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Social Loafing and Free Riding in Online Learning Groups

Sherry L. Piezon
SOCIAL LOAFING AND FREE RIDING IN ONLINE LEARNING GROUPS

By

SHERRY L. PIEZON

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The members of the Committee approve the dissertation of Sherry L. Piezon defended on March 30, 2011.

Gary Burnett  
Professor Directing Dissertation

Allan Jeong  
University Representative

Ian Douglas  
Committee Member

Paul Marty  
Committee Member

Approved:

Corinne Jörgensen, Director, School of Library and Information Studies

Lawrence C. Dennis, Dean, School of Library and Information Studies

The Graduate School has verified and approved the above named committee members.
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TABLE OF CONTENTS

List of Tables ........................................................................................................................................ viii
ABSTRACT ............................................................................................................................................... IX
CHAPTER 1: INTRODUCTION .................................................................................................................. 1
  PROBLEM STATEMENT ......................................................................................................................... 1
  IMPORTANCE OF RESEARCH ............................................................................................................. 2
  SOCIAL LOAFING: THEORY ANALYSIS AND FUTURE EXPECTATIONS ............................................. 3
    What Contexts Remain to be Explored? ............................................................................................ 3
  RESEARCH GOALS AND OBJECTIVES .............................................................................................. 5
CHAPTER 2: LITERATURE REVIEW ......................................................................................................... 7
  INTRODUCTION TO SOCIAL LOAFING ............................................................................................... 7
  HISTORICAL BACKGROUND .............................................................................................................. 8
    Ringelmann’s Theory .......................................................................................................................... 8
  SOCIAL LOAFING PROPOSITIONS ........................................................................................................ 10
    First Things First ............................................................................................................................... 10
  SOCIAL LOAFING ANTECEDENTS AND THEIR PROPOSITIONS ..................................................... 11
    Procedural and distributive justice ................................................................................................. 12
    Task interdependence ..................................................................................................................... 13
    Group size ....................................................................................................................................... 13
    Group cohesiveness ......................................................................................................................... 15
    Task visibility ................................................................................................................................... 15
  INDIVIDUAL PERCEPTIONS .................................................................................................................. 16
    Learner Perceptions and Social Behaviors ....................................................................................... 16
      Dominance and aggression ............................................................................................................ 17
  SOCIAL FACILITATION THEORY ....................................................................................................... 18
  RESEARCH BETWEEN 1900 AND 1910 ............................................................................................ 19
  RESEARCH BETWEEN 1920 AND 1940 ............................................................................................ 19
  RESEARCH POST 1960 ......................................................................................................................... 21
    Drive theory ..................................................................................................................................... 22
    Mere presence .................................................................................................................................. 22
    Evaluation apprehension ................................................................................................................ 23
    Monitoring ........................................................................................................................................ 23
    Distraction ........................................................................................................................................ 24
    Self-Theories .................................................................................................................................... 24
      Self-attention ................................................................................................................................... 24
      Self-efficacy ..................................................................................................................................... 25
  Diffusion of Social Facilitation Theories ............................................................................................ 25
  RELATED RESEARCH OUTSIDE THE SOCIAL SCIENCES .............................................................. 25
    Library and Information Studies ...................................................................................................... 26
      Human information behavior ......................................................................................................... 26
    Online Learning, CMC, and Humanities Research .......................................................................... 30
    Game Theory .................................................................................................................................... 32
## CHAPTER 3: METHODOLOGY

<table>
<thead>
<tr>
<th>RESEARCH QUESTIONS</th>
<th>34</th>
</tr>
</thead>
<tbody>
<tr>
<td>OVERVIEW OF PAST RESEARCH METHODS</td>
<td>36</td>
</tr>
<tr>
<td>Limitations and Strengths of Laboratory Experiments</td>
<td>37</td>
</tr>
<tr>
<td>SELECTING A RESEARCH METHOD</td>
<td>38</td>
</tr>
<tr>
<td>MIXED METHODS</td>
<td>39</td>
</tr>
<tr>
<td>Quantitative Method</td>
<td>39</td>
</tr>
<tr>
<td>Social loafing surveys</td>
<td>40</td>
</tr>
<tr>
<td>Participants</td>
<td>40</td>
</tr>
<tr>
<td>Procedure</td>
<td>40</td>
</tr>
<tr>
<td>Perceived group member loafing</td>
<td>40</td>
</tr>
<tr>
<td>Perceived individual loafing</td>
<td>41</td>
</tr>
<tr>
<td>Task visibility</td>
<td>42</td>
</tr>
<tr>
<td>Contribution</td>
<td>44</td>
</tr>
<tr>
<td>Distributive justice</td>
<td>44</td>
</tr>
<tr>
<td>Sucker effect</td>
<td>45</td>
</tr>
<tr>
<td>Dominance</td>
<td>46</td>
</tr>
<tr>
<td>LIMITATIONS AND STRENGTHS OF SURVEYS IN FIELD RESEARCH</td>
<td>47</td>
</tr>
<tr>
<td>QUALITATIVE METHOD</td>
<td>48</td>
</tr>
<tr>
<td>Structured Interviews</td>
<td>48</td>
</tr>
<tr>
<td>Participant selection</td>
<td>49</td>
</tr>
<tr>
<td>Research setting</td>
<td>49</td>
</tr>
<tr>
<td>Interview protocol</td>
<td>49</td>
</tr>
<tr>
<td>Interview software</td>
<td>50</td>
</tr>
<tr>
<td>Limitations and strengths of interviews in previous research</td>
<td>51</td>
</tr>
<tr>
<td>RESEARCH ANALYSIS</td>
<td>52</td>
</tr>
<tr>
<td>Quantitative Analysis</td>
<td>52</td>
</tr>
<tr>
<td>Qualitative Analysis</td>
<td>52</td>
</tr>
<tr>
<td>LIMITATIONS OF RESEARCH METHODS</td>
<td>53</td>
</tr>
</tbody>
</table>

## CHAPTER 4: RESULTS

<table>
<thead>
<tr>
<th>QUANTITATIVE RESULT</th>
<th>55</th>
</tr>
</thead>
<tbody>
<tr>
<td>Descriptive Statistics for Participant Demographics</td>
<td>55</td>
</tr>
<tr>
<td>Inferential Statistics Limitation of Survey</td>
<td>56</td>
</tr>
<tr>
<td>Hypothesis Testing</td>
<td>56</td>
</tr>
<tr>
<td>Research question 1</td>
<td>56</td>
</tr>
<tr>
<td>Research question 2</td>
<td>58</td>
</tr>
<tr>
<td>Research question 3</td>
<td>59</td>
</tr>
<tr>
<td>Research question 4</td>
<td>66</td>
</tr>
<tr>
<td>QUALITATIVE RESULTS</td>
<td>67</td>
</tr>
<tr>
<td>Structured Interviews</td>
<td>67</td>
</tr>
<tr>
<td>INTERVIEW CODING</td>
<td>70</td>
</tr>
<tr>
<td>Descriptive Statistics for Participant Demographics</td>
<td>70</td>
</tr>
<tr>
<td>Thematic Analysis</td>
<td>71</td>
</tr>
<tr>
<td>Themes</td>
<td>71</td>
</tr>
<tr>
<td>Developing Themes and Sub-themes</td>
<td>72</td>
</tr>
</tbody>
</table>
### Social Loafing Antecedents

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal schedules</td>
<td>73</td>
</tr>
<tr>
<td>Poor communication</td>
<td>74</td>
</tr>
<tr>
<td>Dominance and intimidation</td>
<td>76</td>
</tr>
<tr>
<td>Group grade</td>
<td>79</td>
</tr>
</tbody>
</table>

### Social Loafing Moderators

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feedback</td>
<td>79</td>
</tr>
<tr>
<td>Positive communication</td>
<td>80</td>
</tr>
<tr>
<td>Role assignment</td>
<td>81</td>
</tr>
<tr>
<td>Deadlines</td>
<td>82</td>
</tr>
<tr>
<td>Clear expectations</td>
<td>82</td>
</tr>
<tr>
<td>Peer evaluations</td>
<td>83</td>
</tr>
</tbody>
</table>

### Social Loafing Impact

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucker role and sucker effect</td>
<td>83</td>
</tr>
<tr>
<td>Dislike of groups</td>
<td>84</td>
</tr>
</tbody>
</table>

### Student Perceptions of Online Groups

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Like/Dislike group work</td>
<td>85</td>
</tr>
<tr>
<td>Negatives of group work</td>
<td>86</td>
</tr>
<tr>
<td>Benefits of group work</td>
<td>88</td>
</tr>
<tr>
<td>Preparation for work groups</td>
<td>89</td>
</tr>
</tbody>
</table>

### Self-reported Social Loafing

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Loafing of Others</td>
<td>90</td>
</tr>
<tr>
<td>Social Loafing Others</td>
<td>91</td>
</tr>
<tr>
<td>Recommendations for Faculty</td>
<td>93</td>
</tr>
</tbody>
</table>

### CONCLUSION

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PURPOSE OF QUALITATIVE DATA COLLECTION</td>
<td>95</td>
</tr>
</tbody>
</table>

#### RESEARCH QUESTION 1

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perception of Social Loafing of Others</td>
<td>95</td>
</tr>
<tr>
<td>Perception of Social Loafing Self</td>
<td>97</td>
</tr>
</tbody>
</table>

#### RESEARCH QUESTION 2

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominance/Aggression and Social Loafing Self</td>
<td>98</td>
</tr>
<tr>
<td>Contributions and Social Loafing Self</td>
<td>100</td>
</tr>
<tr>
<td>Distributive Justice and Social Loafing Self</td>
<td>101</td>
</tr>
</tbody>
</table>

#### RESEARCH QUESTION 3

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
</table>

#### RESEARCH QUESTION 4

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
</table>

#### Social Loafing Antecedents Identified in Interviews

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal schedules, poor communication, and group grade</td>
<td>106</td>
</tr>
</tbody>
</table>

#### Social Loafing Impact

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dislike of groups, sucker effect, and sucker role</td>
<td>110</td>
</tr>
</tbody>
</table>

#### Social Loafing Moderators

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive communication</td>
<td>112</td>
</tr>
<tr>
<td>Feedback</td>
<td>112</td>
</tr>
<tr>
<td>Role assignment</td>
<td>113</td>
</tr>
<tr>
<td>Deadlines</td>
<td>113</td>
</tr>
<tr>
<td>Clear expectations</td>
<td>113</td>
</tr>
<tr>
<td>Peer evaluations</td>
<td>113</td>
</tr>
</tbody>
</table>
LIST OF TABLES

