Diversity, Cohesion, and Groupthink in Higher Education:

Group Characteristics and Groupthink Symptoms in Student Groups

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Kaija A. DiPillo

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Kaija A. DiPillo

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Approvals:

Dr. Rebecca M. Curnalia, Thesis Advisor Date

Dr. Shelley Blundell, Committee Member Date

Dr. Jay L. Gordon, Committee Member Date

Dr. Salvatore A. Sanders, Dean of Graduate Studies Date

ABSTRACT

Previous research has been conducted regarding group and demographic diversity, cognitive and group cohesion, and groupthink. However, all three concepts focused on have not been studied together. The purpose of the study was to investigate group characteristics and their possible effects on overall group cohesion and the presence of groupthink. The relationship between demographic and cognitive diversity on overall group cohesion and the relationship between demographic and cognitive diversity and the possible presence of groupthink in an academic group were explored. A quantitative survey of undergraduate student participants was used to collect and interpret data and results. Participants were asked to reflect on their most recent group experience in a college course within the last year. Research participants answered questions about their group characteristics, connection to the group, group cohesion, group participation, demographic diversity, cognitive diversity, and groupthink. Results concluded that cognitive diversity was a positive predictor of cohesion. Different ideas, beliefs, and unique skill sets resulted in a more cohesive group than similar race, gender, age, or socioeconomic class. Results also concluded that cognitive diversity was a negative predictor of groupthink. It can be assumed that a group with the same values, ideas, beliefs, and skills is less likely to have groupthink, than a group that thinks, believes, and solves problems similarly. Although diversity does affect both cohesion and groupthink, it is cognitive diversity, not demographic diversity, that has the greater effect on the overall group experience.

Keywords: group interaction, participation, creativity, cognitive diversity, demographic diversity, cohesion, groupthink

Literature Review

Introduction

In the workplace, decisions made collectively by employees are beneficial and create numerous rewards for an organization. Although employee participation can increase creativity and help with the innovation and implementation of ideas, it can also be a hindrance to the overall creative process. Wong, Chow, Lau, and Gong (2018) discuss the importance of group and team projects in higher education and the workplace. As a teaching assistant and graduate student myself, I have been a part of many groups and aided many students in the group process. Working in groups to accomplish an assignment has inspired my interest in groups, group diversity, and cohesion amongst group members.

Group Interactions

Participation and Creativity

Groups and team projects both play a key role in higher education and the workplace. According to the National Association of Colleges and Employers (2017) newly graduated college students looking to impress possible employers should emphasize their ability to problem solve and work as part of a team. Besides a high grade point average, employers cite problem-solving skills and working in a team as the most important attributes of future employees. In the workplace, decisions made collectively by employees are beneficial and create numerous rewards for organizations. Though not all individuals enjoy working with others in groups, group projects are a prominent part of higher education and the workplace and need to be studied so the overall group experience can be more successful for group members and organizations. Wang, Li, Wu, and Liu (2014) define team orientation as group members' willingness to be a part of a team and work in a group setting to accomplish a task. Individual team members with

high levels of team orientation are more likely to help others in the group, share information, and provide feedback. When team orientation is high, the team will be more cohesive and successful. Team orientation can influence all group outcomes, especially student groups. The willingness to be a part of a group, in my past group experiences, greatly affected the end product and group's overall grade. Although the willingness to work in a group plays a large role in the cohesiveness of the group, having a cohesive group can promote creativity and productivity amongst group members.

Wong et al. (2018) discuss participative decision making in relation to creativity. Participation and creativity can be promoted or obstructed by the organizational climate. Organizational climate is defined as the ideas and beliefs that influence interactions, attributes, and reactions in the workplace. The organizational climate shapes the minds of individual employees and teams of employees about the overall organization, what the organization thinks, and what the organization does. The organizational culture relates to employees and their willingness to share. An organization and its openness to the ideas and opinions of employees can increase the likelihood of employees sharing their opinions and ideas. Openness and willingness to share ideas, opinions, and feelings freely in teams builds trust and provides a sense of safety. Sharing within a group also aids in problem solving, data sharing, consideration of viewpoints, and understanding of others ideas while increasing overall individual and group creativity. This leads to better group outcomes, including realistic decision making and sound solutions.

Groups in higher education and the workplace are an important part of problem solving and task accomplishment. Wong et al. (2018) stated that the interpersonal relationships between group members can affect the overall success of the group. Wang

et al. (2014) define team member exchange (TMX) as the feedback, assistance, and idea sharing among team members. TMX increases overall group performance, creativity, and satisfaction with both co-workers and the job itself. TMX is positively related to team performance and cooperation of group members. However, little research has been done on TMX and group composition characteristics, such as individual personality, values, and orientations. TMX increases sharing of divergent ideas and beliefs. Wong et al. (2018) discuss the importance of employee participation. When employees actively participate with others and with management, creativity, implementation, and innovation are increased.

Although Wong et al. (2018) discuss the benefits of employee participation, employee participation can also be a hindrance to the creative process. Dijk. Meyer, and Engen (2018) explained the pros and cons of diverse groups and their effect on decision making and task accomplishment. With participation being an important part of the work force and higher education, it is important to understand how to properly and efficiently develop employee and student groups to make decisions and to accomplish tasks.

Group Diversity

Diversity and creativity. Dijk et al. (2018) described how diverse individuals and diverse teams have become more prominent as society has become more diverse and work has become more team-based. Diversity, according to Dijk et al. (2018), is any attribute one considers to be different from oneself. When studying team performance, diversity in age, gender, personality, background, and values can lead to both positive and negative outcomes affecting the overall group and task accomplishment. Team members' differences can aid in the distribution of tasks amongst group members.

