they have seen the person act in the past, become the foundation for their trust in that person.

Trust has several elements. In the first step, participants must be placed in a situation where they have a choice to trust another or not. There must be an element of risk, and the choice must lead to beneficial or harmful consequences. Whichever of these consequences develops, it must depend on the actions of another. In the third step, actors must expect to suffer more if they experience the harmful consequences than they will gain from the beneficial ones. Finally the participant must be relatively confident that the other persons) will behave in such a way that the beneficial consequences will result (Deutsch 1962, Johnson & Johnson 126). In summary, a person will find that they are in a situation where they seek to gain or lose something based on the

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31 Gibb also defined trust as instinctive, unstrategized, and freely given (14). Interestingly, trust broadened in the research to incorporate Gibb's definition of confidence.

32 In addition to the Learning model, Buskens and Raub identify a Control model of trust formulation. This involves the possibilities of sanctioning (negative outcomes) an untrustworthy trustee because of the actions of a person placing trust or a third-party (167). In these definitions, the authors assume that actors are rational (168) and the outcome of placing trust is preferable to the outcome of not placing trust. They also note that trust is formulated given a limited set of rules. In learning theory, placing trust based on the belief about another
actions of another person(s). What they gain, must be viewed as less appealing than the consequences of the loss they could suffer. If they are more inclined to believe that the other people in the situation will behave in a positive way, they are said to be experiencing trust.

Springing from this Deutsch has shown that the more group members trust each other, the more effectively they work together (1962, 1973, Johnson 1974). Performance of a group goes up as they learn to trust each other. This performance centers on the accomplishment of mutual goals within the group (Johnson & Johnson 126). Trust is built through the process of risk and confirmation and destroyed through risk and disconfirmation (127). If an individual trusts another, and they are rewarded for their trust, it is confirmed. The opposite can also occur, where they trust another and are wrong in this assumption, experiencing negative consequences. This is disconfirmation. For confirmation to occur in any given situation, the environment must be open, and sharing with expressions of acceptance, support and cooperative intentions within the group (128 my italics). It becomes necessary in groups to have a cooperative environment in order to stand a chance of building trust.

In defining and developing trust among group members, research illustrated has shown how trust can be a result of several factors. Individuals in a collaborative group, with a common goal, work together. They have the opportunity to learn from past experiences with each other and are given opportunities to trust again. In doing so, trust becomes a dynamic and changing relationship between members in a group. Gulati (1995) interprets this to be an indication that trust grows with positive past experiences (Buskens & Raub 174). When a person trusts another, and this trust turns out to be true, they have a positive experience. They then tend to have greater trust in the same person.

actor's behavior is called “Belief-based”. Placing trust in accordance with the benefits received in the past by making certain decisions is called “Choice-reinforcement” (173-4).

Trust is not always appropriate (131). It may also manifest itself as a self-fulfilling prophecy based on the reactions of individuals to their environment, prior to their ability to base trust on previous relations (131).
WORKS CITED


Mischel, Leann J. and Gregory B. Northcraft. “I Think We Can, I Think We Can...The Role of Efficacy Beliefs in Group and Team Effectiveness.” *Advances in Group Processes* 14 (1997): 177-198.