TABLE 1: SOCIAL LOAFING PROPOSITIONS ................................................................. 12
TABLE 2: SAMPLE OF RESEARCH SINCE 1993 .......................................................... 37
TABLE 3: DESCRIPTIVE STATISTICS FOR THE PARTICIPANTS’ DEMOGRAPHICS ...... 56
TABLE 4: DESCRIPTIVE STATISTICS FOR PERCEIVED GROUP MEMBER LOAFING
SUBSCALE .................................................................................................................. 57
TABLE 5: DESCRIPTIVE STATISTICS FOR PERCEIVED GROUP MEMBER LOAFING
ITEMS .......................................................................................................................... 58
TABLE 6: MEANS AND STANDARD DEVIATIONS OF SOCIAL LOAFING SUBSCALES .... 59
TABLE 7: BIVARIATE PEARSON CORRELATIONS AMONG SOCIAL LOAFING
SUBSCALES ................................................................................................................ 59
TABLE 8: MEANS AND STANDARD DEVIATIONS OF SOCIAL LOAFING SCALES BY
STUDENT GROUP ....................................................................................................... 62
TABLE 9: UNIVARIATE ANOVAS ON SOCIAL LOAFING FACTORS BY STUDENT
GROUP ....................................................................................................................... 63
TABLE 10: BONFERRONI POST HOC TESTS FOR TASK VISIBILITY ......................... 64
TABLE 11: BONFERRONI POST HOC TESTS FOR CONTRIBUTION ............................. 65
TABLE 12: DESCRIPTIVE STATISTICS FOR RESEARCH QUESTION 4.................... 67
TABLE 13: REGRESSION COEFFICIENTS FOR RESEARCH QUESTION 4................... 67
TABLE 14: DESCRIPTIVE STATISTICS FOR THE PARTICIPANTS’ DEMOGRAPHICS ..... 71
TABLE 15: INITIAL SOCIAL LOAFING INTERVIEW THEMES .................................. 72
TABLE 16: INTERVIEW THEMES AND SUB-THEMES ............................................. 73
TABLE 17: INTERVIEW THEMES AND SUB-THEMES ............................................. 108
ABSTRACT

Social loafing research has spanned several decades and fields of study. Research has provided support for both the existence of social loafing and its antecedents within the laboratory, classroom, and work place. Studies regarding the perceptions of social loafing and its effects in the online learning environment, however, are largely non-existent. In 2008, a research study was conducted with the Naval War College and two public universities (Piezon & Ferree, 2008). This study surveyed 227 online learning students who were participating in online learning groups. The study sought to determine whether the perception of social loafing existed within online learning groups. In addition, several psychosocial factors identified in face-to-face environments were analyzed to determine their impact in online learning groups. The study provided evidence that supports both the perception of social loafing in online learning groups as well as similarities between social loafing antecedents in face-to-face groups and those in the online learning environment.

This current research project extends the 2008 study to include community college and undergraduate students in addition to the graduate students and Naval War College students in the original study. In addition, the study was expanded to include both qualitative and quantitative data. This extended study included 343 web-based survey participants and 28 interview participants. This study sought to determine whether social loafing exists at the two-year, four-year, and graduate level. In addition, the data was examined for differences in perceptions between each of the four study groups and relationships between the survey sub-scales. Finally, this study sought to determine the ability of the social loafing sub-scales to predict social loafing behaviors in online learning groups at the two-year, four-year, and graduate level.
CHAPTER 1
INTRODUCTION

Problem Statement

As the use of distance learning in colleges and universities continues to expand, instructors and administrators are seeking ways to improve the online learning experience. One means of achieving this goal, and better prepare students for the corporate environment, is through the utilization of collaborative groups. Proponents of group work purport that students can learn valuable lessons regarding group communication and problem solving that are easily transferable to the work environment (Becker & Dwyer, 1998). As work tasks become too complex for individual organizations to manage, organizations are increasingly turning to virtual work groups to bridge the gap (Black, 2002). Working in groups is thought to significantly increase learning perceptions, problem solving skills, and help students achieve a higher level of learning than individual learning alone (Hiltz, Coppola, Rotter & Turoff, 1999). The theory of social facilitation may help to explain the increased performance. Social facilitation is simply the concept that people often perform better in the presence of others than alone (Cook, 2001). However, when discussing social facilitation, it is important to understand that the term has been used to summarize both the positive and negative aspects of groups. It is much more accurate to refer to social facilitation effects. The term social facilitation effects refer to both social facilitation (better performance) and social impairment (worse performance) (Parks & Sanna, 1999).

Although distance education courses are increasingly incorporating various versions of cooperative and collaborative learning exercises, these group activities are not always received positively by students, nor do they result in the higher learning expectations of the course designers. It is not unusual to find that group work is often much more popular with faculty than with students (Mason, 1998). Group work requires increased time to complete and a dependence on others that is often in direct conflict with student perceptions of online learning. Many students select online learning programs in lieu of face-to-face programs due to the increased autonomy, temporal flexibility, and ability to complete their education while attending to other obligations (e.g., work, family). Mandating group work in online learning courses can decrease the attractiveness of the medium for these students since the requirements of group work remove
the very reasons they initially enrolled in an online learning program. The addition of group work presents a set of problems for students that include, but are not limited to, non-contributing group members, unequal workload, scheduling, and personal/social conflicts between group members (Becker & Dwyer, 1998).

Although these problems can occur in both face-to-face and online environments, they may be exacerbated in the online environment due to lack of visual cues, lack of consistent contact, insufficient time to build group cohesion, and time zone issues. It is precisely the negative nature of social and psychological phenomena that should inspire researchers and educators to pursue the impact and possible mitigating factors for their occurrence. The challenge for online faculty and course designers is to create group scenarios that have the ability to enhance the positive aspects of group work while minimizing the potential negative aspects. However, mitigating or eliminating negative social/psychological phenomenon in group work requires increased research into online learning groups to determine if, when, and to what degree these negative phenomena occur.

**Importance of Research**

The theory of *social facilitation* suggests that the presence of others has a positive influence on a persons’ performance (Parks & Sanna, 1999). Collaborative research supports the suggestion that group work can improve problem-solving skills, assist in higher level learning, and improve critical thinking (Hiltz, Coppola, Rotter, & Turoff, 1999). However, research also suggests that some group members may engage in negative behavior such as social loafing. *Social loafing* is the tendency to reduce individual effort when working in groups compared to the individual effort expended when working alone (Williams & Karau, 1991). The literature on social loafing identifies several antecedents as contributing to the development of social loafing among group members. These antecedents include, but are not limited to, task visibility, task interdependence, cohesiveness, distributive justice, procedural justice, group size, and dominance. In addition to these antecedents, research has identified several individual social factors that are commonly associated with, contribute to, and at times are used interchangeably with the term social loafing. These factors include shirking, lurking, dominance, aggression, and free riding.

Research on the phenomenon of social loafing and free riding is extensive in the laboratory, face-to-face classrooms, and organizational settings. However, research regarding
the existence of social loafing in the online learning environment is sparse. Online learning issues such as geographical separation, lack of visual cues, work schedules, and time zone differences may exacerbate the perception of social loafing and free riding in online learning groups. This study seeks to increase the understanding of social loafing in the online learning group by determining whether the perception of social loafing and free riding exists among online learning students and, if so, whether previously identified antecedents in face-to-face research also exist in online learning courses.

**Social Loafing: Theory Analysis and Future Expectations**

*Social loafing* is the tendency to reduce individual effort when working in groups compared to the individual effort expended when working alone (Williams & Karau, 1991). At the opposite end of the spectrum from social loafing is social facilitation. Social facilitation is the concept that people often perform better in the presence of others than alone (Cook, 2001). Although the two theories developed in isolation of each other, over the years researchers recognized their direct opposition and began to examine social loafing with respect to social facilitation. Currently, researchers consider social facilitation to encompass both the positive and negative social effects upon group performance. However, it is important to note that the term social facilitation has not always been used to summarize both the positive and negative aspects of groups. Initially, social facilitation referred to only the positive aspects, or increased performance, of groups. Today, it is much more accurate to refer to *social facilitation effects*. The term social facilitation effects refer to both social facilitation (better performance) and social impairment (worse performance) (Parks & Sanna, 1999).

**What Contexts Remain to be Explored?**

There are several contexts for social loafing that remain to be explored: virtual groups, online learning groups, specialty groups (e.g., juries, aircrews, military teams), and isolated groups. The literature on these types of groups is sparse to non-existent. This may be due, in part, to the difficulty presented in accessing participants from such groups for inclusion in research studies. Research into specialty groups, such as aircrews, for instance, involves approval of airlines and negotiations with union officials. Often, limitations placed upon the researcher nullify the research objective. For example, seeking participants in the military is not difficult but requires justification and approval through the appropriate chain-of-command and access to military property and equipment. Unless the military unit involved has already stated
an expressed interest in research related to an area of study, accessibility is limited. Accessibility to juries has been accomplished in the past but comes with its own set of limitations, and researchers have to take into consideration the rights of the defendant, privacy issues of individual jury members, jury nullification, jury tampering/influence, etc. Most jury research has to be conducted post hoc, thus limiting the extent of research conducted. Isolated groups have received little attention in the literature with the exception of Chatman’s research on prisoners and the elderly (Chatman, 1991; 1992; 1999) and Campbell’s work on prisoners (Campbell, 2006). Other isolated groups such as Native American Indians in Alaska seem to only garner the attention of psychology researchers and lack the attention so deserved of specialty groups for social loafing. As space exploration becomes more of a reality, research should be conducted regarding long-term effects of isolated groups in space (e.g., scientists, astronauts).

Based on an examination of the relevant literature, the study of social loafing would benefit from further investigation of the following questions:

1. Is social loafing as prevalent in online learning groups as it is in face-to-face environments?
2. Does the perception of social loafing exist in computer-mediated communication groups?
3. To what degree does social loafing behavior inhibit information sharing?
4. Does the media type influence the existence or degree of social loafing?
5. Does the mix of cultural backgrounds in online groups influence social loafing behavior?
6. Does social loafing exist in specialty groups such as juries, Supreme Court, space teams, military teams, aircrews, etc.?
7. Will social loafers self-disclose or are they not aware of social loafing behaviors?
8. Does awareness of social loafing affect the occurrence of social loafing within groups?
9. If social loafing is found to exist in online learning groups, are the antecedents identified in face-to-face literature the same or different?
10. Since working in valued groups often mitigates or eliminates social loafing, should educators allow students to self-select group membership?
11. Does self-selection of group membership decrease the benefits associated with diversity?

These research questions obviously require multiple and repetitive research studies in various environments that are beyond the scope of this research study. However, it is hoped that this study will answer the first question and provide data that will assist other researchers in pursuing answers to the remaining questions above.

**Research Goals and Objectives**

The lack of research regarding social loafing and free riding in online learning groups has prompted me to conduct research that will contribute to the current literature base on social loafing by determining whether the perception of social loafing and free riding exists in the online learning environment. From the literature base on group research, I have developed the following research questions:

**RQ1**: Does the perception of social loafing and free riding exist within online learning groups at the 2 year, 4 year, and graduate level?

**RQ2**: Are there statistically significant relationships among the 5 social loafing subscales: (1) social loafing self, (2) individual task visibility, (3) individual contribution, (4) distributive justice, and (5) dominance and aggression?

- $H_0$: There will not be statistically significant relationships among the 5 social loafing subscales.
- $H_A$: There will be statistically significant relationships among the 5 social loafing subscales.

**RQ3**: Are there statistically significant differences among the community college, undergraduate, graduate and Naval War College students on the 5 subscales of the Social Loafing Survey: (1) social loafing self, (2) individual task visibility, (3) individual contribution, (4) distributive justice, and (5) dominance and aggression?

- $H_0$: There will not be statistically significant differences among the community college, undergraduate, graduate and Naval War College students on the 5 subscales of the Social Loafing Survey.
- $H_A$: There will be statistically significant differences among the community college, undergraduate, graduate and Naval War College students on the 5 subscales of the Social Loafing Survey.
RQ4: Are the following subscales statistically significant predictors of the participants’ perceptions of individual social loafing: (1) individual task visibility, (2) individual contribution, (3) distributive justice, and (4) dominance and aggression?