Researchers discuss not only demographic diversity, but cognitive team diversity, as well. Cognitive diversity is the perceived differences in team members' knowledge skills, beliefs, values, and styles of thinking. Cognitively diverse groups are rich in knowledge, ideas, backgrounds, perspectives, and solutions, traits which improve creativity in the group, and lead to a more productive and successful group.

Perceived diversity and competence. Diverse group members bring unique knowledge, ideas, and expertise to a group. Although different members of a group bring different levels of knowledge and experience, their levels of competence may be perceived inaccurately by not only themselves but other members, as well (Dijk et al., 2018). If one's perception of his or her skills is inaccurate, team members could put their trust in a low-performing group member.

Dijk et al. (2018) argue that members of a group who are perceived as being more competent are depended on more by the overall group. The performance of the group can be affected when a member is incorrectly perceived as being more competent than other members. To test whether members perceived as being more competent had more power in the group than other members, researchers (Dijk et al., 2018) used a regression model. Perceived competence also affected team members' influence. The higher the perceived competence of a team member was, the more influential the member was within the group. After conducting an experiment, Dijk et al. (2018) also found that pro-diversity (groups that are made up of diverse members) groups performed better and were more pleasant than pro-similar groups. Whereas cognitive diversity is argued by researchers to lead to a more successful group experience, demographic diversity, such as gender, can also positively influence a group. (Dijk et al., 2018).

Demographic Diversity

According to Horwitz and Horwitz (2007), diversity in groups is a multi-faceted topic. Cognitive, task and demographic diversity have been studied together and separately. Demographic diversity is considered the innate characteristics each team member has that are easily recognizable in an initial meeting. Demographic diversity characteristics also lead to the quick categorization of members according to their unique traits, including gender, age, and race/ethnicity.

Work groups and student groups are becoming more diverse due to the increase in globalization, job market competition, and overall competition amongst companies in the workforce (Horwitz & Horwitz, 2007). Diverse groups consisting of different ages, genders, and ethnicities can improve the day-to-day operations of the company the group is working for and provide a competitive edge. Student groups can also benefit from group diversity. Different ideas, knowledge, and group member backgrounds can lead to advantages.

Horwitz and Horwitz (2007) discuss the "double-edged sword" that is group diversity. Although different perspectives and expertise can increase overall positivity in the group, diversity also can cause tension, conflict, and in-group fighting. Contrary to Horwitz & Horwitz (2007) initial hypothesis, there was no relationship found between team member diversity and overall team performance. Because the relationship between the two variables was nondirectional and had wide intervals, the results were inconclusive, indicating a need for further research.

Gender diversity was also found to lead to higher performance and more pleasant interactions (Dijk et al., 2018). Group diversity can affect numerous types of groups and teams.

Miles and Kivlighan (2010) discuss how diverse co-leading therapists can positively co-lead group interventions. Some research has expressed the benefits of having similar co-leaders, in that differences between co-leading therapists in terms of appearance and personality allow co-leaders to play off each other while providing clients with a plethora of different, useful roles. Two distinct co-leaders (male and female co-leaders) in therapy can benefit the client. Groups with dissimilar co-leaders scored higher on interpersonal functioning. Different therapists can be beneficial to the groups with a variety of skills and intervention tactics that complement each other. Groups led by dissimilar co-leaders were perceived by group members to have higher levels of engagement. Unfortunately, dissimilar co-leaders led to higher levels of conflict, as well. Although diversity can positively influence a group and overall group cohesion, diverse groups can also hinder the overall group process.

Negatives of Group Diversity

Dijk et al. (2018) conclude that negative consequences can arise from group diversity. Group members stereotype other members based on how similar and how different they are from themselves. Members are either in the "in-group" or the "out-group." Intergroup bias occurs when members of a group share information with other in-group members more frequently than with out-group members. This is where diversity can negatively impact a group and the overall group experience for team members.

Although individual ideas and knowledge sharing influences creativity, groups can split into sub-groups, based on in-groups formed around shared ideas and knowledge. According to social categorization theory, categorizing team members as in-group and out-group makes the group experience and group process more cooperative in a homogenous group compared to a heterogenous group, leading to high levels of productivity. Productivity is not only an imperative aspect of a student's higher education, but also an imperative part of the workplace. Managers and researchers want to learn how to properly manage diversity, lower the risks of conflict, and increase productivity and output. Hentschel, Shemla, Wegge, and Kearney (2013) look at not only the diversity of a group, but how diversity is perceived by team members, as well. Team members categorize themselves among those that they feel are similar or dissimilar. Group conflict occurs when team members engage in interpersonal conflict, caused by tension amongst team members. Conflict is the main risk for diverse groups, there by posing a direct negative effect on the overall group performance. Demographic diversity may bring different types of team members together but may not positively contribute to team effectiveness. Demographic diversity can create distrust and hostility in a group due to divergent vocabularies, abilities, and priorities. Therefore, the differences that are meant to influence the group positively may hurt the group and result in poor group performance. Demographically diverse teams can cause emotional conflict, depending on the categorization of team members according to demographic characteristics. When team members subconsciously group members as similar they see their subgroup as being superior, leading to resentment and hostile exchanges with others subgroups. The subconscious grouping (the internal self-grouping with those one identifies with) of

demographically different team members in subgroups can create emotional conflict and resentment. The emotional conflict due to stereotyping can create a hostile group environment between different in-groups; hurting the overall group (Chowdhury, 2005).

