Readiness to Learn and Group Learning: The Effects of Triggers for Learning and Learning Factors on Learning Readiness and Learning Processes

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Abstract

This study examined the effects of triggers for learning and factors that lead to a group’s readiness to learn and group learning processes. A longitudinal study was conducted over a two year period with a new set of cohorts participating each year for a total of 129 participants. There were 40 male and 76 female participants with 13 not identifying their gender. These participants represented a total of 30 e-boards and residence hall councils. The participants completed individual self report surveys which were aggregated into group level data. A regression analysis was conducted. The results suggest that triggers for learning and learning factors are positively related to group readiness to learn. Furthermore, it suggests that group readiness to learn is positively associated to group learning processes. Consistent with current theory, group learning readiness was positively associated with group learning processes supporting hypothesis one. Factors that lead to a group’s readiness to learn, however, were not found to be positively associated to group learning processes thus not supporting hypothesis two. Finally, boundary permeability was the only learning factor that was associated with learning readiness thus partially supporting hypothesis three. This thesis helps set the foundation for future research on group readiness to learn and builds upon the group learning literature.
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Readiness to Learn and Group Learning: The Effects of Triggers for Learning and Learning Factors on Learning Readiness and Learning Processes

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Readiness to Learn and Group Learning: The Effects of Triggers for Learning and Factors That Lead to a Groups Readiness to Learn on Learning Readiness and Learning Processes.

Researcher’s have recognized the importance of group learning within organizations and have studied group learning (Edmondson, Bohmer, Pisano, 2001; Kasl, Marsick, & Dechant, 1997). However, there has been a lack of research on readiness to learn. Sessa and London have described a model of learning that suggests that readiness to learn is a crucial variable in what learning process a group engages in (London & Sessa, 2006, 2007a, 2007b; & Sessa & London, 2006, 2008a, 2008b). More specifically, they suggest that learning processes are a function of triggers for learning and readiness to learn. This paper will examine readiness to learn. “Readiness to learn is how group’s come to recognize that triggers for learning are occurring and that they need to change and learn something in order to accomplish their work and then actually make a decision to take some sort of action” (London & Sessa, 2008a; Sessa & London 2007a). It is important to understand readiness to learn because it gives the organization and its managers a tool to help a group engage in learning. If a manager understands readiness to learn they can artificially create the right environment for learning to occur. This thesis will explore what factors make up a groups readiness to learn. It will also explore what effect triggers and readiness to learn have on the type of learning process that is engaged in. This thesis will attempt to answer the following questions. What factors make up a groups readiness to learn? What effect does readiness to learn have on the learning process that the group engages in? Finally, what effect does learning readiness and triggers for learning have on the learning processes engaged in by the group?
Organizations throughout the world are increasingly using work teams and this is not simply an American phenomenon (Tindale, Kulik, & Scott, 1991; Yukl, 2009). Groups are becoming increasingly more critical to the survival of the organization, completion of important tasks, and solving complex problems (Tjosvold, Poon, & Yu, 2005). An example of this is organizational use of executive teams for making executive level decisions and research and development teams for the creation of new products and technologies. Organizations are seeking ways to improve the efficiency and effectiveness of work teams (Kasl, Marsick, & Dechant, 1997). An acute understanding of the learning process including readiness to learn can give an organization the knowledge and skills to stimulate learning. Sometimes, tasks are so complex that a single person can not complete the task in a timely and efficient manner. These tasks are assigned to work teams rather than individual associates (Mesmer-Magnus & DeChurch, 2009) to help break up the work into smaller, more manageable units and to utilize the knowledge and skills of the group. The group is expected to take larger projects and create more efficient ways of doing things (Jassawalla & Sashittal, 2002). Groups serve two benefits. First, a group empowers people to use their knowledge, skills, and abilities and second, it allows managers to work on more strategic functions (Chan, Pearson, Entrekin, 2003).

Organizational literature has shifted from predicting team effectiveness to discovering why a group is more effective than another (Ilgen, Hollenbeck, Johnson, Jundt, 2005). It is vital for organizations to foster and maintain a highly effective learning process (Hannah & Lester, 2009) and groups play a critical role in this process. The success of the organization and ability to improve is based on the premise that groups can learn from experiences (Gruenfeld, Martorana, & Fan, 2000). Groups are the main
building blocks of organizations (Wilson, Goodman, & Cronin, 2007) and groups and how they learn have become increasingly important to this learning process.

Groups and teams have been defined in many ways. Thelen (1954) suggested that groups and its members can be defined by others. Furthermore, individuals within the group think of themselves as part of the group and they have a sense of shared purpose. In addition, groups feel as though they communicate easily. Group members need to respond to other members' behavior and they have expectations for behaviors in a given situations. Groups have leadership roles. Finally there is a status system within the group. Similarly, work teams are groups with specific boundaries, roles, and interdependence amongst members and they have a specific job to do (Hackman & Wageman, 2005). Gibson, Cooper, and Conger (2009) specify that work teams contain a group of individuals that are dependent upon each other and share responsibility for achieving a specific outcome. They are complex social systems within an organizational system (London & Sessa, 2006; Morgan, 1943). Individuals make up groups and multiple groups make up departments and divisions. The departments and divisions make up the organization. Each group, department, and division can influence and be influenced by each other. This thesis defines a group as two or more people who are interdependent and interact with each other to perform a specific job, task or function (London & Sessa, 2006).

Individual, group, and organizational learning is intertwined (London and Sessa, 2006; Morgan, 1943) similar to a living system in which each group is influenced by its environment and each group can influence its environment. They are made up of individuals and organizations are made up of groups. Individuals engage in learning and
they bring their knowledge to the group. Groups interact with other groups and individuals within the organization and have the ability to interact with groups from other organizations as well. This interaction helps to disseminate knowledge throughout the organization.

Group learning has been defined as an aggregation of the group members current knowledge and their active pursuit of new knowledge (Argote, Gruenfeld, and Naquin, 2001; Ellis et al., 2003). That is, individuals engage in learning and share this knowledge with the group. Furthermore, Wilson et al. (2007) argue that group learning is an outcome. Finally, researchers argue that group learning is a process (Gibson & Vermeulen, 2003) whereby the team takes action, reflects upon feedback, and adapts to new situations or improves upon old techniques, technologies, or methods (Drach-Zahavy & Somech, 2001; Edmondson, 1999, 2002) and groups create knowledge for their members, for the system, and for others within the organization by engaging in information sharing and then moving through fragmented learning, then individual learning, and finally group learning (Kasl et al., 1997). This thesis will use the following definition of group learning: group learning is “a deepening and broadening of the group’s capabilities in (re)structuring to meet changing conditions, adding and using new skills, knowledge, and behaviors, and becoming an increasingly high performing group through feedback and reflection about it’s own actions and consequences” (London & Sessa, 2006, 2007a, 2007b; & Sessa and London 2006, 2008a, 2008b).