H₀: Task visibility, individual contribution, distributive justice, and dominance and aggression will not be statistically significant predictors of the participants’ perceptions of individual social loafing.

Hₐ: Task visibility, individual contribution, distributive justice, dominance and aggression will be statistically significant predictors of the participants’ perceptions of individual social loafing.
CHAPTER 2
LITERATURE REVIEW

Introduction to Social Loafing

It is much more difficult to provide a social and historical context for the social loafing theory than for social facilitation. This is due largely to the relative anonymity of the author of the theory as well as the multi-national development of the theory across time. One of the first recorded reports of social loafing was by Max Ringelmann in 1913. Ringelmann was a French agricultural engineer who was interested in determining the efficiency of animals, men and machines in various agricultural applications (Kravitz & Martin, 1986). Ringelmann conducted research from 1882 to 1887 at the agricultural school of Grand-Jouan. This information alone has been inaccurately reported over the years. All of Ringelmann’s publications that are accessible are published in German. There are no direct translations into English. The closest attempt at direct translation was accomplished by Kravitz and Martin (1986). These authors did not actually translate Ringelmann’s work, but rather provided explanations and clarifications of the original work. In their article, the authors point out the misconception that Ringelmann was a German psychologist. This misconception has been cited repeatedly over the course of the theory development. This has undoubtedly influenced the perception and direction of the original work. This was partially perpetuated by Moede (1927), who, in his work, references Ringelmann’s research with the word “we.” According to Kravitz and Martin (1986), he did not cite Ringelmann’s work with the exception of putting Ringelmann’s name under one of his drawings. This led researchers unfamiliar with the original text and the inability to translate to the conclusion that Moede worked with Ringelmann. This, in fact, was not the case.

Another miscommunication that occurred over time is that Ringelmann attributed social loafing to motivation loss. However, according to the interpretation of Kravitz and Martin (1986), Ringelmann dismissed such a consideration. Ringelmann was using his college students as participants (not unlike today) and stated that they were highly motivated and anxious to participate in the experiment. Therefore, he concluded that the experimental results must be the result of coordination loss. Although social loafing research would ultimately return to examine the original conclusions of Ringelmann’s experiments, it took nearly sixty years for that to occur.
Historical Background

The historical context within which the concept of social loafing originated is largely debatable. Ringelmann himself did not publish his research until 1913 (which was twenty-six years after he conducted the research). The final publication lacked significant detail regarding research protocol and involved some mathematical error. Statistical analysis was not standard at the time and was, therefore, not conducted. Due to lack of information about Ringelmann’s background, publications, or research area, it is difficult to make any assumptions about what may or may not have influenced his research. The only historical analysis we can provide is based solely on his profession, location, and historical events at the time.

We know that Ringelmann was a French agricultural engineer who had an interest in the work efficiency of men, animals, and machines. It seems that the social loafing theory stemmed not from intended research into the social sciences but rather as a byproduct of agricultural research. From the information provided in his publication, it appears that he was simply trying to provide an explanation of degradation in process efficiency. He noted that he had also observed decreases in productivity in mechanical engineering. Therefore, it seems his interest lay not in furthering the social sciences but in furthering agricultural research by determining the causes of process loss in agricultural settings.

Ringelmann’s Theory

In his 1913 publication, Ringelmann describes the inverse relationship between the size of the team and the effort expanded. This relationship was subsequently referred to as the Ringelmann Effect. In a rope pulling experiment, Ringelmann noted that as the number of group members was increased, there was a decrease in overall performance.

In this publication, Ringelmann also discussed another experiment in which prisoners provided motive power for a flour mill. He reported that as more men were added, each man began to rely on his neighbor to furnish the desired effort. Some prisoners became content to let their hand follow the crank and some went as far as letting the crank pull their hand. Although he attributed the outcome to a motivational loss, this was not the primary focus of his research.

In his primary research, Ringelmann seemed confident that his participants (college students) did not suffer motivational loss. He stated that the students were enthusiastic about participating in his research. However, Ringelmann did express concern over the impact of fatigue and was careful to control the conditions as much as possible to avoid fatigue by
providing substantial breaks between iterations and ensuring that the iterations were performed on the same day under similar environmental conditions.

Instead of motivation loss, Ringelmann attributed the decline in his student’s performance to coordination loss (effort was not coordinated perfectly between participants). Support for this focus is in his reference to coordination loss in multi-cylinder combustion engines (Kravitz & Martin, 1986). Although Ringelmann’s research is generally considered a social psychological experiment, this was not his intention. He was primarily interested in performance efficiency, and his work held a closer resemblance to human factors research than social psychology.

Subsequent to Ringelmann’s publication in 1913, his research was frequently cited in German literature (Kravitz & Martin, 1986) and English publications (Dashiell, 1930; Steiner, 1972). Moede (1927) was the first to include Ringelmann’s work and did so without citation but by using and labeling Ringelmann’s drawings in his work (Kravitz & Martin, 1986). According to Kravitz and Martin (1986), the reference with lack of citation, along with the use of the word “we” when referencing the drawing, led many subsequent researchers to erroneously assume a working relationship between Ringelmann and Moede. In addition, this could have led to the widely held assumption the Ringelmann was a German psychologist (Kravitz & Martin, 1986). Ringelmann is referred to as a German psychologist in many of the post 1970 English publications.

There are no English cited works between 1935 and 1972 that pursue the theory of social loafing directly. It seems that interest in pursuing this theory dwindled during this point in history. In fact, the concept of reducing one’s work in groups compared to working alone is not referred to as social loafing until 1979. Latane, Williams, and Harkins (1979) are actually given credit for coining the term social loafing. However, Steiner (1972) is frequently cited for renewing interest in the social loafing theory. In his work, Steiner does not directly refer to Ringelmann’s work but rather focuses on providing a task typology to explain what he refers to as process loss. Steiner (1972) contends that actual group productivity is the potential group productivity minus losses due to a faulty process. This is directly in line with Ringelmann’s conclusion that the reduced performance of his students in a group compared to when functioning alone was due to coordination loss. Steiner (1972) considers coordination loss to be one of many types of process loss. However, it is interesting to note that when Steiner discusses
process loss due to motivation, he does not cite Ringelmann’s work but rather the theory of social facilitation and inhibition. Allport (1924) coined the term *social facilitation*, which refers to the increase in performance when others are present. Steiner discusses Allport’s (1924) work, which was a precursor to Zajonc’s (1966) theory of *mere presence*. Mere presence is the concept that the sight and sound of others working around an individual may provide encouragement or increased motivation to perform better. The theory of social facilitation, as noted earlier, developed parallel to and in isolation of social loafing. While social loafing examines process loss in groups, social facilitation examines process gain. It is at this point in history that the two theories begin to cross paths.

**Social Loafing Propositions**

*Social loafing* is the tendency to reduce individual effort when working in groups compared to the individual effort expended when working alone (Williams & Karau, 1991). The literature on social loafing identifies several antecedents as contributing to the development of social loafing among group members. These antecedents include task visibility (Kidwell & Bennett, 1993; Black, 2002), task interdependence (Karau & Williams, 1993; Liden et al, 2004; Mulvey & Klein, 1998), cohesiveness (Mulvey & Klein, 1998; Kerr, 1983; Weldon, Blair, & Huebsch, 2000; Liden et al, 2004), distributive justice (Kidwell & Bennett, 1993), procedural justice (Kidwell & Bennett, 1993), group size (Jones, 1984; Shaw, 1981; Hindriks & Pancs, 2001; Kidwell & Bennett, 1993; Steiner, 1972), and dominance (Paylof & Pratt, 2003). In addition to these antecedents, research has identified several individual social factors that are commonly associated with, contribute to, and at times used interchangeably with the term social loafing. These factors include shirking, lurking, dominance, aggression, and free riding.

**First Things First**

Before discussing the antecedents and individual social factors related to social loafing, it is imperative to discuss the concepts of *group* and *collective*. Without first operationalizing these terms, research can be misinterpreted and results confounded. Group researchers do not generally refer to a collection of people as a group. Group researchers distinguish between a *collective* and a *group* (Parks & Sanna, 1999). Most researchers consider a collective to be temporary in nature and to consist of a large number of individuals who are unorganized (Turner & Killian, 1987). A group is usually smaller in number, with a defined infrastructure, and more permanent in nature (Turner & Killian, 1987). Parks and Sanna (1999) identify several factors...
that separate a group from a collective: norms, roles, status, cohesion, communication, and formal/informal networks. It is important to note that social loafing research refers to individual and group behavior that occurs within the group structure.

**Social Loafing Antecedents and Their Propositions**

As noted earlier, there are many social loafing antecedents identified in the literature. Several schema for categorizing social loafing antecedents exist (Kidwell & Bennett, 1993; Karau & Williams, 1993; George, 1992; and Comer, 1995). Regardless of research models developed or schemas employed, there appears to be a consistent list of variables associated with social loafing in the literature. What follows is a brief explanation of some of the most frequently cited antecedents to social loafing. Table 1 outlines the selected social loafing concepts and their propositions.
Table 1

Social Loafing Propositions

<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition</th>
<th>Propositions</th>
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<tbody>
<tr>
<td>Procedural Justice</td>
<td>An individual's perception of the distribution of rewards or compensation among group members.</td>
<td>Individual may alter their individual work effort if there is a perception of unfair distribution of awards.</td>
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<tr>
<td>Distributive Justice</td>
<td>An individual's perceived fairness of the procedures and policies associated with distributive justice.</td>
<td>Individual may alter their individual work effort if there is a perception of the procedures that determine the distribution of awards among group members.</td>
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<td>Group Size</td>
<td>The number of individuals that are formal or informal members of the group.</td>
<td>Although group performance may increase with group size, the performance increase is accompanied by increased opportunities for process loss.</td>
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<tr>
<td>Group Norms</td>
<td>Basic rules of conduct for individual behaviors within the group context that serve to provide behavior consistency among group members.</td>
<td>Norms help to reduce ambiguity of group situations by increasing the predictability of individual behaviors.</td>
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<td>Task Visibility</td>
<td>The belief that one's individual efforts are being observed by a supervisor.</td>
<td>When an individual's task contributions are not visible to their supervisor, individuals may perceive that their work is not important or critical for group success.</td>
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<tr>
<td>Perceived Social Loafing</td>
<td>The extent that group members believe that other group members are engaging in social loafing.</td>
<td>Social loafing does not actually have to be occurring within the group to influence group member's tendency to social loaf. The mere perception of social loafing among group members may influence other group members to loaf.</td>
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<td>Sucker Role</td>
<td>The act of co-workers carrying (performing the tasks) of a social loafer or free rider.</td>
<td>Performing the sucker role may increase the individual's perception of unfair procedural and distributive justice.</td>
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<tr>
<td>Sucker Effect</td>
<td>An individual's avoidance of playing the sucker role by reducing their individual effort.</td>
<td>Succumbing to the sucker effect is an individual's attempt to influence the fair distribution of awards among group members.</td>
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<tr>
<td>Lurking</td>
<td>A social behavior demonstrated by an individual being hesitant to participate fully in a public forum.</td>
<td>Lurking increases potential perceptions of group member's commitment and contribution to group performance.</td>
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<tr>
<td>Shirking</td>
<td>A decrease or complete lack of individual contributions, regardless of group expectations or group's desire for the individual to meet the needs of the group.</td>
<td>The extent of this behavior is directly influenced by the ability or willingness of other group members to increase their input to compensate for lack of contribution by the individual.</td>
</tr>
<tr>
<td>Dominance</td>
<td>An individual's attempt to establish rules, control, or otherwise establish authority over other group members.</td>
<td>Dominant group members may intimidate or discourage (intentionally or not) the participation and contributions of other group members.</td>
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<tr>
<td>Aggression</td>
<td>Overt or suppressed hostility toward other group members.</td>
<td>Group member aggression increases the possibility that other group members will decrease their individual contributions to the group effort.</td>
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<tr>
<td>Free Riding</td>
<td>An individual does not bear a proportional amount of work and yet shares the benefits awarded to the group.</td>
<td>Group members may perceive little need to contribute to the group effort if they are confident their fellow group members will increase their individual contributions to compensate for the lost contributions of the free rider.</td>
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**Procedural and distributive justice.** *Distributive justice* is how an individual perceives the distribution of rewards or compensation among group members. The perceived fairness of the procedures and policies associated with distributed justice is termed *procedural justice.* Individual task achievement, when participating in group activities, can be impacted by the perception of procedural and distributive justice established by administrators and other participants. Kidwell and Bennett (1993) proposed that an individual may alter their individual work effort if there is a perception of unfair distribution of rewards. Research indicates there is a significant correlation between procedural justice and social loafing; an individual’s perception
of the fairness in distribution procedures may influence the individual’s effort on group projects (Liden et al, 2004; Karau and Williams, 1993).