Lau and Murnighan (2005) found that although diverse groups lead to an improvement in group decision making and creativity while problem solving, group diversity has reduced group communication, interpersonal liking, and group commitment. In groups, it is possible for multiple diverse subgroups to emerge based on demographics. This can cause a strong "faultline," a split in the main group based on the demographic attributes of team members. A faultline can cause conflict for the group. Although demographic differences can cause a faultline in a group, ideological differences can also cause a split between group members. The faultline model states that when a group is split into subgroups, team members identify more with their subgroup than their overall group. Groups with strong faultlines assume the values, ideas, and norms of the members in their subgroup. Whereas strong faultlines can cause in-group conflict. The lack of a faultline can lead to more focus on the entire group and the assumption that the overall group is similar. Members of a group tend to favor those with whom they identify. If a team member identifies best with their subgroup, they can lack connection with the overall group. But if they identify with the overall group, they should be more productive. On the other hand, Chowdhury (2005) argues that group diversity is not as important as commitment to the team, cognitive comprehensiveness, and the understanding of the task. Chowdhury (2005) discusses entrepreneurial groups. An entrepreneurial group is defined as two or more people participating in a current business, or launching a new business. Looking at an entrepreneurial group provides different

insight into group performance and group projects. Problem-solving groups, like entrepreneur groups, are made up of team members working together to accomplish a specific task successfully. Creativity and innovation are imperative for the success of a group project, no matter the type of group. Creativity and innovation stemming from demographic diversity, such as age, gender, and ethnicity, can positively affect entrepreneurial groups. Heterogeneous groups can experience conflict and heightened emotions leading to poor group performance. While Lau and Murnighan (2005) suggest that heterogeneous groups bring together team members from different backgrounds with unique ideas, and perspectives, others, like Chowdhury (2005) and Dijk et al. (2018) conclude that homogeneous groups have higher group satisfaction and better outcomes in terms of communication and conflict. Demographic diversity may not be as important specifically for entrepreneurial groups as team commitment and cognitive comprehensiveness.

Chowdhury (2005) states that moderate levels of heterogeneity, as opposed to high and low levels of heterogeneity, lead to poor group performance. Groups are said to learn the most when strong subgroups and members with similar backgrounds were present. Groups with moderate levels of homogeneity, but not apparent subgroups, learned less, as did groups with extremely strong subgroups present (Chowdhury, 2005).

Lau and Murnighan (2005) conclude that faultlines affected team members during the evaluation of their subgroup members. Members of a strong faultline group were more positive in their evaluation of same-sex members compared to those in weak faultline groups. A faultline was also found to have an effect on relationship conflict, safety, and group satisfaction. Members of strong faultline groups experienced less group

conflict, felt safer, and had more group satisfaction, contrary to researchers' original prediction.

Chowdhury (2005) finds that demographic diversity does not influence overall team effectiveness. In terms of cognitive comprehensiveness and team member commitment, these variables positively influenced overall team effectiveness. Demographic diversity did not contribute to overall team effectiveness and team commitment with a group. Overall group cohesion and group success was the most important part of a group and its assigned task.

Group Cohesion

In order for a group to be successful and accomplish the required task, that group must have cohesion. According to Senecal, Loughhead, and Bloom (2008) cohesion is defined as a process that reflects how teams stick together, remain united in the pursuit of the overarching goal, and the satisfaction of team members' needs. Cohesion enhances performance and team success. Chin, Salisbury, Pearson, and Stollak (1999) found it vital to create a work-team measure that focuses on group cohesion. When morale decreases, the task is not as easily or successfully achieved. An individual's perception about a group will not only affect the morale - it will also affect the outcome of the assigned project. Though cohesiveness is an asset to groups working together to accomplish a task, an extremely cohesive group can be detrimental when making a decision.

Groupthink. Too much cohesion can lead to groupthink. After the devastating events surrounding the space shuttle Challenger explosion on the morning of January 28, 1986, Irving Janis was fascinated with the psychology around "imprudent" group decisions. Janis, a social psychologist, originally defined groupthink as "a mode of thinking that

people engage in when they are deeply involved in a cohesive in-group, when the members' strivings for unanimity override their motivation to realistically appraise alternative courses of action" (1991, p. 237). According to Janis (1991), groupthink only occurs when group cohesion is high. Members in the decision-making group are said to have strong in-group feelings and put the importance of cohesive relationships over successful decision making. Although researchers and students of group processes see cohesiveness among team members as an asset, Janis (1991) insists that too much cohesiveness can hurt the overall critical thinking among members, consequently hurting the group.

Though Janis (1991) did believe that cohesive groups are more likely to partake in groupthink, he did not think that all cohesive groups lead to groupthink. Thus, not all bad decisions are the result of groupthink. Cohesion is an important part of the group process, but it is not a necessary contributing factor to group success.

There are eight main symptoms of groupthink grouped within three types according to Janis (1991). They include:

- Type One: overestimation of the group illusion of invulnerability (the thought that everything is going to work out because this group is "special") and belief in the inherent morality of the group (members assume the "rightness of their cause").
- Type Two: collective rationalization (Janis defines this as "hear no evil, see no evil, speak no evil") and stereotypes of out-groups (to look down on those with opposing opinions).

- Type Three: self-censorship (failing to be straightforward, instead being ambiguous), illusion of unanimity (assuming everyone feels the same way and has the same opinion), direct pressure on dissenters (pressure to agree and fear of backlash when one disagrees), and self-appointed mind guards (to protect someone in charge often when not even asked).

Decision making, especially in a group, creates stress for team members. Callaway and Esser (1984) state that the presence of stress during decision making makes members more likely to strive for cohesion and social approval within the group. Cohesion seeking is more likely to occur than decision making, therefore leading to groupthink. Members wish to keep peace, are overly optimistic, lack critical thinking, need to maintain self-esteem, and have negative feelings towards members of the 'out-group'. These sentiments work together to promote groupthink.