Sessa and London (2006, 2008a, 2008b) and London and Sessa (2007a, 2007b) suggest that triggers for learning, readiness to learn, and factors that lead to a group's readiness to learn will predict what type of learning that the group engages in. There are
three distinct types of learning: adaptive, generative, and transformative learning.

Adaptive is the most basic learning process. It is automatic and often, group members’ do not know that they are engaging in it (London & Sessa, 2007a, 2007b; & Sessa & London 2006, 2008a, 2008b). An example of adaptive learning occurs when a group fails to meet a deadline. Their supervisor becomes angry and the group learns that they need to have their work in on time. The next project, the group plans more effectively and they meet their deadline. The group has learned that it is important to make their deadlines but they may not even be aware that learning has occurred. An additional, example of adaptive learning occurs when a child touches a flame. They learn to never touch a flame again. Adaptive learning is instinctual and occurs when readiness to learn is low but triggers are high.

Generative learning is defined as a purposeful pursuit of new knowledge and skills in the expectation that this new knowledge will assist in the attainment of the goals (London & Sessa, 2007a, 2007b; Sessa & London, 2006, 2008a, 2008b). Learning is actively pursued through classes, internet searches, receiving certification, continuing education credits, and other conscious pursuits of knowledge. The goal of generative learning is to create a change in behavior that will advance the goals of the group. An example of this learning process is when a construction company is going to build a home in a new town that they never worked in before. The construction company has to learn about construction codes that are town specific. If they do not do the research, they may build a structure that violates local codes and then would have to redo the work that was already done. This type of learning often occurs when the group is ready to learn and there are triggers present.
Transformative learning has been described as a renewing and transformative process (Kasl et al., 1997). It is a dramatic and fundamental shift in the way that group’s interact with their environment in order to achieve their goals (London & Sessa, 2007a, 2007b; Sessa & London, 2006, 2008a, 2008b). The group undergoes a transformation and is no longer the group that it started as (London & Sessa, 2007a, 2007b). An example of this type of learning would best be demonstrated by looking at military recruits. They enter the army as civilians with no background and no ability to function as a team on the battlefield. They still view themselves as individuals and, in essence, they are a group of individuals. Through basic training, the team begins to bond and learn skills. When they finish training they are no longer the individuals that entered the army but are now soldiers. They understand how to function in a platoon and as a team. They are no longer a group of individuals who think differently but are now a group of soldiers with like-minded thoughts and a shared goal and identity. This type of learning is likely to occur when there are high triggers and the group is ready to learn (see figure 1).

Groups want to maintain homeostasis and will attempt to maintain homeostasis unless they experience some form of stimulus from its environment (Morgan, 1943; Sessa & London, 2006). Learning is not high on the group’s agenda and learning will only be pursued if it is necessary to complete a task (Sessa & London, 2008). Mismatches in routines and environmental conditions can disrupt a group’s homeostasis and can lead to learning (Levitt & March, 1988). The group is influenced by external and internal forces called triggers (Sessa & London, 2006, 2008a, 2008b) and these forces compel the group to take action. The first step in the learning process is recognizing these triggers.
Figure 1: Triggers and Learning Readiness

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<td>Low</td>
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Triggers can include a change in leadership. A change in leadership can often accompany a change in organizational priorities. This shift in priorities will trigger the group to adjust its priorities to match. An additional example of a trigger could be a change in budget. The group can no longer count on large sums of money to complete a project and now have to find a new, more economical solution. This may begin a search to find this solution and could lead to group learning.

Individuals experience triggers from their environment and they can choose to act. The individual can introduce the trigger to other group members whereby the group can then choose to ignore or act upon it. Finally, the group can then interact with other groups within the organization and share the knowledge with other groups within the entire organization. Triggers can be demands, challenges, pressures, or opportunities that have an effect on the group (London & Sessa, 2007; Sessa & London, 2008a). This thesis recognizes two types of triggers: internal triggers and external triggers. A group can experience multiple triggers at any given time.

Internal triggers consist of changes in membership, leadership, mistakes, ability to explore new ideas, or a change in goals (London & Sessa 2007a; Sessa & London, 2006, 2008a, 2008b). New members may bring a new perspective on an old problem. The member may influence the group and the group may engage in learning. In addition, new leadership within the group can influence the group and guide the group to begin engaging in learning. Even mistakes can lead to learning. A group may want to develop a process to avoid making the same mistake again. A product development team may have a new idea for a product and engage in learning to bring the new idea to fruition. Finally,
a group may experience a change in goals. This may lead the group to begin exploring new techniques to meet this goal.

Groups can also experience external triggers. These consist of any source outside of the group including: supervisors, societal pressures, change in economy, pressure from other groups, budget cuts, and new technologies (Barley, S.R., 1996; Szulanski, 2000; von Hippel, 1994). For example, a group may compare its performance to other groups creating pressure to change. Also, a supervisor’s could identify an organizational need and assign a group to solve the problem. The society, nation, or global community may pressure an organization or group to create new methods of manufacturing. For example, green technology has helped shape how new and old businesses do business. Finally, Economic pressures can limit the options of a group or require the group to re-evaluate new and more financially efficient ways of doing business.

A group can experience triggers but they will only engage in learning processes if the group is ready to learn. Readiness to learn has been studied to a great extent at the individual level. It is an important construct to understand because an organization can utilize this to help a group realize its potential by artificially creating an environment that nurtures a group’s readiness to learn. Sessa and London (2006) suggest that an individual is ready to learn if they are in the right developmental stage, open to change, are goal oriented, have high levels of self efficacy, self esteem, and self regulation. Group readiness to learn, however, is still in its infancy and is still in the theoretical stages of development.
London and Sessa (2008a) and Sessa and London (2007a) state readiness to learn “…is how group’s come to recognize that triggers for learning are occurring and that they need to change and learn something in order to accomplish their work and then actually make a decision to take some sort of action” (London & Sessa, 2008a; Sessa & London 2007a). Readiness to learn has been suggested to moderate the relationship between triggers and the learning process (Sessa & London, 2006). Individual readiness for self-directed learning has been linked to organizational effectiveness (Chien, 2004). It has been suggested that groups who have a more robust level of readiness to learn will be more likely to engage in learning processes.