**Task interdependence.** Task interdependence theory proposes that as an individual’s work becomes increasingly interdependent with other individuals' work, he/she may find it more difficult to determine any sense of personal achievement. Creating a high level of task interdependence among group members is crucial to the success of the group. Karau and Williams (1993) suggest that individuals will be unlikely to exert extraordinary effort unless they view their task as meaningful. Individuals will withhold effort, achieve rewards, and calculate greater benefits as long as they perceive that doing so will not affect their outcomes (Liden et al, 2004). Research has demonstrated a significant correlation between goal difficulty, group goal commitment, and group performance (Mulvey & Klein, 1998).

**Group size.** There are positive and negative aspects to group size. Large groups provide an increase in group member resource contributions, more diversified skills, increased knowledge base, increased conformity, and increased opportunities to meet others with similar interests (Shaw, 1981). However, as group size increases, members may face increasing difficulties with: (a) group organizational issues, (b) task visibility of group members, (c) social loafing, (d) free riding, (e) decrease in leader emergence (f) group’s ability to coordinate and collaborate, and (g) pressure to conform (Jones, 1984; Shaw, 1981).

Studies suggest that in smaller groups, there is increased individual participation, more time for discussion, greater satisfaction, and an increased perception that individual contributions are crucial to the success of the process (Hindriks & Panes, 2001; Kidwell & Bennett, 1993; Shaw, 1981). Although group performance may increase with group size, this performance increase is accompanied by increased opportunities for process loss. Steiner (1972) concluded that productivity would increase with size if each member’s contributions were optimal. However, due to process loss, this rarely happens. Process loss may occur for a variety of reasons that may include motivation or coordination issues. Therefore, the actual productivity of any group is its potential productivity minus the process loss. Due to these factors, Steiner concluded that additional group members will increase productivity but at a decreasing rate with each addition.

With this in mind, it is sometimes difficult to determine how large or small a group should be to maximize performance without sacrificing productivity. The best rule of thumb is
that a group should not be larger than the size the task requires. Hackman (2002) recommends a maximum number of six for educational groups. He bases this recommendation on the number of potential interactions between members, noting that “…a six person team has fifteen pairs among members, but a seven-person team has twenty-one, and the difference in how well groups of the two sizes operate is noticeable” (p. 119). When considering group size, it is also important to determine the type of task with which the group will be involved. Both disjunctive and additive tasks benefit from larger group sizes while conjunctive tasks benefit most from smaller group sizes. Based on this information, educators should not base group size on convenience or instructor preference but rather task type and the number of members required in accomplishing the task.

*Group norms* are basic rules of conduct for individual behaviors within the group context that serve to provide behavioral consistency among group members (Shaw, 1981). These rules help to reduce the ambiguity of group situations by increasing the predictability of individual behaviors. Although it is rare for all group members to agree with and abide by all rules of conduct, most will agree that a standard is a norm if at least half of the members agree that it is a norm (Shaw, 1981). Groups will not establish norms for every conceivable situation but rather only those that the group considers important. While norm development may usually require a group majority, specific norms may not necessarily apply to all group members, but may apply exclusively to specific individuals, roles, or situations. Adherence to enacted norms is dependent upon the personality of the individuals, the situation, environment, and group relations. However, research indicates that certain individuals may be more likely to conform. Factors that may increase one’s likelihood to conform include intelligence, age, target of blame, views of authority, and gender. Those who are more intelligent, older, tend to blame themselves, are authoritarians, or are women are less likely to conform to group norms (Shaw, 1981). An administrator can assist students in the development of group rules of conduct by providing guidelines on communication and other group norms. Hackman (2002) outlines three basic ways in which group norms are established; they may:

1. be imported by individual group members,
2. evolve gradually, or
3. be deliberately created as part of the group structure.
Hackman points out that naturally evolving norms are more likely to focus on maintaining group harmony than on increasing team effectiveness. He further proposes that there are two core norms that foster team effectiveness:

1. Members take an active versus a passive stance toward their environment, and
2. Members define behavioral team boundaries (i.e., must do, must not do).

Since these core norms are not likely to evolve naturally, it may be incumbent upon administrators to build them into the group structure.

**Group cohesiveness.** Group cohesiveness refers to the ability of the group to bond together as a whole. Research suggests that individuals may exert less effort when working collectively because they feel their inputs are not essential to a high-quality group product (Kerr, 1983; Weldon, Blair, & Huebsch, 2000). The more cohesive the group, the more likely the group is to accomplish the goals of the group. According to social exchange theory, when individuals perceive that they are participating in a high-quality relationship, they will engage in reciprocal behavior (Murphy et al, 2003). If group members do not feel that they are close-knit, they may be more inclined to engage in social loafing. If the group has a feeling of cohesiveness, the members may interpret social loafing as letting their fellow group members down (Liden et al, 2004).

**Task visibility.** Kidwell and Bennett (1993) define task visibility as the belief that one’s individual efforts are being observed by a supervisor. Decreased individual task visibility may increase the occurrence of social loafing among group members. Individuals perceive that their work is not important or critical for group success. One method for addressing task visibility, goal achievement, and group achievement is to incorporate Black’s (2002) suggestion of utilizing group established performance goals, contact procedures, and methods for addressing and solving problems. In addition to these suggestions, an instructor may wish to include milestones, an early form of assessment of individual and group achievement, multiple evaluation points, and clearly identified evaluation criteria such as group and individual grading rubrics. These suggestions can be utilized to increase students’ perception of task visibility and thus may have a positive influence on group participation and completions of assigned tasks. A study conducted by Brooks and Ammons (2003), found that the early implementation of specific evaluation criteria, early implementation of assessments, and multiple assessment points had a
positive impact on student perception of the group experience. In addition, students perceived a
decrease in free riding problems by other group members.

Individual Perceptions

Individuals’ perceptions directly influence their social behaviors within groups. Social
behaviors do not actually have to occur within the group to influence other group members’
behavior. One example of this behavior is perceived social loafing. Perceived social loafing
refers to the extent to which group members believe that other group members are engaging in
social loafing (Comer, 1995). Group members will base their actions on the perceived actions of
their fellow group members whether or not they are actually occurring (Mulvey & Klein, 1998).
If the perception is that fellow group members are not loafing, one would not expect negative
influences on other group members. The mere perception, whether accurate or not, may result in
negative effects on group member’s motivation and may result in social loafing (Mulvey &
Klein, 1998). Two group behaviors resulting from the mere perception of social loafing and free
riding are referred to as the sucker role and the sucker effect. Sucker role refers to the act of co-
workers carrying a social loafer or free rider. Sucker effect refers to avoiding playing the sucker
role by reducing one’s individual effort (Kerr, 1983). Individual perceptions of many group
behaviors can increase the detrimental impact on subsequent group behaviors and group and goal
achievement.

Learner Perceptions and Social Behaviors

Negative learner perceptions and social behaviors can have a detrimental effect on group
process and can decrease group performance. Research indicates the following individual
behaviors occur within the social environment of groups. Even the mere perception that these
behaviors are occurring is sufficient to cause process loss by the group.

Lurking. Lurking is a social behavior demonstrated by an individual hesitant to
participate fully in a public forum (Salmon, Giles, & Allen, 1997). Rovai (2001) states that
“Lurkers are learners who are bystanders to course discussions, lack commitment to the
community, and receive benefits without giving anything back. Lurking is generally viewed as a
common occurrence in many online discussion groups” (p. 291). While an individual who lurks
is not actively participating in the group, however, this does not mean that learning is not taking
place. There are a variety of reasons why a student may choose to lurk versus fully participating
in a group, such as shyness, feelings of inadequacy, or perceived dominance of other group
members. In addition, lurking is more predominantly associated with participation in less defined groups such as listservs or bulletin boards. Little research is currently available on the term lurking as a social psychological behavior. Available research (Nonnecke & Preece, 1999; Nonnecke & Preece, 2003; Schlosser, 2005) does not focus on intact or well-defined groups such as work groups, teams, or academic groups.

**Shirking.** Shirking is a decrease in or complete removal of individual contributions, regardless of group expectations or the group’s desire for the individual to meet the needs of the group. The extent of this social behavior is directly influenced by the ability or willingness of other group members to increase their input to compensate for lack of contribution by the individual. Researchers frequently use the term shirking synonymously with lurking, social loafing, and free riding although each term has a different meaning.

**Dominance and aggression.** In any group project, personalities of participants should be part of the design considerations. Without any restrictions in project design, it can be expected that stronger personality types will naturally move into positions where they are most comfortable. Problems exist when any individual inappropriately uses their position, status, or strong personality to dominate, intimidate, or harass fellow group members. The impact of this behavior on more reserved members can be a decrease in participation due to a feeling of intimidation (Michaelsen, Fink, & Knight, 1997). There are times, due to individual personalities or a given situation, when a student may demonstrate dominant or aggressive behavior in an online course. Palloff and Pratt (2003) suggest that flaming, rude, angry personal attacks on a fellow classmate can have a negative impact on group dynamics in that the students report feeling unsafe, insecure, and inhibited in expressing their personal feelings and beliefs. Students do not inherently have the skills and knowledge of how to deal with these negative behaviors in a group setting. This lack of knowledge or ability to deal with dominance and aggression in online groups may result in group member social loafing and degradation of group performance.

**Free riding.** Free riding occurs when an individual does not bear a proportional amount of the work and yet shares the benefits awarded to the group (Albanese & Van Fleet, 1985; Jones, 1984). Free riding may occur in educational learning groups when educators award a single group grade to all group members regardless of individual contributions. Under these circumstances, students may perceive little need to contribute to the group effort if they are
confident that their fellow group members will increase their individual contributions to compensate for the lost contributions of the free rider.