Callaway and Esser (1984) conducted an experimental study. Participants were assigned to experimental condition groups and other randomly selected, non-experimental groupings. After the experiment concluded, a post-survey was administered to all participants. Results indicated an "approaching significant" relationship between cohesiveness and decision quality, and symptoms of groupthink. Janis (1991) states, in the original groupthink research, that groups suffering from groupthink make low-level decisions because the group adopts the first agreed upon, adequate solution. Groups suffering from groupthink fail to weigh other options and solutions. Researchers found that the groupthink condition group produced the fewest statements of disagreement, indicating the group decided without weighing alternatives.

Derivation of Hypotheses

Previous research provided conflicting conclusions regarding diversity amongst group members. One issue with group diversity includes the subconscious categorization of member's into subgroups; an "in-group" and an "out-group." In-groups emerge when team members sharing knowledge, ideas, and backgrounds form a separate subgroup. Subgroup bias occurs when members of the group share information more frequently with those in their "in-group," negatively impacting the whole group and the overall group experience. Researchers concluded that too much diversity in a group can lead group members to separate into groups that the group members feel are similar to themselves (Dijk et al., 2018).

Opposing research has concluded that diversity amongst group members increases group knowledge sharing and creativity and decreases the risk of groupthink (Wong et al., 2018). Sharing different ideas and knowledge in a group builds trust and also aids in problem solving, data sharing, consideration of viewpoints, and resonance of others' ideas while increasing overall individual and group creativity.

Cohesion is an important part of the group. Senecal et al. (2008) explains that cohesion enhances performance and team success. Although cohesion is the intended outcome of the overall group experience, cohesion affects the decision making of group members. According to Janis (1991), groupthink is present when cohesion is high. Groupthink occurs when group members make a decision, have strong in-group feelings, and overall group cohesion affects decision making.

As a teaching assistant and a graduate student myself, I am interested to see the effects cognitive and demographic diversity may have on overall group cohesion and the effect diversity may have on the presence of groupthink in academic groups.

H1: Group diversity will positively influence overall group cohesion in an academic group.

H2: High levels of group diversity will be correlated with fewer symptoms of groupthink.

Methods

Sample

Participant characteristics. Research participants were a convenience sample of university students that "were in the past academic year or currently are a part of a group project in higher education." A convenience sample, according to Wecht (2017), is a sample made up of participants who are easy for the researcher to contact. Not all participants completed the survey all the way through, therefore the sample size ranges from (N = 241) and (N = 260). Responses were received from 152 females (54.7%) and 89 males (32%). Most participants indicated they were white (75.9%), followed by African American (5.4%), Asian (2.2%), and (2.2%) multiple ethnicities. The primary age of research participants was between the ages of 18-20 years old (77.4%), followed by (18.1%) 21-29 years old, and (3.3%) 30-39 years old. The relationship status of participants varied. Responses indicated that most (65.1%) participants were single and never married, few were single but cohabitated with a partner (12.6%), 4.3% were in a domestic partnership or civil union, 3.2% were married, and 1.8% were divorced. Participants indicated that their combined household income was primarily under $20,000 (19.5%) followed by $50,000-$74,999 (16.8%), $75,000-$99,999 (14.5%), and

14.1% answered $100,000-$149,999. Most research participants, according to their completed credit hours, were freshmen in college (46.5%) sophomores in college (30.1%), juniors in college (13.6%), seniors in college (7.4%), and few were graduate students (2.5%).

Group characteristics. Descriptive statistics were used to analyze each participant's unique group characteristics. Research participants, while a part of a group project, participated in different types of group projects: 42.1% of participants reported they were a part of a group that was assigned to complete a task or activity, 23.7% of participants were a part of a group discussion of specific topics, 12.6% generated ideas, 9.0% reviewed topics and/or studied them, and 6.1% were in a problem-solving group. Group members communicated primarily through text message (42.8%) and face-to-face meetings (34.5%), followed by email (7.2%), a group app (4.0%), and an online discussion board (1.8%). The members in each group varied: 41.4% of participants indicated that their group included 4-5 members, followed by groups with 2-3 members (38.1%), groups with 5-6 members (10.8%), and groups with 7 or more members in the group (3.2%). Research participants indicated that their groups met at many different times as a whole: 27.7% of participants met once a week, 23.0% met multiple times a week, 15.1% met once, 12.2% met a few times during the semester, 7.9% never met, and 7.6% met a few times a month. After the completion of the research participants' group project, the majority of participants indicated that they received the letter grade of an A.

Procedure

An online survey created using Survey Monkey was distributed to participants with scale measures of group characteristics, group participation, demographic diversity,

cognitive diversity, perception of connection, group cohesion, groupthink, and demographics. The survey link was distributed through Facebook and email. The survey link was emailed to colleagues to send to their students for extra credit or for credit for required research participation. A consent form was required before research participants could begin the research study. A 5-point Likert scale was used to measure group participation, perceived connection, group cohesion, and groupthink. Multiple choice questions were used to measure group characteristics and participants demographics. Demographic diversity was collected via yes/no questions.

Instrumentation

A 5-point Likert scale was used to measure the three main variables measured in the study: group diversity, groupthink, and cohesion. Likert response options ranged from 'Strongly Agree (5) to 'Strongly Disagree' (1) and had a neutral point, 'Undecided' (3). All scales used can be found in Appendixes A-I. Scales were a combination or previously used scales and self-generated scales. Multiple choice measures were used to measure the unique demographic characteristics of all participants. Group characteristics were measured using multiple choice questions to gain knowledge about participants' specific group experience.