Sessa and London (2007) hypothesize the there are several factors that lead to a groups readiness to learn. London and Sessa (2006) suggested that a group’s stage of development was a factor in learning readiness. In 2007, London and Sessa said that there are three antecedents to learning which are triggers, readiness to learn, and stage of development. This thesis suggests that environmental triggers, learning readiness consisting of several factors, and learning orientation affect learning. The factors that lead to a group’s readiness to learn consist of: developmental stage, boundary permeability, and a meta-systems perspective.

Similar to an individual’s developmental stage, a group’s developmental stage also dictates a group’s readiness to learn. Sessa and London (2008) define group maturity as a “process of moving from a simple collection of individuals towards a complex and integrated system” (p.556). This takes time to develop and the experiences and knowledge gained through the maturation process can act as a bonding experience for the group as a whole. Individuals that are thrown together to form a group are not automatically
effective (Jassawalla & Sashittal, 1999, 2002). Groups that grow and develop together are more productive than group members working alone (Sessa & London, 2008b). Bunderson and Sutcliffe (2003) found support for teams past performance as a moderator to team learning goal orientation and efficiency suggesting that an experienced team is more effective than a newly formed team. Mature groups have a clear direction and make clear progress which leads to higher levels of readiness to learn. Young groups tend to try to act as individuals which lead to lower levels of productivity. Mature groups become more effective due to mutual trust, shared mental model, group identity, and cohesiveness (Sessa & London, 2008). Groups can interact with one another and more mature groups can transfer knowledge gained by one team member to other team members (Ellis et al., 2003). This thesis will follow Sessa and London’s (2008) proposal that groups developmental stage consists of group trust and a shared mental model.

Group members need to trust that their cohorts will do their share of the work. Trust is earned over time and trust is a good indicator of stability. Stability increases efficiency (Edmondson, Winslow, Bohmer, & Pisano, 2003). New members decrease a group’s stability and must earn the trust of the existing members. This can act a set back and decrease a group’s productivity temporarily while trust is gained. Moreland, Argote, and Krishnan (1998) found that group stability promotes learning. Groups do not have to question what their members are doing because they know that their group members can be trusted to do their jobs (Cooper & Sawaf, 1996). This allows them to focus on learning and development that will benefit the group (Sessa & London, 2006). Finally, trust allows a group to function without questioning its members’ motives, freeing the group up to focus on the task at hand (Sessa & London, 2006; Sims, Salas, & Burker, 2004).
Along with trust comes a well developed shared mental model. This can be best defined as an understanding about the group’s knowledge structures and how the group works together (Sessa & London, 2008). A shared mental model gives individual group members knowledge of how the other members will behave (Sessa & London, 2006). Similar to trust, this develops over time and a more mature group will have a more robust shared mental model. This gives the group an understanding of the group and individuals within the group’s strengths and weaknesses, motivations, and an ability to overcome misunderstandings, and conflicts (Jasswalla & Sashittal, 1999). At the individual level, partners engage in grounding. This is where individuals begin to come to the belief that their partner understands them well enough to continue (Clark & Krych, 2004; Clark & Wilkes-Gibbs, 1986). In essence, the individuals know that their partners know what they know. As the group begins to learn who knows what within the groups they develop a strong transactive memory (Sessa & London, 2006). Transactive memory is the knowledge possessed by each individual about who knows what within the group (Austin, 2003). Transactive memory increases a groups understanding of who has specific knowledge and abilities to complete specific tasks. Transactive memory will be more developed with a mature group and increase a group’s efficiency, effectiveness, and ability to learn (Austin, 2003; Moreland, 1999) and it facilitates efficient access to task relevant expertise (Lewis, 2003) as needed by the group. It gives the group access to more knowledge than any one individual contains (Moreland et al., 1998). Groups with a strong shared mental model are less likely to be confused or stumped by new situations (Sessa & London, 2006).
A group’s identity, or meta-systems perspective, is theorized to have a positive effect on readiness to learn. Membership in a team can become a person’s identity. This level of comfort does not happen instantly but takes time to develop. Groups begin to become more committed to the team and their goals (Van Der Vegt & Bunderson, 2005) as the group matures and individuals become more committed to their team (Jassawalla & Sashittal, 2002). A more mature group will have a stronger meta-systems perspective. Meta-systems perspective consists of self construal, environmental sensitivity, and a unified mental model.

Members of a group begin to develop a strong identification with the group. This is self construal. Group members begin to identify with the team, think that being a member of the team is important, are dedicated to the team, and individual members tend to act as a team (Sessa & London, 2006). Members who begin to identify with the team will be more likely to have a team orientation and have a preference for working with team members (Driskell & Salas, 1992). This will increase group effectiveness (Driskell & Salas, 1992; Wagner, 1995).

Groups that are more mature have a greater sensitivity to their environment and develop a unified mental model. A mature group has trust, transactive memory, and a shared mental model. This frees the group up to be open to the environment. They can concentrate on aligning the group’s role with the goals and mission of the organization. Furthermore, the group agrees on its goals and how to accomplish the task. The group is on the same page and this leads to a more productive group.

Finally, mature groups have a more robust ability to stretch beyond its boundaries. A group that is free to concentrate on the task at hand, is on the same page, has a strong
transactive memory, and is open to their environment may seek out external groups to work with. Furthermore, they may be more likely to notice external triggers. Groups with strong boundary permeability have more options for engaging in learning, finding resources, and a stronger organizational awareness. Gibson and Vermeulen (2003) suggest that subgroups may form within groups. This can create problems within the group. However, boundary permeability could mediate these problems even within subgroups.

Group boundaries create an invisible barrier which defines the group as a single unit. This includes its function, members, its budget and even its limitations. The boundary acts to protect and buffer the individuals from other groups and can be closed off from influences of others. It creates a clear identity that can be identified by those within the group as well as those external to the group (Sessa & London, 2008b).

Boundary permeability is the group's ability to stretch beyond its boundaries as well as the ability for its environment to influence the group (Sessa & London, 2008b). Boundary permeability can best be seen when an executive team needs the assistance of a human resource team in the hiring process of a high level executive. The executive team may not be aware of all of the legal and policy issues that may come into effect. They reach out, beyond their boundaries, to begin working with the human resource team. Boundaries serve to enclose the group and can prevent the group from seeing opportunities or solutions. It can also restrict access to much needed resources (Sessa & London, 2008b). Some level of permeability is needed for the group to engage in learning (Sessa & London, 2008b). Groups with an awareness that stretches beyond its boundaries will be more likely to take on more challenging projects and are more likely to try new
ideas. They will be more likely to notice new opportunities. This awareness allows them to look beyond their boundaries and explore new trends and technologies. Groups with a greater level of boundary permeability are more likely to reach outside of the group for help and will acknowledge and accept external feedback more readily. Groups with more boundary permeability are more likely to be ready to learn (London & Sessa, 2007a).