Free riding may also be more likely to occur with increasing group size. Larger groups provide increased opportunities for decreased task visibility. Decreased task visibility allows group members to reduce contributions without their team members becoming aware of their lack of contribution. However, as group size decreases, free riding increases the contributions of other group members considerably. This increase in load encourages group member to become more vigilant against free riding among its members. This increased vigilance reduces the number of free rider occurrences (Albanese & van Fleet, 1985).

**Social Facilitation Theory**

The theory of social facilitation refers to improved or impaired performance of individuals working in groups, compared with working alone. However, the current definition of social facilitation differs significantly from the original definition as proposed by Norman Triplett in the late 1890s. Triplett worked at Indiana University in the Psychological laboratory (Aiello & Douthitt, 2001). As a bicycle racing enthusiast, Triplett (1898) observed that the individual riders in paced bicycle races had better times when compared to riders in competition with one another and riders racing alone. The resulting experiment has the honor of being considered the first social psychological experiment (Guerin, 1993). Triplett examined cycling records from the Racing Board of the League of American Wheelers and discovered that pacers led to quicker racing times. Triplett proposed several theories to explain his results, including social consequences, social comparison, distraction, and automaticity (Guerin, 1993). However, of all his explanations, Triplett was particularly interested in the effects of competition. His theory of competition was a dynamogenic one. He proposed that the energy expended in movement is proportional to the idea of the movement (Triplett, 1898). In other words, the sight and sound of another rider gave rise to the idea of riding movement and resulted in increased movement of the rider.

To further explore his dynamogenic factors, he set up a series of experiments with children involving a rod and reel. The apparatus he devised consisted of two fishing reels, which turned silk bands around a drum (Guerin, 1993). He measured the time it took for the silk band to travel around the drum. Triplett reported results of tests using forty children who had alternated trials between working alone and working two at a time. The results indicated that
twenty children were faster in competition, ten were slower, and the remaining ten were unaffected. Triplett’s results indicated that the children reeled faster together than they would alone. Although Triplett’s results are problematic due to research design and limited statistical analysis, his observations are precursors to many modern day theories. His important contributions include distinguishing effects resulting from competition, rivalry (desire to win), and effects due solely to the sight and sound of another person engaged in the same activity (Guerin, 1993). In addition, by proposing that performers may change their behaviors to affect the opinions of others, Triplett was one of the first to propose what would later become known as self-presentation theory.

**Research between 1900 and 1910**

Little research into social facilitation was conducted for several years following Triplett’s observations. There was some research conducted in Germany between 1904 and 1910. Most of this work examined the effects of children working alone or in school groups (Schmidt, 1904; Meumann, 1904; Mayer, 1904; and Burnham, 1905). These studies suggested that children performed better in groups than alone. The lone exception was that children performed better alone when original thought was required (Schmidt, 1904). Burnham (1905) also suggested that performance may be influenced by the „mere presence” of another. This was the first mention of the concept of mere presence in the literature. Zajone (1965) would later follow up on this observation. Unfortunately, these studies suffered the same fate as Triplett’s since they were poorly controlled and the researcher was present in the „alone” condition. Therefore, it was necessary for future research to focus on isolating and controlling factors when conducting social facilitation research. However, it appears that no research into social facilitation was done between 1910 and 1920. Social facilitation research was relatively ignored until Allport’s research in the 1920s.

**Research between 1920 and 1940**

Allport’s research into this area attempted to improve research methods previously applied in social facilitation research by controlling for the effects of practice and rivalry. Allport examined the mental process of individuals in an alone condition versus individuals participating in a co-working group (Allport, 1920), and concluded that individual performance can vary in the presence of others even if they do not interact. He also began to distinguish between quality and quantity of performance measures, and suggested that social influence was
stronger when associations came more easily to the participants than they did when under more difficult conditions. Allport’s results indicated that more associations were made in a group than individually.

In subsequent research Allport (1924) began to distinguish between face-to-face groups and co-working groups. He defined face-to-face groups as having direct social interaction while co-working groups did not. It was in this work that Allport first coined the term social facilitation. He defined social facilitation as “an increase in response merely from the sight or sound of others making the same movement” (Allport, 1924, p. 262).

Gates (1924) extended Allport’s research by exploring the effects of the mere presence of observers rather than any activity or behavior of the audience. In her research, she compared performance of an individual with the performance of the same individual in front of an audience. Unfortunately, once again the researcher failed to properly control for the alone condition since the research was present in all trials. However, it is important to note that in her study, Gates found that those with the poorest performance individually improved the most with an audience. Those who were initially good in the alone condition showed little improvement. Several other studies were conducted examining the effect of audience in the 1920s (Travis, 1925; Sengupta & Sinha, 1926; Weston & English, 1926). Although only one of these experiments (Weston & English, 1926) controlled for the alone condition, they all found improvement in the group condition.

Considering the overwhelming inclusion of the researcher in a large majority of prior research on social facilitation, the research conducted by Ekdahl (1929) added a unique perspective to the research agenda. Ekdahl was interested in the effects of the researcher on performance. His results indicated that performance was only affected when the researcher was present during the learning phase. When the researcher absent condition preceded the present condition, there was no difference in performance. However, the more interesting part of Ekdahl’s research was his inclusion of participant interviews. Subjects reported being more distracted, embarrassed, confused, and more self-conscious with the research present. This study indicated that there were several social and non-social factors at work when the researcher was present.

Dashiell (1930) continued this line of research by suggesting that there are different types of social influence at play in individual performance. Dashielle suggested that there were four
effects at work: (1) mere presence of quiet spectators, (2) others who present overt verbal attitudes, (3) co-working without competition, and (4) explicit rivalry and competition. In his research, Dashielle manipulated these four factors by creating conditions where participants were working alone, being observed, co-working, or in rivalry. Results indicated that although speed was the lowest, accuracy was higher in the alone and co-working conditions. Speed was greatest in the observed group condition. Dashielle concluded that competition was an important factor in group interactions. One interesting result from Dashielle’s experiments was that actual observation was not necessary to induce the effects. The mere perception that another was present was enough to induce the competition effect. Five years later, Dashielle (1935) expanded his four effects to seven: a passive audience, co-workers with no competition, contestants, evaluators making comments on work, co-operators, information controllers, and prestigious or large audiences. In his review of literature in 1935, Dashielle concluded that the mere presence of others tends to increase individual responses as well as increase the number of inaccurate responses.

There were only a few other studies conducted on social facilitation in the wake of the Second World War. In these studies, results were mixed. Some research indicated improved performance in groups (Abel, 1938; Mukerji, 1940) while other research indicated a decreased performance in groups (Taylor, Thompson, & Spassoff, 1937). Social psychology research saw a decrease in social facilitation research and an increased interest in conformity research (Sherif, 1935). This research focused on how behavior in groups can be shaped by participant interaction. Further research into social facilitation was sporadic, at best, until the early 1960s.

**Research Post 1960**

Zajonc (1965) reviewed the relevant literature on social facilitation to provide explanations for inconsistencies and to propose lines of thought to prompt further study in this area (Aiello & Douthitt, 2001; Guerin, 1993). By 1982, there were up to fifteen different theories to explain social facilitation (Guerin, 1993). Several categories for organizing the multitude of theories were proposed (Parks & Sanna, 1999; Geen, 1989; Guerin & Innes, 1984; Guerin, 1993). Guerin (1993) proposes three basic categories of social facilitation: drive theories, social conformity, and cognitive process. Parks and Sanna (1999) propose a similar set of three categories: drive theories, self-theories, and resource theories. The following will attempt to discuss the predominant social facilitation theories in the field today.
Drive theory. Zajonc (1965) proposes a theory to explain both increased and decreased performance. Zajonc’s drive theory proposes that in the case of well-learned tasks, the presence of others will invoke an increased drive to emit the dominant response. He proposes that for well-learned tasks, the dominant response will most likely be correct. For complex problems, or those that are not well learned, the dominant response will more likely be wrong and the participant will feel inhibited in a social context. Zajonc continues to explain drive theory by proposing the theory of mere presence.

Mere presence. Zajonc (1965; 1980) proposes that the mere presence of species mates produces social facilitation effects. Zajonc concludes that the actual presence of another (specifically a species mate) causes an increase in performance. Research conducted on mere presence was generally supportive of Zajonc’s proposal. Zajonc (Zajonc, Heingartner, & Herman, 1969) conducted an experiment with cockroaches to test the theory of mere presence. The research project placed cockroaches into a maze under two conditions: observed by fellow cockroaches and alone. The experiment also included a test for dominant and non-dominant responses in cockroaches. The research concluded that the cockroaches ran faster when observed by fellow cockroaches than when running alone. This was only true when the cockroaches were in a maze testing dominant response. In a non-dominant response maze, the cockroaches ran slower when observed by mates than when alone.

Subsequent research with humans (Schmitt, Gilovich, Goore, & Joseph, 1986) provides results similar to Zajonc’s findings. All drive theories focus on the impact of the presence of others, but the explanation regarding why this impact occurs differs. One of the problems with the theory of mere presence is Zajonc’s dependence upon arousal (the proposition that mere presence increases arousal in the presence of others and decreases arousal when alone). However, an increase in arousal can be seen by isolating an animal that is normally social or by putting a normally isolated animal in with other animals (Guerin, 1993). It can be argued that mere presence cannot solely explain social facilitation. In other words, fear and anxiety may be working in conjunction with mere presence to effect social facilitation. An alternate explanation may be that fear and anxiety are a part of mere presence. Other drive theories provide alternative explanations for why the presence of others affects social facilitation. These theories argue that mere presence alone is insufficient to explain increases in arousal. Two popular theories are evaluation apprehension and distraction.
**Evaluation apprehension.** Cottrell (1972) also challenged Zajonc’s drive theory. Cottrell believed that drive theory was insufficient to explain all social facilitation effects (Aiello & Douthitt, 2001). Cottrell (1968; 1972) proposes that social facilitation effect is an increase in learned drive rather than a generalized drive theory. Cottrell (1972) suggests that drive levels increase whenever participants are concerned about how others will evaluate their performance. This thought process links back to Dashielle’s (1930) examination of the influence of the audience and their opinions about the participants. One distinguishing factor between Cottrell’s research and Dashielle’s is that Cottrell proposes not only that evaluation anxiety increases drive, but that drive can also be learned and can influence future responses.

Evaluation apprehension proposes that the presence of others only affects performance because we have learned to associate that presence with reward and punishment (Parks & Sanna, 1999). This theory proposes that whether our performance increases or decreases is dependent on our prior experiences with similar situations. For instance, if in a similar instance an individual received a reward for increased performance, then one would expect that the individual’s performance would increase. If prior experience involved punishment, one would expect the performance would decrease. Therefore, it was the learned anticipation of the reward or punishment that was arousing.

In experimental studies testing this theory, it would be expected that social facilitation effects would only be found when an audience was present and that audience had the ability to evaluate the performance of the person observed. Cottrell’s (1968) initial experiments supported his hypothesis by demonstrating that audience presence increased drive response. The same year, Henchy and Glass (1968) tested a similar theory they called evaluation apprehension. Their research also supported an increased drive for audience versus alone conditions. The results of these experiments prompted researchers to begin searching for other explanations of how audience, groups, or individuals within a group can influence social facilitation effects.