Group characteristics. Participants were asked to answer all questions based on a past group they were a part of in the last academic year. Multiple choice questions were used to gather information about the research participants' groups being reflected upon. The group characteristic scale was self-generated and included items inquiring about number of members in the group, the number of times the group met, the group's main source of communication, and the type of group the research participants were a part of.

Group participation. Group participation was measured using a 5-point Likert scale. The group participation scale was self-generated based on previous research (Anderson, Beer, Chatman, Srivastava & Spataro, 2006). The group participation scale inquired about group members' dedication, efforts to get along, ability to get in contact with group members, and the value to the overall group. The group participation scale had strong reliability (α = .85, M = 3.8, SD = .94).

Perception of connection. Perception of connection with a group was measured using a 5-point Likert scale. The perception of connection scale is an existing scale that was renamed and edited slightly for the purpose of this study. Previous researchers developed a six-item scale measuring small group cohesion (Chin et al., 1999). The perception of connection scale included items regarding satisfaction of the group, the satisfaction with the final grade, the contentment with the group, and the feeling of belonging in the group. The scale had strong reliability (α = .91, M = 3.9, SD = .82).

Group cohesion. Group cohesion was measured using a 5-point Likert scale. The scale includes three items regarding shared interest, cohesion levels, and shared values. The group cohesion scale is an existing scale from previous research (Baptist, 2015). The previously developed and tested scale resulted in strong reliability (α = .87, M = 3.7, SD = .93).

Groupthink. A previously developed and tested scale was used to measure groupthink. The 15-item scale based on previous research (Baptist, 2015) is a 5-point Likert scale. Items asked about participants expressing disagreement, expressing opinions, comfort levels disagreeing and asking questions, decisions made in the group,

and overall expression of different ideas in the group. The groupthink scale resulted in high reliability (α = .92, M = 2.3, SD = .72).

Cognitive diversity. The cognitive diversity scale is a previously developed scale based on previous research (Miller, Burke, & Glick, 1998). The 4-item scale asks participants about their group members' agreement on the overall objectives of their group, the best way to ensure the group's success, the main goal of the group, and the group's agreement on the best way to maximize success. A 5-point Likert scale was used to measure all responses. The cognitive diversity scale resulted in high reliability (α = .88, M = 4.2, SD = .68).

Demographic diversity. The demographic diversity scale is based on a scale created in previous research (Horwitz & Horwitz, 2007). Descriptive statistics were ran for the demographic diversity scale (M=3.4, SD=1.22). The five-item scale asked participants about the presence of diversity in their group being reflected upon including, gender, ethnicity, age, major, and socioeconomic class. Response options were either 'yes' coded or 'no'coded.

Results

H1: Group Diversity and Cohesion

A regression analysis was used to examine predictive relationships between the independent variables (demographic diversity and cognitive diversity) and the dependent variables, overall group cohesion (perception of connection and group cohesion.) Demographic and cognitive diversity explained 39% of variance towards perception of connection (R^2 = .39, F = 77.8, p = .00). Demographic diversity and cognitive diversity also explained 35% of variance towards group cohesion (R^2 = .35, F = 65.2, p = .00). H1 was partially supported. Though demographic diversity was not a predictor of both

perception of connection ($\boldsymbol{\beta}$ = -0.4, p =.49) or group cohesion ($\boldsymbol{\beta}$ = .05, p =.39), cognitive diversity was a predictor of perception of connection ($\boldsymbol{\beta}$ = .63, p =.00), and group cohesion ($\boldsymbol{\beta}$ = .59, p =.00). It can be concluded that members of a group will not feel as connected, or as "part of" a group, simply because other members are the same race, gender, or age. The presence of cognitive diversity (unique skills, intellectual backgrounds, and opinions regarding the best way to maximize success, the main goals of the group, the main objective of the group, and the best way to succeed) led to high levels of overall group cohesion.

H2: Group Diversity and Groupthink

H2 was partially supported. A regression analysis was used to examine the predictive relationship between independent variables (demographic diversity and cognitive diversity) and the dependent variable, groupthink. Demographic and cognitive diversity explained 24% of variance toward groupthink (R^2 = .24, F = 36.03, p = .00).

The regression analysis showed that though demographic diversity was not a predictor of groupthink ($\boldsymbol{\beta}$ = .07, p = .26) and cognitive diversity was a negative predictor ($\boldsymbol{\beta}$ = -.48, p = .00) of groupthink. Cognitive diversity predicts decreased groupthink in students' groups. The more members think, act, and make decisions similarly, the greater the presence of groupthink symptoms.

Stepwise Regression

A stepwise regression analysis was used to examine predictive relationships between variables. The first stepwise regression analysis categorized group participation, perception of connection, group cohesion, demographic diversity and cognitive diversity

as independent variables, and groupthink as the dependent variable (R^2= .27 F = 16.1, p = .00).

In the final step, perception of connection ($\boldsymbol{\beta}$ = -.21, p =.05) remained a significant predictor of groupthink. Group cohesion ($\boldsymbol{\beta}$ = .26, p =.01) was a significant positive predictor and cognitive diversity ($\boldsymbol{\beta}$ = -.47, p =.00) was a significant negative predictor of groupthink. Regression analysis results suggest that high levels of group cohesion can result in the presence of groupthink in a group. With cognitive diversity being a significant predictor of groupthink, H2 is further answered and reinforces the idea that the less cognitive diversity present in a group the more groupthink will be present.