Individual group members can have an effect on the group particularly the individual’s goal orientation. Goal orientation represents the desire of an individual, group or organization in achieving their goal (Brett & Vandewalle, 1999; Porter, 2005, 2008). Goal orientation is believed to play a part in learning. It has been found to be related to responses to feedback, adaptability, and team performance (Porter, 2005, 2008). Goal orientation is an individual’s orientation towards a task. It is a construct that originated in educational literature which suggests that people can be categorized as either learning oriented or performance oriented (Bell & Kozlowski, 2002). This thesis focuses on learning orientation since it is believed that learning orientation has a positive effect on learning (Sessa & London, 2006, Sessa & London, 2008b).

Learning orientation is an important variable in team learning (Bunderson & Sutcliffe, 2003) and groups vary in their proactive learning orientation (Bunderson and Sutcliffe, 2002, 2003). A person with a learning goal orientation has a desire to develop their competence and look to develop new skills. They seek to gain mastery over new situations (Brett & VandeWalle, 1999; Bunderson & Sutcliffe, 2003). They have a preference for challenging tasks and they tend to deal with these tasks in an adaptive way which includes the investment of additional effort to develop new skills (DeRue & Wellman, 2009; Hirst, Van Knippenberg, & Zhou, 2009). They are also not afraid of
failure and they persist even in the face of failure. They utilize more complex learning strategies and do not shy away from more difficult tasks (Bell & Kozlowski, 2003). These individuals are more experimental in their methods (Porter, 2005, 2008). They also believe that their ability is malleable and they can learn new skills (Hirst, Van Knippenberg, & Zhou, 2009) and view errors as feedback and an opportunity for learning (DeRue & Wellman, 2009). Finally, learning goal orientation tends to predict adaptive behavior, attitudes, and outcomes (Bunderson & Sutcliffe, 2003). A group with a higher learning goal orientation should engage in more learning processes.

It has been suggested that triggers will be positively related to group learning (London & Sessa, 2007a, 2007b; Sessa & London, 2006, 2008a, 2008b). Furthermore, groups need to notice some form of change in the environment (Levitt & March, 1988) and mismatches in their environment compel groups to engage in learning (Morgan, 1943; Sessa & London, 2006). Thus if the groups notices a change and is no longer in homeostasis then a group should engage in learning to resolve the environmental trigger that has upset the status quo. Learning will occur. An example occurs when a production team notices a trend toward green technology from the news media and magazines. They experience an external trigger. Their current prototype has been designed using older materials. They believe that they could capture a larger market share if they find a way to incorporate green technology within their new product. They begin researching new materials and they decide to use the latest in recycled plastics and solar cells. They change in materials will add a small increase in production costs but the potential increase in sales is predicted to offset the price. The group decides to go through with the new design.
Hypothesis one: Groups with more robust triggers will demonstrate more learning processes than groups with less robust triggers.

Readiness to learn has also been linked to learning processes. Groups that are more ready to learn are more likely to notice environmental triggers and thus more likely to engage in more complex learning processes (London & Sessa, 2007a, 2007b; Sessa & London, 2006, 2008a, 2008b).

Hypothesis two: Groups with a higher readiness to learn will demonstrate more generative learning and transformative learning than groups with a lower readiness to learn.

Finally, groups need to be ready to learn. Learning theory has suggested that several factors influence learning readiness. Sessa and London (2006) have suggested that a group’s readiness to learn is influenced by the group’s developmental stage, boundary permeability, and meta-systems perspective as well as the individuals learning goal orientation. Groups with more robust boundary permeability, developmental stage, meta-systems perspective, and learning goal orientation should have a higher level of learning readiness.

Hypothesis three states: Factors that lead to a groups’ readiness to learn will have a positive effect on learning readiness.

Method
A longitudinal study was conducted with e-board members and residence hall councils at Montclair State University and SUNY Stonybrook. Data was collected from two groups of cohorts over a two year period using a series of three surveys. The criteria for participation were that two or more members of the e-board or residence hall must participate. At least two members of the e-board or residence hall must complete all three surveys (although each survey could include different sets of respondents). A $50.00 donation was awarded to two groups at Montclair State University to help boost participation.

Participants

This study was open to all e-board members and residence hall councils on the campus of Montclair State University and SUNY Stonybrook. There were two cohorts of participants over two years. There were 62 participants in year one and 67 participants in year two. There were 40 male and 76 female participants with 13 not identifying their gender. These participants represented a total of 30 e-boards and residence hall councils.

Participants were recruited using several methods. First, teams were approached at their offices or at the yearly organization fair on the MSU campus. The clubs and organizations were told about the study and asked to participate. If the clubs were interested they were signed up on the spot or their e-mail was taken to follow up. Second, the Student Government Association president sent e-mails to all of the clubs advertising our study. Third, we posted flyers around the campus to encourage club participation. Finally, we offered a small incentive for participation. The incentive was a $50.00 donation in the name of the organization and made out to a charity of the organizations.
choosing. Two such awards were granted per year and the winning clubs were chosen at random with the ability to win two awards per year.

**Materials and Procedure**

E-mails were sent to participants over the period of a year and the groups were given time to complete the surveys at their own convenience. The e-mail contained a link to the survey that was to be completed. Each participant was sent three e-mails containing the link to each survey as they were released. Periodic reminders were sent out to participants on a weekly basis. The surveys were open for a period of one month each. The first survey was posted in October. The second was posted in February. The third and final survey was posted at the end of April and remained open until the end of the semester. The participants were debriefed and thanked for their participation upon the completion of the third survey. This thesis focuses on readiness to learn and only utilizes survey one and survey two.

**Survey 1**

Survey one contained scales measuring triggers for learning, readiness to learn, and learning orientation. There were thirteen items in survey one used to measure triggers for learning (see appendix A for complete list of survey items). Participants responded on a 5 point scale ranging from 1 (not at all) to 5 (to a very great extent). Items include: The e-board of this club is currently facing a major change in membership of the e-board and the e-board of this club is currently facing a major change in goals of either the club or e-board. A factor analysis using principal components extraction and a varimax rotation extracted three factors: external triggers, internal triggers (disorganized and conflict), and internal triggers (pressure to change). These three factors accounted for 59.691% of the
variance in the responses. An example of the external trigger item is: Our e-board is currently facing other pressures from outside. An example of an internal trigger (disorganized conflict) is: Our e-board is currently feeling we are disorganized. An example of an internal trigger (pressure to change) is: Our e-board is facing a major change in membership of the e-board. The Cronbach's alpha for the scales were .814 (external), .764 (internal disorganized conflict), and .741 (internal pressure to change) respectively.