**Monitoring.** The theory of monitoring and alertness helps to bridge the gap between human and animal research. A basic response to an encounter with another person (or animal) is to monitor that other for signs of aggression and possible physical threat. By monitoring others, we can potentially avoid physical threat or, at a minimum, be prepared to deal with the imminent threat. In humans, this monitoring behavior may have adapted to seeking cues for social interaction (i.e., talking) as well as threats (Guerin, 1993). These cues may take the form of
vocal, posture, gestures, or eye movements. This may be compounded if the other is an unfamiliar (Bronson, 1968). Rutter and Stephenson (1979) found that participants spent more time looking at strangers than friends or familiars. This may be due to the expectation that a friend’s behavior is more predictable than a stranger’s. This theory does not attempt to account for all mere presence effects but rather acknowledges that there may be other factors at work contributing to the mere presence phenomenon.

**Distraction.** Distraction theory proposes that the presence of others produces an attention conflict or distraction. Sanders et al. (1978) propose that this distraction results in social facilitation because individuals like to compare their performance to that of others or because they enjoy monitoring the audience’s response to their performance. He claims that comparison could only occur when the others present were performing the same task. If the tasks were identical, performance would increase; if the task were different, performance would decrease. The results of Sanders et al. (1978) defend these suppositions.

**Self-Theories**

Self-theories propose that the thoughts and feelings about yourself and others provide motivation (or lack of motivation) to increase performance when in the presence of others. Three self-theories that have garnered significant attention in research are self-attention, self-presentation, and self-efficacy.

**Self-attention.** According to self-attention, the presence of others increases our individual awareness of whether we are meeting behavior objectives. Under this theory, one would expect that increased self-awareness on simple tasks would increase performance because attention to our positive performance is enhanced. Self-awareness on difficult tasks would increase awareness of poor performance and impair performance. This is accomplished by focusing an individual’s attention on personal performance and beginning to view this performance as others would view it. If a person then falls short of the expected goal attainment, they will feel obligated to attend to the social norm of better performance. However, this doesn’t account for more recent research on goal attainment, which suggests that individuals may adjust their goals rather than try harder (Bandura, 1977; Harackiewicz, Sansone, & Manderlink, 1985).

**Self-presentation** proposes that the presence of another increases our concerns about whether we are presenting a favorable impression of ourselves. Under this theory, if increased perception of performance provides us an enhanced view of how others view us, it will increase
performance. If increased perception indicates that our performance is negatively affecting how others perceive us, performance will be impaired. A significant difference between self-presentation and self-attention is that self-presentation theory proposes that it is the context of the questions asked during the research study, rather than the simplicity or complexity of the questions, that makes a difference. For example, if subjects were answering a list of questions, lists containing predominantly simple questions would find increased performance for complex questions. A list that was predominantly complex would find decreased performance on the simple questions. Research conducted on self-presentation theory favors these results.

**Self-efficacy.** Self-efficacy theory proposes that task difficulty only affects social facilitation when it affects the individual’s belief about whether they will succeed or fail at the performed task. The theory of self-efficacy differs from self-presentation and self-attention in that self-efficacy is believed to work closely with outcome expectancy. According to this theory, if the individual has a high self-efficacy (positive belief that he/she can complete the task) combined with a high outcome expectancy (belief that they will be evaluated), then a positive evaluation would be expected. If the individual has a low self-efficacy and high outcome expectancy, then one would expect a negative evaluation. If the individual expects a negative evaluation, social facilitation will be impaired; if the individual anticipates a positive evaluation, social facilitation will increase.

**Diffusion of Social Facilitation Theories**

An issue facing anyone trying to outline the theory of social facilitation is the immense branching of theories to explain theories. Each of the three areas discussed above constitutes a new branch of social facilitation and each provides more theories to explain that single branch. The result is a social facilitation theory tree with endless branches. To cover each proposed theory for differing contexts of social facilitation would be difficult within a large volume. The larger number of theories presented makes it increasingly difficult to have one unifying theory. Few of the theories seek to encompass and explain one or more competing theories. It seems the challenge facing people interested in social facilitation is to find an overarching theory or paradigm that will pull each of these areas together into a unifying context.

**Related Research Outside the Social Sciences**

Psychosocial, behavioral, and technical aspects of groups have been studied by multiple fields throughout the years. Some of these fields include, but are not limited to, library and
information studies, computer science, distance learning, business, marketing, and communication. In this section, we will examine a few of these areas that, although not directly applied to social loafing, are related to group interaction and may increase our understanding of the complexity of group interactions. In addition, by examining other fields of study for group related research, we may discover similar or overlapping theories that lead to modification or expansion of current group theories.

**Library and Information Studies**

Social loafing is related to information studies by both theory and practice. Theoretically, social loafing and social facilitation are closely related to the study of human information behavior within information studies. Human information behavior covers several related areas of information research that includes problem solving, information seeking, distributed teams, information ground, digital collaboration, eLearning, socio-technical gap, life in the round, virtual worlds, collaboration, and social actors just to name a few.

**Human information behavior.** Human information behavior is considered to be a sub-field of Library and Information Science. Although Wilson (1981) is one of the first to be recognized for initiating the concept of information seeking behavior, researchers have been investigating various aspects of information behavior for over 50 years (Thórsteinsdóttir, 2001). Although information seeking has been generally recognized to be a dynamic and non-linear process, a large number of information seeking models address the problem of information seeking from the individual perspective (Hyldegard & Ingwersen, 2007). However, very few individuals actually seek information in a vacuum. Most individuals seek information in a group situation or are influenced by groups in which they maintain membership. In some cases, the individual is subjected to the opinions and interference of several groups. Although Hydegard and Ingwersen (2007) propose a model that incorporates group work process as an integral part of the information seeking process, the consideration of individual and group behavior affect upon the information seeking process is still found wanting.

Several information studies researchers (Chatman, 1999; Wilson, 1997; Thórsteinsdóttir, 2001; Haythornthwaite, 2006; Hyldegard, & Ingwersen, 2007) have acknowledged the existence of these individual behaviors and some even acknowledge that they may indeed affect the information seeking outcomes. However, only a few of these studies have extended their research to examine the environmental factors that may be present or factors that may serve as
antecedents to their development. In addition, little IS research has explored how these individual and group behaviors affect the information seeking process, to what degree, within which contexts, or environments they might exist. Lamb & Kling (2003) point out that exclusive focus on individual contexts reduces the effectiveness of ICT systems and minimizes the impact of organizational and other complex social environments. One exception to this is the growing body of LIS literature focusing on information sharing within digital communities.

Sarker (2005), for example, is investigating knowledge transfer between cross-cultural distributed teams. This research discusses the complications of sharing knowledge in communities of practice or formal work groups. Digital collaboration is a growing body of knowledge within the LIS community. Several LIS researchers have examined various aspects of digital collaboration. Unruh, Pettigrew, and Durrance, (2002) and Haythornthwaite (2006) are two examples of research into digital community information systems and facilitating collaboration in digital communities. Burnett and Buerkle (2004) go one step further by attempting to provide a framework for examining the range of activities undertaken by participants in virtual communities. Marty (2005) examines the opposite end of the digital spectrum by examining the socio-technical gap between practices that collaborative systems are designed to handle and the capabilities of the systems themselves.

Further problems exist in the current manipulations and growth of IS models even when considering the group context. For instance, in Hyldegard and Ingwersen’s research (2007), they take into account the environmental aspects of the group when examining Kahlthau’s information seeking model for applications to group information seeking. In the process, they also acknowledge environmental and social issues (e.g., Tuckman's model (1965) of group process). Kazmer (2005; 2010) examined group processes within online learning groups. Four areas of group process she has specifically studied are shared experiences, environment, group generated knowledge, and group departure. Thórsteinsdóttir (2001) examines the information-seeking behavior of distance learning students through group process. In particular, Thórsteinsdóttir explores the distance student’s information behavior patterns to be able to improve conditions for distance learners. According to Thórsteinsdóttir, gaining a deeper knowledge about the hindrances and problems distance learners face is key in understanding the information-seeking process. Fisher, Landry, and Naumer (2007) are also examining the group process via social spaces, casual interactions, and meaningful exchanges. They have introduced
the concept of ‘information ground’: an individual’s combined perceptions of place, people and information.

However, little consideration is given to the extensive work outside of information studies on task typology or individual/group behaviors influencing group process. Once again, it seems that although information science researchers acknowledge the richness that research outside of IS can provide to theory and model building within the IS discipline, resistance or lack of extensive research into other area disciplines directly related to group process are largely ignored. It is particularly important to acknowledge work on task typology and group process given that these issues can have definitive influence on the information seeking of both individuals within the group as well as the group’s acceptance of information sought outside the group’s frame of reference. However, there is a growing movement within LIS to highlight the importance of task complexity in information behavior. Hyldegard and Ingwersen (2007) are researching task complexity and information behavior in group based problem solving. In particular, they are exploring whether group information behavior differs from individual information seeking. Thórsteinsdóttir (2001) also highlights how the issues of information seeking are complicated by contextual (the work task) and social (group process) factors.

Wilson (1997) proposes an interdisciplinary model of information behavior rather than information seeking. His model recognizes information seeking as only one aspect of information behavior and acknowledges that information processing may change based on a number of factors that include intervening variables such as personal characteristics, emotional, educational, demographic, interpersonal, social, and environmental factors.

Sonnenwald (1999) extends Wilson’s work by acknowledging that the outside influence of other disciplines upon information science models add richness and detail to IS models. Sonnenwald (1999) proposes that human information behavior can be described as “the collaboration among an individual and information resources” (p.9). She further explains that many of these resources include other humans. In an earlier work (Sonnenwald, 1995), she proposes her concept of contested collaboration. She proposes a model of communication that acknowledges difficulties experienced by designers and developers of information systems when working in groups. According to her model, each participant must learn to appreciate the individualism of the other group participants in order to gain a better understanding of how the entire system will best serve the end user. Unfortunately, in the pursuit of understanding,
participants encounter difficulties communicating due to “differences in language, expectations, motivation, and perceptions of quality and success…” (Sonnenwald, 1995, p.873). These difficulties can lead to participants contesting or challenging each other’s contributions to the overall group effort. If group participants do not overcome these conflicts, it can lead to anger, animosity, and unwillingness to work together on future projects. Sonnenwald (1999) acknowledges the importance of examining the contributions of other disciplines when developing theoretical frameworks within information science. She personally acknowledges the contributions of communication, sociology, and psychology in the development of her human information behavior framework.

One final area within information studies that deserves particular acknowledgement in the study of group behaviors is the research on closed groups. Kerström (1988) studied the efforts that inmates in a Swedish prison expend in trying to identify and punish informants. Elfreda Chatman studied similar environments in her work on “life in the round.” This theory was developed from her study of the social world of women prisoners. A life in the round “requires a public form of life in which certain things are implicitly understood” (Chatman, 1999, p. 212). Its members are considered “insiders” who are largely unconcerned with events in the outside world as it has little bearing on the insiders’ isolated experience; what carries value is information that can be used within their small world. Social roles and group standards are created and upheld by inside members. What makes this research particularly important in the group research area is her examination of several antecedents to group behaviors such as roles and norms. Social science research on group roles and norms emphasize their importance in both group process and outcomes.