The second stepwise regression analysis included independent variables group participation, perception of connection, group cohesion, cognitive diversity, and demographic diversity and the dependent variable, group final grade (the reported final grade of the group project participants reflected upon), (R^2= .08, F = 3.9, p = .002). In the final step, perception of connection ($\boldsymbol{\beta}$ = -.24, p =.03) and demographic diversity ($\boldsymbol{\beta}$ = .13, p =.05) were predictors of group final grade. Regression analysis results show that the less one feels they are connected to the group and other group members, the more it will affect the group's final grade. The less connected one feels to a group; the possibility of the group getting along, thinking similarly, and agreeing often is less likely, which could affect group's final grade. Demographic diversity includes age, ethnicity, gender, major, and socioeconomic class. It can be assumed that having different types of group members with different backgrounds can have an effect on the group's final grade. final grade.

The third stepwise regression analysis kept group final grade as the only dependent variable and included groupthink, perception of connection, group cohesion, cognitive diversity and demographic diversity as the independent variables (R^2 = .096, F = 5.8, p = .00). In step one, groupthink was a significant predictor of group final grade ($\boldsymbol{\beta}$ = .28, p =.00). In step two, both groupthink ($\boldsymbol{\beta}$ = .22, p =.00) and perception of connection ($\boldsymbol{\beta}$ = -.20, p =.08) were predictors of group final grade. In step three, groupthink was the only predictor (positive) of group final grade ($\boldsymbol{\beta}$ = .20, p =.01). Throughout the 3-step regression analysis, groupthink was the only independent variable that remained significant. The idea that groupthink can lead to a higher grade is an interesting and somewhat scary finding. As a teaching assistant and a student, I can see how members of a group will go along and not interject their own ideas, beliefs, and hesitations with group members to simply complete the project and get a passing grade.

Discussion

After completing this study, I think the greatest takeaway from the results found is that as educators we are rewarding groups with too much cohesion high letter grades. Doing this, is encouraging student groups that as long as a high letter grade is received, too much cohesion and a lack of critical thinking amongst all members is acceptable. Therefore, institutionalizing groupthink. In the future, I intend to stress critical thinking, brainstorming, and unique opinions in my student groups. The findings of this study also make it apparent that groups with strong cognitive diversity must be focused on rather than groups with strong demographic diversity. In the future students need to understand and learn how to interact with those whom they disagree with, while remaining themselves and standing firm in their beliefs, values and ideas.

Working in a group is an inevitable occurrence most will face in both higher education and in the workplace. Groups in the workplace offer numerous rewards and are extremely beneficial to an employer. Employee participation encourages creativity and provides innovation. In higher education, most students at one point will be a part of a group project. Student groups encourage creativity, innovation, and teach the skills necessary to work with other people who are similar and different from oneself (Wong et al., 2018). Though Wong et al. (2018) discuss the numerous benefits of working in a group, researchers also discuss the hindrances that can occur during group work. Although the successful completion of the assigned project is the most important aspect of the group project, Chin et al. (1999) argue that cohesion, including team morale, satisfaction, and feeling of belonging is vital to the group experience and overall group success. Cohesion is an asset to the group experience, but too much cohesion can be detrimental to a group and the group's decision making. Janis (1991) concludes that too much cohesion can lead to groupthink. Although Janis states that not all cohesive groups lead to groupthink, cohesive groups are much more likely to experience groupthink, and this often leads to bad decision making.

Both hypotheses were partially supported. Demographic diversity was not a predictor of perception of connection or group cohesion, cognitive diversity was a positive predictor of perception of connection, and group cohesion. A group of solely women, men, Caucasians, African Americans, or members of low socioeconomic statuses is not a guaranteed cohesive group. Cognitive diversity ultimately led to the overall success and cohesiveness of a group. In order for a group to be cohesive and for members

to feel like ‘a part’ of the group, it is more important that cognitive diversity be present than demographic diversity.

H2 hypothesized that high levels of group diversity will decrease the likelihood of groupthink in an academic group. Although diversity in a group had an effect on overall group cohesion, when broken down, demographic diversity was not a significant predictor and cognitive diversity was a negative predictor. The more similar members of a group are and the less cognitive diversity amongst members, the more likely it is that groupthink will take place. Having different educational backgrounds, values, and unique skills is related to members’ interjecting or disagreeing with other members. As a student in higher education and a teaching assistant that assigns a required group project each semester, I understand the positives and negatives of group projects. Being a student, I have multiple horror stories about group projects and past group experiences. Besides the negative group experiences, I have had positive group experiences that taught me genuine life lessons and helped to me achieve a goal I could not have done on my own.

Previous research concluded that the more willing a person is to be a part of a group, work with others, and complete the task, the better the final assignment and the higher the letter grade would be (Wang et al., 2014). After running a stepwise regression with groupthink as the independent variable and group final grade as the dependent variable, results showed that groupthink remained the only significant predictor through all three steps ($\boldsymbol{\beta}$ = .20, p =.01). Results concluded that groupthink does have an effect on final grade. Many students and employees can attest to the idea that it was easier to keep the peace and get the project done by going along with the majority than it was to interject, disagree, and question the decisions of the majority or group leader. As a

teaching assistant, the validation that students essentially "go along to get along" and get a good grade is a testament to the majority of students' distaste for group projects. These findings offer new insight and validation to the group experience and solidify that group projects in higher education need to be changed.

Limitations

Diversity, cohesion, and groupthink are commonly researched variables in communication, social science, and higher education research. Because the variables studied are common and something many participants can easily reflect on, it was not difficult to find willing participants. The sample size itself was acceptable, but most of the research participants who made up the sample were from an urban research institution. Results may vary if the survey was given to students at different institutions with participants from different parts of the country. Though the majority of participants were from the same urban research institution, the institution itself is diverse, with a student body from different states and countries, different socioeconomic classes, and different majors.