There were six items in survey one used to measure readiness to learn (see appendix A for complete list of survey items). Participants responded on a 5 point scale ranging from 1 (not at all) to 5 (to a very great extent). Items include: The e-board of this club is comfortable with keeping things the way they are now. Factor analysis using principal components extraction and a varimax rotation extracted only one component. The six items had a Cronbach’s alpha of .818.

There were 35 items in survey one used to measure factors leading to a group’s readiness to learn (see appendix A for complete list of survey items). Participants responded on a 5 point scale ranging from 1 (not at all) to 5 (to a very great extent). A factor analysis using principal components extraction and a varimax rotation extracted five components. The five factors were identified as: high performing team, self construal, boundary permeability, no mental model, and conflict. The five factors attributed to 52.419% of the variance. An example of a high performing team item is: Our e-board is open to new ideas. An example of a self construal item is: Our e-board members rely on each other. An example of a boundary permeability item is: Our e-board seeks input about clubs/organization’s performance from people outside of the
club/organization). An example of a no mental model item is: Our e-board spends a lot of time planning how it will get its work done. Finally, an example of a conflict item is: Our e-board challenges the club president’s ideas constantly. The Cronbach’s alpha for these five factors are: .900 (high performing team), .868 (self construal), .716 (boundary permeability), .738 (no mental model), and .549 (conflict).

Participants answered a 13 item learning orientation scale (Vandewalle, 1997; see appendix A for complete list of survey items). Participants responded on a 5 point scale ranging from a 1 (not at all) to a 5 (to a very great extent). The 13 items represent three factors: learning goal orientation, performance-avoid, and performance-prove. The Cronbach’s alpha for learning goal orientation was .88 while the Cronbach’s alpha for performance-avoid was .83 and performance-prove was .84 (Vandewalle, 1997; Brett & Vandewalle, 1999). These scores corresponded with the Cronbach’s alpha in this thesis with a Cronbach’s Alpha of a .866 for learning goal orientation, .834 for performance avoid, and a .842 for performance prove goal orientations.

Survey 2

Survey two contained scales measuring learning processes. There were twenty items in survey two used to measure learning processes (see appendix A for complete list of survey items). Participants responded on a 5 point scale ranging from 1 (not at all) to 5 (to a very great extent). A factor analysis using principal components extraction and a varimax rotation extracted two components: transformative learning and generative learning. The two factors accounted for 50.818% of the variance. An example of a transformative learning item is: Our e-board frequently makes small improvements in the way the group operates. An example of a generative learning item is: Our e-board often
were warranted, $r_{wg(j)}$ was computed for the remainder of the variables (James, Demaree, & Wolfe, 1993; Lebreton, James, & Lindell, 2005; LeBreton & Senter, 2007) and the $r_{wg(j)}$ was .84 for items in survey one and .75 for items in survey two. Individual scores for each measure were aggregated and a team mean was computed for each scale to create team level scores.

Results

See table 1 and table 2 for individual item reliabilities, means, standard deviations, sample size for individual level self-report measures, and for individual item correlation coefficients. See table 3 and 4 for group level item means, standard deviations, sample sizes for individual level self report measures, and group level item correlation coefficients. See table 5 for Regression results for equations relating learning processes (generative and transformative) to triggers and readiness to learn and table 6 for Regression results for equations relating learning readiness to learning readiness factors (High Performing Team, Self Construal, Boundary Permeability, No Mental Model, Conflict, Learning Goal Orientation).
tries out new things using a trial and error approach. The Cronbach’s alpha for transformative learning is .905 and the Cronbach’s alpha for generative learning is .885.

**Group Level of Analysis**

It was necessary to create team-level variables because the hypotheses were conceptualized at the team level of analysis, As learning goal orientation is an individual level variable, a team mean of individual learning goal orientations was created by aggregating individual learning goal orientations. To determine if team-level variables
Table 1: Individual item reliabilities, means, standard deviations, and sample size for individual level self-report measures.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach’s Alpha</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
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<td>External Triggers</td>
<td>.814</td>
<td>.016315</td>
<td>.99199</td>
<td>97</td>
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<tr>
<td>Internal Triggers (Disorganized and Conflict)</td>
<td>.764</td>
<td>-.021232</td>
<td>.98273</td>
<td>97</td>
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<tr>
<td>Internal Triggers (Pressure to Change)</td>
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<td>Learning Readiness</td>
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<td>.79480</td>
<td>97</td>
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<td>High Performing Team</td>
<td>.900</td>
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<td>.60578</td>
<td>99</td>
</tr>
<tr>
<td>Self Construal</td>
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<td>3.7178</td>
<td>.74190</td>
<td>99</td>
</tr>
<tr>
<td>Boundary Permeability</td>
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<td>3.2250</td>
<td>.62344</td>
<td>99</td>
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<tr>
<td>No Mental Model</td>
<td>.738</td>
<td>2.7864</td>
<td>.75716</td>
<td>99</td>
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<tr>
<td>Conflict</td>
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<td>1.8519</td>
<td>.63571</td>
<td>99</td>
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<td>Learning Goal Orientation</td>
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<td>.70269</td>
<td>98</td>
</tr>
<tr>
<td>Transformative Learning</td>
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<td>3.4596</td>
<td>.74918</td>
<td>97</td>
</tr>
<tr>
<td>Generative Learning</td>
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<td>3.2714</td>
<td>.76589</td>
<td>97</td>
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Table 2: Individual Self Report Correlations