From this limited review of LIS literature, it becomes readily apparent that an interdisciplinary view of groups is a necessary component in any group research project. Following the lead of information science researchers and in line with human information behavior research, social loafing and social facilitation research can extend the understanding of how individual and group behaviors can influence the information seeking and information sharing within various contexts of groups. Studying social loafing and free riding in concert with disciplines such as computer mediated communication, information studies, online learning, communication, game theory, and business will help group researchers view groups from a 360 degree perspective rather than with the tunnel vision that exclusivity can provide.
Online Learning, CMC, and Humanities Research

Online learning literature has indicated the existence of both social and individual difficulties associated with the online environment (Ragoonaden & Bordeleau, 2000; Curtis, 2001; Ardichvili, Page, & Wentling, 2003; Forrest, & Miller, 2003; Naquin, & Tynan, 2003; Allen, & Hecht, 2004; Paulus, & Van der Zee, 2004; Gillespie, Rosamond, & Thomas, 2006) as well as several barriers to successful online learning that include isolation, communication, time zones, geographical separation, work schedules, and technological access (Mood, 1995). In their research, Muilenburg and Berge (2005) found eight main factors that provided barriers to successful online learning: (1) administrative issues, (2) social interaction, (3) academic skills, (4) technical skills, (5) learner motivation, (6) time and support for studies, (7) cost and access to the Internet, and (8) technical problems. Mungania (2003) identified seven similar factors involved in barriers to learning: (1) personal, (2) learning style, (3) instructional, (4) organizational, (5) situational, (6) content suitability, and (7) technological. In addition, Mungania identified four significant predictors to learning barriers: (1) organization type, (2) self-efficacy, (3) computer training, and (4) computer competence. Mungania noted that computer competence and self-efficacy were negatively correlated to barriers. Both Mungania (2003) and Muilenberg and Berge (2005) identified influential variables in barriers to e-learning. The overlapping variables were age, gender, ethnicity, marital status, and prior experience with e-learning.

These are all difficulties imposed upon students prior to the inclusion of group work. Group work requires increased time and dependence on others that is often in direct conflict with student perceptions of distance education and online learning. In fact, group work presents a set of problems for students that include, but are not limited to, non-contributing group members, unequal workload, scheduling, and personal/social conflicts between group members (Becker & Dwyer, 1998). However, this knowledge has not affected the desire of online instructors to include group projects within their online courses. Although distance education courses are increasingly incorporating various versions of cooperative and collaborative learning exercises, these group activities do not always meet with great student appeal or result in the higher learning expectations of the designers. It is not unusual to find that group work is often much more popular with teachers than with students (Mason, 1998).
Researchers working in Computer Mediated Communication (CMC) have focused extensively on how the medium impacts group effectiveness, communication, and outcomes. This research on virtual teams has spanned several other disciplines to include education, management, psychology, social psychology, CMC, instructional systems, and information studies. These disciplines have conducted research on group process (Siegel, Dubrovsky, Kiesler, & McGuire, 1986; Cohen & Bailey, 1997; Martins, Gilson, & Maynard, 2004), social interactions (Dubrovsky, Kiesler, & Sethna, 1991; Dennis, & Valacich, 1993; Collins & Berge, 1996; Nonnecke, & Preece, 1999; Postmes, Spears, Sakhel, & DeGroot, 2001; McKenna, & Green, 2002; Hirumi, 2002; Berge, 2002; Northrup, 2002; Bannan-Ritland, 2002; Nonnecke, & Preece, 2003; Forrest, & Miller, 2003; Topper, 2005; Schlosser, 2005; Finegold, & Cooke, 2006; Gillespie, Rosamond, & Thomas, 2006; Wanstreet, 2006), impact of media (Driskell, Radtke, & Salas, 2003; Martins, Gilson, & Maynard, 2004), collaboration (Dennis, & Valacich, 1993; Panitz, ND; Dillenbourg, Baker, Blaye, & O'Malley, 1996; Hiltz, 1998; Hiltz, Coppola, Rotter, & Turoff, 1999; Stacey, 1999; Olguin, Delgado, & Ricarte, 2000; Ragoonaden, & Bordeleau, 2000; Curtis, 2001; Hasler-Waters, & Napier, 2002; Neo, 2003; McInnerney, & Roberts, 2004; Graham, & Misanchuk, 2004; Jeong, 2005; Ke & Carr-Chellman, 2006; Haythornthwaite, 2006; Garrison, 2006; Swan, Shen, & Hiltz, 2006; Baglione, & Nastanski, 2007), learning (Johnson & Johnson, 1994; Johnson, Johnson, & Smith, 1998; Becker, & Dwyer, 1998; Gold, 2001; Graham, 2002; Jones, 2006), student satisfaction (Bacon, Stewart, & Silver, 1999; Hara, & Kling, 1999; Swan, 2001; Black, 2002; Thompson, & Coover, 2003; Smith, 2005; Drury, Kay, & Losberg, 2006; Gillespie, Rosamond, & Thomas, 2006), communication (Guadagno, & Cialdini, 2002; Schlosser, 2005; Maushak, & Ou, 2007), online communities (Garrison, Anderson, & Archer, 2000; Schoberth, Preece, & Heinzl, 2002; Rovai, 2001; Rovai, 2002; Lock, 2002; Ardichvili, Page, & Wentling, 2003; Shea, 2006), social identity (Lea & Spears, 2001; Sassenberg & Boos, 2003; Michinov, Michinov, & Toczek-Capelle, 2004), online learner characteristics (Dabbagh, 2007), and information/knowledge sharing (Wilson, 1978; Burnett, 2000; Sonnenwald, 2000; Thörsteinsdóttir, 2001; Lamb, & Kling, 2003; Cress, 2005; Haythornthwaite, 2006; Fisher, Landry, & Naumer, 2007; Haythornthwaite, Bruce, Andrews, Kazmer, Montague, & Preston, 2007; Kurzban, & Descioli, 2008).
Game Theory

Game theory is a relatively new discipline that attempts to apply mathematical properties to real world social interactions such as optimal pricing, jury selection, competitive bidding, politics, and battle strategies (Davis, 1983). Although the concept of game theory has been long recognized, the roots of game theory are generally credited to von Neumann and Morgenstern in 1944 after years of earlier research (Camerer, 2003). Years later, John Nash proposed a “solution” (Nash equilibrium) on how to determine how rational players would play during multiple iterations. The general idea behind the Nash equilibrium is that each player will continually adjust his/her strategy until it is no longer beneficial for either party to change strategies. The end result to this process is that each player is then selecting the best strategic response to all other players. In any social situation (game), the individuals (players) must make decisions on whether to compete or cooperate with the other players. Game theory assumes rational decision making on the part of the participants and solutions that range from simple to complex. Simple games are those involving two players where each individual’s goal is in direct opposition to their competitor. Complexity is added with the addition of players and mixed goals (competing and cooperating).

Game theory is an appropriate application for examining social loafing and free riding behaviors since the theory is in essence a decision making theory. Utilizing game theory, one can determine what decision is optimal based on the number of individuals involved, their motivations, and interests. The study of groups in the past has generally been via qualitative methods rather than quantitative. The power of game theory lies in its ability to provide some level of prediction of what moves the other player is likely to make and how those moves will impact the subsequent moves of all other players. The more information we have about the likely decisions of others within the group, the more likely we are to arrive at a decision that is most beneficial to ourselves. Application of game theory is also beneficial for those who are managing the groups within which these decisions are made. Lack of knowledge regarding how management decisions, rules, and regulations may influence the decision making process can result in defection rather than cooperation. Further study of games like the Prisoner’s Dilemma (Poundstone, 1992) and The Stag Hunt (Skyrms, 2004) can shed valuable light upon the decision making complexities of online groups and perhaps provide solutions that can be applied
by faculty and students alike. Further discussion of game theory and its potential applications will be found in Chapter 5.
CHAPTER 3

METHODOLOGY

Research Questions

The lack of research regarding social loafing and free riding in online learning groups has prompted me to conduct research that will hopefully contribute to the current literature base on social loafing by determining whether the perception of social loafing and free riding exists in the online learning environment. This research study will be an extension of previous research conducted with degree seeking graduate students at major universities and graduate level students at the Naval War College (Piezon & Ferree, 2008). This study sought to increase the understanding of social loafing phenomenon in the online learning group by determining whether or not the perception of social loafing exists in the online learning environment.

In the previous study, both study groups of graduate students indicated a perception of social loafing within their online learning groups. Of the 227 participants in this study, 35.7% reported a perception of other group members’ social loafing. The participants enrolled in a public university self-reported 16% social loafing. Participants enrolled in the Naval War College only self-reported 3% social loafing behavior. A significant correlation was found between several of the psychosocial factors. A negative correlation \(r = -0.168, N = 180, p < 0.05\) was found between task visibility and sucker effect. In addition, a positive correlation \(r = 0.438, N = 180, p < 0.01\) was found between task visibility and distributive justice. This suggests that as task visibility increases, avoidance of playing the sucker role will increase. It also suggests that as task visibility increases, so does the perception of the fair and equitable distribution of awards. The study also indicated a negative correlation \(r = -0.271, N = 180, p < 0.01\) between contribution and self-reported social loafing. In addition, there was a negative correlation \(r = -0.238, N = 180, p < 0.01\) between contribution and dominance. A negative correlation \(r = -0.265, N = 180, p < 0.01\) was demonstrated between distributive justice and self-reported social loafing. This correlation suggests that as positive perceptions of distributive justice increase, social loafing decreases. A significant correlation \(r = 0.780, N = 180, p < 0.01\) was also found between sucker effect and social loafing. These data suggest that as the perception of social loafing increases, so does the tendency of individuals to avoid playing the sucker role by reducing their individual effort. A negative correlation \(r = -0.168, N = 180, p < 0.05\) was found between sucker effect and
task visibility, indicating that as task visibility increases, instances of sucker role avoidance decreases. A positive correlation \((r = .517, N = 180, p < .01)\) was found between self-reported social loafing and dominance. This suggests that social loafing increases with the perception of group members’ display of dominant behaviors within the group. A positive correlation was also found between dominance and the sucker effect \((r = .625, N = 180, p < .01)\). This suggests that as the perception of dominance increases within the group, members will increase their efforts to avoid playing the sucker role by reducing or withholding effort.

This prior study provides evidence to suggest that the perception of social loafing exists in the online learning classroom. In addition, problems similar to those associated with social loafing in face-to-face classrooms are indicated. Since the distance learning environment also encompasses other potential problems for group activities (i.e., geographical distance, time zones, work schedules), social loafing issues appear to reduce the effectiveness of group work in the online classroom.

Based on the results of the Naval War College research and a literature review of group research, I have developed the following research questions:

**RQ1:** Does the perception of social loafing and free riding exist within online learning groups at the 2 year, 4 year, and graduate level?

**RQ2:** Are there statistically significant relationships among the 5 social loafing subscales: (1) social loafing self, (2) individual task visibility, (3) individual contribution, (4) distributive justice, and (5) dominance and aggression?

- **H\(_0\):** There will not be statistically significant relationships among the 5 social loafing subscales.
- **H\(_A\):** There will be statistically significant relationships among the 5 social loafing subscales.

**RQ3:** Are there statistically significant differences among the community college, undergraduate, graduate and Naval War College students on the 5 subscales of the Social Loafing Survey: (1) social loafing self, (2) individual task visibility, (3) individual contribution, (4) distributive justice, and (5) dominance and aggression?