Future Research

Past research used different research methods to study similar variables such as groupthink and diversity. To measure groupthink, researchers conducted experimental studies with post-surveys (Callaway & Esser, 1984). Groupthink is a key factor when studying groups in both higher education and the workplace. Experimental research methods do not always accurately represent genuine participant experiences. In the future, researchers can use different research methods, such as longitudinal survey methods over the course of a group project, to gauge cohesion, groupthink, and the

possible effect of diversity on the overall group experience. Reliable survey methods measuring groupthink also need to be developed to more accurately identify and measure groupthink in a group. This measure could be used to help identify the presence of groupthink and deal with it accordingly. The more known about the genuine group experience for both students and employees, the better strategies and methods that can establish. Better strategies and methods aimed to aid the group experience will produce a more successful final product for both educators and employers.

Conclusion

Group work is an inevitable part of higher education and the workforce. Though many people may not like working in groups, most will eventually be a part of one. Previous research has been done regarding both cognitive and demographic diversity, cohesion, and groupthink. However, this study uniquely studied these variables in regards to each other, specifically in student groups. The quantitative survey method used for this research concluded that although demographic diversity was not a predictor of cohesion, cognitive diversity was. Forming a group of members with different skills, values, and beliefs can positively influence the group as a whole.

Though diversity was hypothesized to positively influence overall group cohesion, only cognitive diversity, rather than demographic diversity, was found be a significant predictor. Cohesion in groups can be both positive and negative. A cohesive group can lead to higher levels of group success, but can also increase the presence of groupthink. Results concluded that cognitive diversity was a significant negative predictor of groupthink. The more similar a group is, the higher the chance that groupthink will be present.

Because students and employees will be a part of a group at one point in their life and will be assigned to accomplish a task, it is imperative that researchers, educators, and employers better understand the way a group works, how to properly form a group, and how the group can best be equipped to accomplish the assigned task.

References

Anderson, C., Beer, J., Chatman, J., Srivastava, S., & Spataro, S. (2006). Knowing your place: Self Perceptions of status in face-to-face groups. *Journal of Personality and Social Psychology*, 91, 1195-1108.

Baptist, W., R. (2015). Measuring predictors of groupthink: Instrument development and validation. *Theses and Dissertations,* 339, 1-118.

Callaway, R. M., & Esser, K. J. (1984). Groupthink: effects of cohesiveness and problem-solving procedures on group decision making. *Social Behavior and Personality,* 12, p. 157-164.

Chin, W. W., D. WM., Salisbury, Pearson, W. A., & Stollak, J. M. (1999). Perceived cohesion in small groups adapting and testing the perceived cohesion scale in a small group. *Small Group Research,* 30, 751-766.

Chowdhury, S. (2005). Demographic diversity for building an effective entrepreneurial team: Is it important? *Journal of Business Venturing,* 20, p. 727-746.

Dijk, V. H., Meyer, B., & Engen, V., M. (2018). If it doesn't help, it doesn't hurt? Information elaboration harms the performance of gender-diverse teams when attributions of competence are inaccurate. *PLOS ONE,* 13, p. 1-23.

Hentschel, T., Shemla, M., Wegge, J., & Keatney, E. (2013). Perceived diversity and team functioning: The role of diversity beliefs and affect. *Small Group Research ,* 44, p. 33-61.

Horwitz, K. S., & Horwitz, B. I. (2007). The effects of team diversity on team outcomes: A meta analytic review of team demography, *Journal of Management,* 33, p. 987-1015.

Janis, I. (1991). Groupthink. In E. Griffen (Ed.) *A First Look at Communication Theory* (p.235-246). New York: McGraw Hill.

Lau, C. D., & Murnighan, J. K. (2005). Interactions within groups and subgroups: the effects of demographic faultlines. *Academy of Management Journal,* 48, p. 645-659.

McCauley, C. (1989). The nature of social influence in groupthink: Compliance and internalization. *Journal of Personality and Social Psychology,* 57, p. 250-260.

Miles, R. J., & Kivlighan, M. D. (2010). Co-leader similarity and group climate in group interventions: Testing the co-leadership team cognition-team diversity model. *Group Dynamics, theory, Research, and Practice,* 14, p. 114-122.

Miller, C. C., Burke, M. L., & Glick, H. W. (1998). Cognitive diversity among upper-echelon executives: Implications for strategic decision processes. *Strategic Management Journal,*19, 29-58.

National Association of Colleges and Employers. (2017). The key attribute employers seek on students resumes. *National Association of Colleges and Employers*: Bethlehem, PA.

Senecal, J., Loughead, M., T., & Bloom, A. G. (2008). A season-long team building intervention: Examining the effect of team goal setting on cohesion. *Journal of Sport & Exercise Psychology,* 30, p. 186-199.

Wong, Y., Y., Chow, I., H. S., Lau, V. P., & Gong, Y. (2018). Benefits of team participative decision making and its potential to affect individual creativity, *Journal of Applied Social Psychology,* 48, p. 369-376.

Wang, Z., Li, C., Wu, J., & Liu, L. (2014). The mediating effect of cooperative goals on the relationship between team orientation and team member exchange, *Social Behavior and Personality,* 42, 685-694.

Wecht, C. (2017). Sampling. *Applied Methods.* Retrieved by https://app.tophat.com/e/845340/assigned

Appendix A

IRB Approval Email

Dear Investigators,

Your protocol entitled Group Diversity and Cohesion has been reviewed and it meets the criteria of an exempt protocol, category #2. You will be surveying adult students who will provide you with no identifying information. You will use passive consent. The students can give you their information at the end of the survey--through a special link--so that they can get extra credit.

The research project meets the expectations of 45 CFR 46.101(b)(2) and is therefore approved. You may begin the investigation immediately. Please note that it is the responsibility of the principal investigator to report immediately to the YSU IRB any deviations from the protocol and/or any adverse events that occur. Please reference your protocol number 129-19 in all correspondence about the research associated with this protocol.