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<tr>
<th>Items</th>
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<td>1. External Triggers</td>
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<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>2. Internal Triggers (Disorganized and Conflict)</td>
<td>0.035</td>
<td>1.000</td>
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<tr>
<td>3. Internal Triggers (Pressure to Change)</td>
<td>-0.005</td>
<td>0.007</td>
<td>1.000</td>
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<tr>
<td>4. Learning Readiness</td>
<td>0.004</td>
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<td>0.180</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. High Performing Teams</td>
<td>-0.028</td>
<td>-0.616***</td>
<td>0.051</td>
<td>0.611***</td>
<td>1.000</td>
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<td></td>
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</tr>
<tr>
<td>6. Self Construal</td>
<td>0.048</td>
<td>-0.455***</td>
<td>0.097</td>
<td>0.544***</td>
<td>0.719***</td>
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<td></td>
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<tr>
<td>7. Boundary Permeability</td>
<td>0.247*</td>
<td>-0.135</td>
<td>0.235*</td>
<td>0.504***</td>
<td>0.374***</td>
<td>0.527***</td>
<td>1.000</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>8. No Mental Model</td>
<td>-0.022</td>
<td>0.443***</td>
<td>-0.121</td>
<td>-0.388***</td>
<td>-0.466***</td>
<td>-0.470***</td>
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<tr>
<td>9. Conflict</td>
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<td>0.467***</td>
<td>0.031</td>
<td>-0.282***</td>
<td>-0.422***</td>
<td>-0.261**</td>
<td>0.232*</td>
<td>0.287*</td>
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</tr>
<tr>
<td>10. Learning Goal Orientation</td>
<td>-0.018</td>
<td>-0.219*</td>
<td>0.255***</td>
<td>0.430***</td>
<td>0.273***</td>
<td>0.291***</td>
<td>0.337***</td>
<td>-0.182</td>
<td>0.015</td>
<td>1.000</td>
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</tr>
<tr>
<td>11. Transformative Learning</td>
<td>0.078</td>
<td>-0.161</td>
<td>0.018</td>
<td>0.507***</td>
<td>0.547***</td>
<td>0.587***</td>
<td>0.361***</td>
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<td>-0.216</td>
<td>0.218</td>
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<tr>
<td>12. Generative Learning</td>
<td>0.123</td>
<td>-0.189</td>
<td>-0.046</td>
<td>0.423***</td>
<td>0.465***</td>
<td>0.393***</td>
<td>0.208</td>
<td>-0.199</td>
<td>-0.296*</td>
<td>0.113</td>
<td>0.786***</td>
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</table>

N=see table 1 for item populations
*=p<.05; **=p<.001
Table 3: Group level item means, standard deviations, and sample size for individual level self-report measures

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean</th>
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<tbody>
<tr>
<td>External Triggers</td>
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<tr>
<td>Internal Triggers (Disorganized and Conflict)</td>
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<td>Internal Triggers (Pressure to Change)</td>
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<td>Learning Goal Orientation</td>
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</tr>
<tr>
<td>Learning Readiness</td>
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<td>0.55308</td>
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<tr>
<td>High Performing Team</td>
<td>4.1423</td>
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<td>Self Construal</td>
<td>3.7083</td>
<td>0.51475</td>
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<td>Boundary Permeability</td>
<td>3.2158</td>
<td>0.46920</td>
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<td>No Mental Model</td>
<td>2.7888</td>
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<td>Conflict</td>
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<td>Transformative Learning</td>
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<td>0.57172</td>
</tr>
<tr>
<td>Generative Learning</td>
<td>3.2939</td>
<td>0.61824</td>
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N=30
Table 4: Group Level Self Report Correlations

<table>
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<tr>
<th>Items</th>
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<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
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<tbody>
<tr>
<td>1. External Triggers</td>
<td>1</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2. Internal Triggers (Disorganized and Conflict)</td>
<td>0.188</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>3. Internal Triggers (Pressure to Change)</td>
<td>0.068</td>
<td>0.276</td>
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<td>4. Learning Readiness</td>
<td>0.264</td>
<td>-0.348</td>
<td>0.192</td>
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<td></td>
</tr>
<tr>
<td>5. High Performing Teams</td>
<td>0.17</td>
<td>-0.655***</td>
<td>-0.09</td>
<td>0.560***</td>
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<td></td>
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<tr>
<td>6. Self Construal</td>
<td>0.25</td>
<td>-0.483***</td>
<td>-0.048</td>
<td>0.667***</td>
<td>0.820***</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7. Boundary Permeability</td>
<td>0.32</td>
<td>-0.105</td>
<td>0.364*</td>
<td>0.535***</td>
<td>0.384*</td>
<td>0.520***</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>8. No Mental Model</td>
<td>-0.069</td>
<td>0.529***</td>
<td>-0.054</td>
<td>-0.459*</td>
<td>-0.308</td>
<td>-0.376*</td>
<td>-0.122</td>
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</tr>
<tr>
<td>9. Conflict</td>
<td>0.396*</td>
<td>0.575***</td>
<td>0.144</td>
<td>-0.252</td>
<td>-0.384*</td>
<td>-0.253</td>
<td>0.238</td>
<td>0.409***</td>
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</tr>
<tr>
<td>10. Learning Goal Orientation</td>
<td>0.097</td>
<td>0.036</td>
<td>0.332</td>
<td>0.431*</td>
<td>0.144</td>
<td>0.299</td>
<td>0.393*</td>
<td>-0.242</td>
<td>0.301</td>
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<tr>
<td>11. Transformative Learning</td>
<td>-0.011</td>
<td>-0.352</td>
<td>0.068</td>
<td>0.528***</td>
<td>0.654***</td>
<td>0.615***</td>
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<td>-0.138</td>
<td>-0.258</td>
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<tr>
<td>12. Generative Learning</td>
<td>0.076</td>
<td>-0.401*</td>
<td>-0.018</td>
<td>0.485***</td>
<td>0.700***</td>
<td>0.628***</td>
<td>0.314</td>
<td>-0.201</td>
<td>-0.356</td>
<td>0.011</td>
<td>0.875***</td>
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</table>

N=30

*=p<.05; **=p<.001
Table 5: Regression results for equations relating learning processes (generative and transformative) to triggers and readiness to learn.

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Generative Learning</th>
<th>Transformative Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>External 1</td>
<td>.02</td>
<td>-.11</td>
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<td>Internal 1</td>
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<td>Internal 2</td>
<td>-.02</td>
<td>.03</td>
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<tr>
<td>Learning Readiness</td>
<td>.39*</td>
<td>.50*</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.29*</td>
<td>.22*</td>
</tr>
</tbody>
</table>

$N=30$

$^+ p<.10, ^* p<.05$
Table 6: Regression results for equations relating learning readiness to learning readiness factors (High Performing Team, Self Construal, Boundary Permeability, No Mental Model, Conflict, and Learning Goal Orientation)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Learning Readiness</th>
</tr>
</thead>
<tbody>
<tr>
<td>High performing team</td>
<td>.02</td>
</tr>
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<td>Self Construal</td>
<td>.28</td>
</tr>
<tr>
<td>Boundary Permeability</td>
<td>.33</td>
</tr>
<tr>
<td>No Mental Model</td>
<td>-.13</td>
</tr>
<tr>
<td>Conflict</td>
<td>-.28</td>
</tr>
<tr>
<td>Learning Goal Orientation</td>
<td>.27</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.52**</td>
</tr>
</tbody>
</table>

N=30
$^+=p<.10$, **$p<.01$
To test hypothesis 1, generative learning was regressed on triggers and learning readiness ($R^2=.29$, $p<.10$). Learning readiness was positively related to generative learning ($\beta=.39$, $p<.10$). To test hypothesis 2, transformative learning was regressed on triggers for learning and learning readiness ($R^2=.22$, $p<.05$). Learning readiness was positively related to transformative learning ($\beta=.50$, $p<.05$). This suggests that groups that are ready to learn are more likely to engage in more learning processes. Finally, to test hypotheses 3, we regressed learning readiness on learning factors ($R^2=.52$, $p<.01$). Boundary permeability was positively related to learning readiness ($\beta=.33$, $p<.10$). While there have been strong individual correlations between factors for learning and learning readiness, boundary permeability was the only factor found to be positively related to learning readiness during the regression analysis.

**Discussion**

This thesis adds to the existing literature on group learning and more specifically, helps set the foundation for group readiness to learn. No evidence was found to suggest that triggers for learning have an effect on learning processes however, this thesis does demonstrate that readiness to learn at the group level is positively related to both generative and transformative learning at the group level as suggested by London and Sessa (2006, 2007a, 2007b) and Sessa and London (2006, 2008a, 2008b). Furthermore, the findings also suggest that boundary permeability is also positively related to learning readiness. This lends support to the existing learning theory of London and Sessa (2007a) and Sessa and London (2008b).

**Implications for Theory and Future Research:**
The nature of business almost demands that organizations continuously learn. It is "valued in learning organizations because it is vital for surviving and prospering, in a dynamic and competitive environment" (Popper & Lipshitz, 1998) and is becoming increasingly important to the effectiveness of organizations and their individual employee success (Maurer, Weiss, & Barbeite, 2003). To remain competitive, they must continue to develop, adapt to changing technological advances, and learn in the process. Organizations that encourage and actively pursue new knowledge and innovation also develop new products and services for current customers as well as new and emerging markets around the world (Jansen, Vera, & Crossan, 2009). Organizational survival is contingent on the ability to explore and discover new capabilities and exploit and adapt old ones (Nemanich & Vera, 2009; Yukl, 2009). Organizations that understand how groups learn have a greater chance of encouraging groups to engage in learning. They can stimulate groups to engage in different learning processes and can nurture an environment conducive of learning.

To avoid repeat mistakes, an organization must learn. Mistakes can be costly and have detrimental effects on an organization (Barker and Neailey, 1999). Furthermore, the nature of business has shifted from production to service and knowledge based work (Townsend, DeMarie, & Hendrickson, 1998) which requires organizations to shift its focus. The shift in focus creates opportunities for mistakes as well as learning.

Organizations throughout the world are increasingly using work groups instead of individual workers to accomplish tasks and goals (Cohen & Bailey, 1997). Organizations are seeking ways to improve the efficiency and effectiveness of work
teams (Kasl et al., 1997). A strong understanding of learning readiness can be an additional tool in the future manager’s tool box.

Future research should attempt to replicate this thesis but with a larger sample size. Increasing the group size may tease out additional results that were hidden by the low power of this study. Furthermore, the study would benefit from other types of groups including groups in a workplace setting, sports teams, and music groups.

Most groups have someone in charge. This person could be the shift supervisor, manager, executive, or even a coach (Hackman & Wageman, 2005). According to Waldman, Berson, and Keller (2009), “Leaders serve as the primary orchestrators of learning.” What effects do leaders and coaches have on a group’s readiness to learn? This study did not address this issue and there are several studies calling for this research to be pursued.

Organizations are increasingly using coaches. What roles do coaches play in a group’s ability to learn? Can they help a group recognize triggers? Encourage groups to reach beyond their boundaries? Or do they hinder group learning. Research could help lend support for the use of coaches within organizations.

Yeo, Loft, Xiao, & Kiewitz (2009) argue that goal orientation is malleable, meaning that it changes over time. This study takes a measure of learning goal orientation at one point in time. Goal orientation, studied over time, may show different results and different triggers may trigger different levels of learning orientation. Furthermore, this malleability could account for the lack of significant results on goal orientations relationship with readiness to learn. For example, does a trigger that threatens the organization stimulate readiness to learn at a higher level
than a minor trigger and furthermore, does it encourage the individuals within a group to acquire a different learning orientation. Research in this area may not only identify the malleability of learning orientation but it may also identify the learning goal orientation’s ability to be triggered by supervisors and coaches. This would be an interesting study and could shed light on why there is often overlap within the different learning orientations.

**Limitations:**

This thesis utilized a small sample size of 30 groups. The power in this study was low so this thesis utilized a significant p value of .10 instead of a .05. Increasing the total number of groups may increase the noticeable effect of the variables. In addition, this study used a series of self-report surveys. While the self-report surveys are effective, external observations would add to the validity of the study. It is possible that some of the group members may not actually perceive the triggers and other events in an unbiased way. Furthermore, this study looked at perceived triggers and not actual triggers. Future research could ask questions regarding specific triggers and even strength of these triggers. This can also be done by including an observational component whereby an unbiased observer or supervisor can report on triggers. Finally, the study was conducted on two college campuses with students which may not simulate real world work groups. These groups may not have the same level of investment as an investment banker may have. It would be interesting to see how other groups experience triggers and how these triggers interact with readiness to learn and affect learning processes.
In conclusion, this thesis did find support for learning readiness and its effects on learning processes. Furthermore, learning factors were found to be partially related to learning readiness. Future research should focus on looking deeper into the factors that make up learning readiness. Understanding these factors will go a long way in helping an organization foster group learning within their organizations.
References


Lebreton, J.M., James, L.R., & Lindell, M.K. (2005). Recent issues regarding \( rwg, r^*wg, rwg(j) \), and \( r^*wg(j) \). *Organizational Research Methods, 9*(1), 128-138. Doi:10.1177/1094428104272181


Moreland, R.L., Argote, L., Krishnan, R. (1998), Training people to work in groups.