Best wishes for the successful completion of your research.

Karen

Karen H. Larwin, Ph.D.

Appendix B

Group Characteristics (self-generated)

Answer each question based on the specific past group in a college course being reflected upon.

How many members were in the group?

2-3

4-5

5-6

7 or more

How often did you meet as a group?

Multiple times a week

Once a week

A few times a month

A few times during the semester

Once

Never

What was your main source of communication within the group?

Face to face meetings

Texting

Emailing

Online Discussion Board

Group App

Other (specify)

Indicate the type of group you were a part of.

Complete a task or activity

Solve a problem

Generate ideas

Discussion of specific topics

Review topics/study

Appendix C

Group Participation Scale (Anderson et al., 2006)

Answer each question based on the specific past group experience being reflected upon. Indicate ‘Strong Agree’ (5), ‘Agree’ (4), ‘Undecided’ (3), ‘Disagree’ (2), or ‘Strongly’ ‘Disagree’ (1).

Everyone contributed to the success of the group

All group members were equally dedicated

Each member made an effort to get along with each other

All members of the group were easy to reach throughout the project

All members brought value to the group

I was satisfied with the outcome of the final project

I was satisfied with the group’s final grade

Appendix D

Demographic Diversity Scale (Horwitz & Horwitz, 2007)

Reflect on your most recent project for a college course. Answer 'Yes' or 'No'

There were both males and females in my group.

There were group members of different ethnicities in my group.

There were group members of different socioeconomic status in my group.

My group was composed of group members ranging in age.

Different majors were represented in my group.

Appendix E

Perception of Connection (Chin, Salisbury, Pearson, & Stollack, 1999)

Answer each question based on the specific past group experience being reflected upon. Indicate ‘Strong Agree’ (5), ‘Agree’ (4), ‘Undecided’ (3), ‘Disagree’ (2), or ‘Strongly’ ‘Disagree’ (1).

I felt that I belonged in this group.

I am happy to be a part of this group.

I saw myself as a part of this group.

This group is one of the best groups I’ve been a part of.

I feel that I belonged in this group.

I am content to be part of this group.

Appendix F

Group Cohesion (Baptist, 2015)

Answer each question based on the specific past group experience being reflected upon.

Indicate ‘Strong Agree’ (5), ‘Agree’ (4), ‘Undecided’ (3), ‘Disagree’ (2), or ‘Strongly’ ‘Disagree’ (1).

Our group communicated a high degree of shared interest.

I would consider our group to be highly cohesive.

Members of the group indicated they shared many of the same values

Appendix G

Groupthink Scale Measure (Baptist, 2015)

Answer each question based on the specific past group experience being reflected upon. Indicate ‘Strong Agree’ (5), ‘Agree’ (4), ‘Undecided’ (3), ‘Disagree’ (2), or ‘Strongly’ ‘Disagree’ (1).

I often failed to express disagreement with what someone else said.

I had doubts about the group’s decision, but did not say anything.

I often kept my opinions to myself.

I often agreed openly with the group’s decision, even if I disagreed privately.

I felt a pressure to agree with the group’s opinions.

I felt free to express any concerns I had with ideas that were proposed.

I felt comfortable asking questions about a solution.

I felt pressure from the group to not “rock the boat.”

The group pressured members to agree with each other.

Members of the group acted as mind guards, protecting the group leader or preferred group decision from others.

As a group, we failed to fully acknowledge the opinions of those with a particular expertise in a given area.

Some group members prevented others from expressing opposing points of view.

I felt pressure to just go along with the group’s preferred decision.

When I spoke up about any doubts I had, my fellow group members seriously listened to me.

The group encouraged members to express reservations they had about the group decision.

Appendix H

Cognitive Diversity Scale (Miller et al., 1998).

Answer each question based on the specific past group experience being reflected upon. Indicate ‘Strong Agree’ (5), ‘Agree’ (4), ‘Undecided’ (3), ‘Disagree’ (2), or ‘Strongly’ ‘Disagree’ (1).

Members of the group agreed with each other about the best way to maximize the success of the group.

Members of the group agreed with each other about the main goal of the group.

Members of the group agreed with each other about the best way to ensure the success of the project.

Members of the group agreed with each other about the most important objective of the group.

Appendix I

Demographic Measure (Survey Monkey)

Please answer the following basic demographic questions. Responses will remain anonymous.

What is your gender?

Female

Male

Transgender

Other

Are you White, Black or African-American, American Indian or Alaskan Native, Asian, Native Hawaiian or other Pacific islander, or some other race?

White

Black or African-American

American Indian or Alaskan Native Asian

Native Hawaiian or other Pacific Islander From multiple races

Some other race (specify)

What is your age?

17 or younger

18-20

21-29

30-39

40-49

50-59

60 or older

How much total combined money did all members of your HOUSEHOLD earn in 2011? This includes money from jobs; net income from business, farm, or rent; pensions; dividends; interest; social security payments; and any other money income received by members of your HOUSEHOLD that are EIGHTEEN (18) years of age or older. Please report the total amount of money earned - do not subtract the amount you paid in taxes or any deductions listed on your tax return.

Less than $20,000

$20,000 to $34,999

$35,000 to $49,999

$50,000 to $74,999

$75,000 to $99,999

$100,000 to $149,999

$150,000 or More

Which of the following best describes your current relationship status?

Married

Widowed

Divorced

Separated

In a domestic partnership or civil union Single, but cohabiting with a significant other

Single, never married

According to your current completed credits, select your level in college.

Freshman

Sophomore

Junior

Senior

Graduate School

After the completion of your group project, what was your group's final grade?

A

B

C

D

F