Doi:10.1016/j.leaqua.2008.11.002


Appendix A

Individual item means, standard deviations, and sample size for individual level self-report measures

<table>
<thead>
<tr>
<th>Scale</th>
<th>N</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pressure from Within the Team</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The e-board of this club is currently facing a major change in membership of the e-board.</td>
<td>101</td>
<td>2.06</td>
<td>1.156</td>
</tr>
<tr>
<td>The e-board of this club is currently facing a major change in goals of either the club or the e-board.</td>
<td>101</td>
<td>2.14</td>
<td>1.158</td>
</tr>
<tr>
<td>The e-board of this club is currently exploring ideas for how to do things differently.</td>
<td>101</td>
<td>3.27</td>
<td>.958</td>
</tr>
<tr>
<td>The e-board of this club is currently considering changing our mission.</td>
<td>101</td>
<td>1.55</td>
<td>.964</td>
</tr>
<tr>
<td>The e-board of this club is currently feeling we are disorganized.</td>
<td>101</td>
<td>2.10</td>
<td>1.025</td>
</tr>
<tr>
<td>The e-board of this club is currently feeling like we made a mistake that we have to fix.</td>
<td>101</td>
<td>1.54</td>
<td>.878</td>
</tr>
<tr>
<td>The e-board of this club is currently facing other pressures from within the executive team.</td>
<td>100</td>
<td>1.90</td>
<td>1.096</td>
</tr>
<tr>
<td><strong>Pressures from Outside the Team</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The e-board of this club is currently facing unrealistic expectations that others have for us.</td>
<td>99</td>
<td>1.61</td>
<td>.924</td>
</tr>
<tr>
<td>The e-board of this club is currently facing significant obstacles to reaching our goals.</td>
<td>101</td>
<td>2.11</td>
<td>1.122</td>
</tr>
<tr>
<td>The e-board of this club is currently facing significant time pressure to get things done.</td>
<td>101</td>
<td>2.26</td>
<td>1.155</td>
</tr>
<tr>
<td>The e-board of this club is currently finding we are not as successful as other groups.</td>
<td>101</td>
<td>1.68</td>
<td>.989</td>
</tr>
<tr>
<td>The e-board of this club is currently competing for resources with other clubs/organizations.</td>
<td>100</td>
<td>2.24</td>
<td>1.215</td>
</tr>
<tr>
<td>The e-board of this club is currently facing other pressures from outside.</td>
<td>101</td>
<td>1.89</td>
<td>.948</td>
</tr>
<tr>
<td><strong>Readiness to Learn</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The e-board of this club is comfortable with keeping things the way they are now.</td>
<td>101</td>
<td>3.14</td>
<td>1.200</td>
</tr>
<tr>
<td>The e-board of this club resists doing things differently.</td>
<td>101</td>
<td>1.59</td>
<td>.896</td>
</tr>
<tr>
<td>The e-board of this club looks for opportunities to learn new skills and knowledge.</td>
<td>101</td>
<td>3.70</td>
<td>1.127</td>
</tr>
<tr>
<td>The e-board of this club is willing to take risks on new ideas in order to find out what works.</td>
<td>101</td>
<td>3.61</td>
<td>1.058</td>
</tr>
<tr>
<td>The e-board of this club likes to work on things that require learning new skills and knowledge.</td>
<td>101</td>
<td>3.44</td>
<td>1.034</td>
</tr>
<tr>
<td>The e-board of this club sees learning and developing skills as very important.</td>
<td>100</td>
<td>3.67</td>
<td>1.092</td>
</tr>
<tr>
<td><strong>Boundary Permeability (openness)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The e-board of this club asks people outside the team for assistance or information.  
The e-board of this club seeks input about the club/organization's performance from people outside the club/organization.  
The e-board of this club keeps up with what's going on in other clubs at this university.  
The e-board of this club is open to new ideas.  
The e-board of this club tends to ignore information that does not fit with the usual way of doing things.  

**Developmental Stage**  
The e-board of this club is not clear yet on what the goals of the group are.  
The e-board of this club lacks direction.  
The e-board of this club has made little progress.  
The e-board of this club tends not to bring up conflict.  
The e-board of this club tends to go along with whatever the club president suggests.  
The e-board of this club challenges the club president's ideas constantly.  
The e-board of this club demonstrates a lot of disagreement on how things should be done.  
The e-board of this club spends a lot of time planning how it will get its work done.  
The e-board of this club relies on each other.  
The e-board of this club works as a team.  
The e-board of this club forms subgroups or subcommittees to work on specific tasks.  
The e-board of this club acts on its decisions.  
The e-board of this club is about to complete a project.  
The e-board of this club encourages high performance and quality work.  

**Meta-Systems Perspective (Self-Construal Items)**  
E-board members strongly identify with the team.  
E-board members think being a member of this group is important.  
E-board members are dedicated to the team’s goals.  
E-board members tend to act individually as opposed to pulling together as a team.  

**Meta-Systems Perspective (Sensitivity to the Environment)**  
E-board members recognize each other’s strengths and weaknesses.  
E-board members are aware of the contribution each member of the team can make to the team effort.  
E-board members know what to expect from each other.  
E-board members try to align our individual goals with this...
club’s mission, goals, or strategy. E-board members try to align our club’s outcomes with the university’s mission, goals, or strategy.

E-board members are sensitive to ways other clubs can contribute to this group.

E-board members from relationships with other clubs.

**Unified Mental Model**

E-board members agree on club goals.

E-board members differ in how we want to go about doing the teams projects.

E-board members differ in how we view the world.

E-board members differ in our way of thinking about each other.

E-board members differ in issues we think are important.

**Learning Orientation**

I am willing to select a challenging school assignment that I can learn a lot from.

I often look for opportunities to develop new skills and knowledge.

I enjoy challenging and difficult tasks at school where I’ll learn new skills.

For me, development of my academic ability is important enough to take risks.

I prefer to work in situations that require high levels of ability and talent.

I like to show that I can perform better than my classmates.

I try to figure out what it takes to prove my ability to others at school.

I enjoy it when others at school are aware of how well I am doing.

I prefer to work on projects where I can prove my ability to others.

I would avoid taking on a new task if there was a chance that I would appear rather incompetent to others.

Avoiding a show of low ability is more important to me than learning a new skill.

I am concerned about taking on a task at school if my performance would reveal that I had low ability.

I prefer to avoid situations at school where I might perform poorly.

**Team Learning Behaviors**

Our E-board keeps doing things in pretty much the same way.

Our E-board frequently makes small improvements in the way the group operates.

Our E-board implements minor adjustments to work without thinking much about it.
Our E-board often tries out new things using a trial and error approach.
Our E-board speaks up to test assumptions about issues under discussion.
Our E-board creates hypothetical (what if) scenarios to achieve new insights.
Our E-board takes the time to figure out ways to improve our team’s work processes.
Our E-board consults another’s opinion about how to handle the situation when a non routine matter comes up in our work.
Our E-board, when errors occur, discusses how to prevent these errors in the future.
Our E-board reflects on past ways of doing things.
When we encounter new issues, our E-board discusses what these issues mean to our work.
Our E-board seeks ideas/expertise from people external to the team.
Our E-board reviews the team’s work with people external to the team.
Our E-board obtains help or advice from people external to the team.
Our E-board seeks feedback about the team’s work from people external to the team.
Our E-board experiments with new methods to see what works.
Our E-board is not afraid to do things differently than other groups.
Our E-board experiments with new ideas.
Our E-board experiments with new structures (for example, new officer positions, roles, or assignments).
Our E-board works together quite differently now than when we first started at the beginning of the school year.