- **H\(_0\):** There will not be statistically significant differences among the community college, undergraduate, graduate and Naval War College students on the 5 subscales of the Social Loafing Survey.
Hₐ: There will be statistically significant differences among the community college, undergraduate, graduate and Naval War College students on the 5 subscales of the Social Loafing Survey.

RQ4: Are the following subscales statistically significant predictors of the participants’ perceptions of individual social loafing: (1) individual task visibility, (2) individual contribution, (3) distributive justice, and (4) dominance and aggression?

H₀: Task visibility, individual contribution, distributive justice, and dominance and aggression will not be statistically significant predictors of the participants’ perceptions of individual social loafing.

Hₐ: Task visibility, individual contribution, distributive justice, dominance and aggression will be statistically significant predictors of the participants’ perceptions of individual social loafing.

**Overview of Past Research Methods**

There are only three main methods that have been used in past research on social loafing: surveys/questionnaires, interviews, and experimental. Karau & Williams (1993) conducted a meta-analysis of 78 social loafing studies. Prior to selecting the 78 articles analyzed, Karau & Williams identified 166 social loafing studies. Of these 166 studies, only 24 were conducted in a field setting. The remaining 142 were laboratory studies. Not surprisingly, 143 of the 166 were conducted with college students, 6 within organizations, and the remaining with K-12 students. These studies examined a wide variety of tasks (e.g., physical, cognitive, evaluative, and perceptual) and subject populations (Karau & Williams, 1993). Since 1993, the study of social loafing has changed very little. In a sample of 20 studies (see Table 1) conducted directly on social loafing since 1993, 16 were laboratory studies while only 4 utilized surveys or interviews.
Table 2

*Sample of Research Since 1993*

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<thead>
<tr>
<th>Research Study</th>
<th>Type of Method</th>
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<tr>
<td>Liden, Wayne, Jaworski, and Bennett (2004)</td>
<td>Survey &amp; Interview (field setting)</td>
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<tr>
<td>George (1995)</td>
<td>Survey &amp; Interview (field setting)</td>
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<tr>
<td>Murphy, Wayne, Liden, &amp; Erdogen (2003)</td>
<td>Survey &amp; Interview (field setting)</td>
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<td>Swain (1996)</td>
<td>Experimental &amp; Survey (field setting)</td>
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<td>Guerin (1999)</td>
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*Limitations and Strengths of Laboratory Experiments*

The preponderance of social loafing studies used experimental laboratory settings. This has been due to the expectation that each potential antecedent needed to be isolated and others controlled in order to discover to what degree each factor had in impact upon the occurrence, prevention, or mitigation of the social loafing behavior. Researchers have felt that unless strict control over experimental conditions was implemented, confounding factors would occur and it would not be possible to isolate any given factor as an influence on social loafing. This process allowed researchers to produce a number of factors (over time) that may influence social loafing. The downside to this approach is that researchers do not observe naturally occurring behavior but rather behavior that has been artificially induced. In addition, the large majority of these studies
employed college students with no prior interaction or incentive to perform. This scenario does not accurately match a naturally occurring workforce, which is normally comprised of formally constructed work groups that have been formed based on subject matter expertise, have a formal supervisor, and have definitive goals and deadlines. Although the current study does not utilize naturally occurring work groups in the work place, the conditions are similar in that students are placed into involuntary work groups that have definitive goals and deadlines. It could be presumed that these students groups also have a formal supervisor since the professor is relied upon to ultimately resolve any issues occurring within the group. In addition, the educational groups utilized in this study are comprised of individuals who do have real incentives to perform (e.g., grades). The only unaccountable issue with groups selected for this study compared with naturally occurring work groups is that most work groups are formed based upon specific combinations of subject matter expertise. Although some college professors make an attempt to form groups based on self-described expertise of their students, this is not a prerequisite for participation in this study.

**Selecting a Research Method**

Based on the above review of prior research on social loafing, two different methods were selected for this study: survey and interviews. These methods should garner a different perspective than previous research. As indicated previously, the majority of research conducted has utilized college students in laboratory settings. These studies have created an artificial environment in which to measure a psychosocial interaction. This artificially created environment cannot help but influence the observations and self-reports of social loafing. In these studies, the students had no real emotional or intellectual stakes in the outcome of the events. These emotional interactions may significantly influence the psychosocial aspects of social loafing behavior. Although college students comprise the majority of the participants in this study, each participant had an emotional stake in the outcome of the situations in which they were involved. The students selected for this study were all enrolled in a college course for credit. No interference in the natural occurrence of group interactions was implemented. In addition, volunteers for the study were only asked to volunteer once the group interaction and subsequent group project was complete and submitted. Therefore, all perceptions of social loafing behavior were considered in retrospect to a real environmental situation in which the student was personally engaged both emotionally and intellectually. Although previous research
has indicated issues with recall and influenced memory when relying on recalled information (Alaszewski, 2006), this should only be a minor consideration in this study since the survey and interviews were conducted within close proximity of the completion of the group project. The benefit to conducting the research upon completion rather than during the group activity is that it provides a cooling off time for highly emotionally charged situations and time for reflection without emotion. Although students may still possess strong emotions regarding the event, it is possible that they will be able to put the situation in perspective and provide a clearer picture of what transpired both leading up to critical events as well as afterwards.

**Mixed Methods**

The methods I employed to answer the research questions above come from both quantitative and qualitative inquiry. Denzin (1978) suggests the use of between-method triangulation, since the weaknesses and inherent biases of individual methods will be “canceled out when used in conjunction with other data sources, investigators, and methods” (p. 14). The research methods in this study include surveys and structured interviews. Although the primary method of exploration is quantitative in nature, a qualitative research method is employed to confirm quantitative data as well as to gather additional data that quantitative method alone may not reveal. Mathison (1988) suggests that utilizing triangulation to “arrive at a single proposition about a social phenomenon is a phantom image” and suggests that instead, the researcher may end up with data that is inconsistent and contradictory (p. 17). Mathison (1988) further suggests it is the responsibility of the researcher to “make sense of what we find” by applying “a holistic understanding of the specific situation and general background knowledge” to construct “plausible explanations about the phenomena being studied” (p. 17). It is with these thoughts in mind that employ the mixed method approach in my study of the social loafing phenomena. The following describes and outlines the methods I use to explore social loafing in online learning groups.

**Quantitative Method**

The quantitative method of inquiry for this study relies upon a web-based survey, which was developed for electronic administration to a convenience sample of students in online 2 year, 4 year, and graduate level courses. Prior to describing the web-based survey used in this study, we will examine how surveys have been used historically in research on social loafing.
Social loafing surveys. Surveys and interviews have been used primarily in field settings as supplemental information or replacement for an inability to observe actual group interactions. One exception to this was a study conducted by Swain (1996). The study was primarily experimental in nature but also employed questionnaires. In this case, the questionnaire administered was the Task and Ego Orientations in Sport Questionnaire (TEOSQ) and “was designed to measure an individual’s proneness to be task- or ego-involved in sport” (p. 339, Duda, 1992 as cited in Swain, 1996). This differed from survey or questionnaire use in other studies. These studies administered surveys or questionnaires in order to collect data on either self-reported or observed behaviors related to social loafing.

Participants. The participants were a convenience sample selected from online 2 year, 4 year, and graduate level courses at major universities. All selected courses included at least one major group project.

Procedure. All participants were enrolled in an online course where they participated in a group project as part of the course. Group members were either self-selected or assigned by the instructor. Group size ranged from two to nine members. Since participants were recruited from several online courses, the complexity of the group assignment varies across the courses. Although some courses may require more than one group project within the course, each of the participants completed the survey based upon their most recent group project. At the conclusion of their project, each group member was asked to complete the web-based survey, which consisted of 43 items and allowed students to start and stop the survey at will while storing their results. Students had the option to complete the survey at more than one opportunity to encourage a higher completion rate. In other words, if a student ran out of time or stopped the survey prior to answering all of the survey questions, they were able to re-enter the survey at a later time and complete the survey. If participants had completed the survey at a prior time and attempt to complete a new survey, they received an electronic notification that they had previously completed the survey and that the survey cannot be completed a second time. The survey measured the following seven psycho-social factors: (1) perceived group member loafing, (2) perceived individual loafing, (3) individual task visibility, (4) individual contribution, (5) distributive justice, (6) sucker effect, and (7) dominance and aggression.

Perceived group member loafing. Perceived social loafing refers to the extent that group members believe that other group members are engaging in social loafing (Comer, 1995).
It is important to note that each group member can only perceive what other group members are doing for project contribution. One member may struggle with the assigned concept, spend many hours of individual effort, actually learn a great deal and yet contribute less than others to the group output. Research concludes that group members will base their actions on the perceived actions of their fellow group members whether or not they are actually occurring (Mulvey & Klein, 1998). The mere perception of social loafing, whether accurate or not, may result in negative effects on group members’ motivation and result in social loafing (Mulvey & Klein, 1998). Therefore, real group work and learning may occur, but members of the group perceive unequal effort. Once members of a group perceive that some group members may be either taking over the project or stepping back from the project, it may affect their personal contributions.

This measure assesses the group members’ perception of loafing in groups. The scale asks participants to indicate their perception of how many of their group members possess the characteristics listed in ten statements, which are adapted from George (1992):

1. Deferred responsibilities he or she should assume to other students.
2. Put forth less effort on the project when other students were around to do the work.
3. Did not do his or her fair share of the work.
4. Spent less time working on the project if other students were available to work on the project.
5. Put forth less effort than other members of his or her group.
6. Avoided performing additional tasks as much as possible.
7. Left work for other group members that he or she should really complete.
8. Took it easy and let other students do the work.
9. Deferred group work to other students.
10. Was less likely to volunteer for tasks if another student was available to complete the task.

**Perceived individual loafing.** Individual perception of social loafing may be impacted by several factors that include but are not limited to perceptions of other group member loafing, perceived inequities, and whether their contributions are necessary for project success. Research suggests that individuals may seek to restore the actual equity, or if unable, will seek to restore psychological equity (Walster, Berscheid & Walster, 1973). The individual may attempt to
restore actual equity by reducing or increasing inputs, raising individual outcomes, or even by more manipulative means such as theft or sabotage. It is important to note that if individuals perceive they are leveling the playing field by restoring equity in the relationship, they may perceive their behavior as justified. Examining self-perceptions of social loafing is further complicated by research that suggests some participants may be unwilling to report or (in some cases) are completely unaware they are engaging in social loafing behaviors (Karau & Williams, 1993). Therefore, direct inquiry regarding whether or not an individual has engaged in (or is currently engaging in) social loafing may result in erroneous information. One method of garnering this information is to develop questions that reveal the behaviors individuals engage in when succumbing to social loafing.

This measure assesses the group members’ personal perception of their own social loafing. The scale asks participants to indicate their agreement with ten statements about their personal behavior using a five-point Likert scale. These ten statements are adapted from George (1992):

1. Deferred responsibilities he or she should assume to other students.
2. Put forth less effort on the project when other students were around to do the work.
3. Did not do his or her fair share of the work.
4. Spent less time working on the project if other students were available to work on the project.
5. Put forth less effort than other members of his or her group.
6. Avoided performing additional tasks as much as possible.
7. Left work for other group members that he or she should really complete.
8. Took it easy and let other students do the work.
9. Deferred group work to other students.
10. Was less likely to volunteer for tasks if another student was available to complete the task.

**Task visibility.** Kidwell and Bennett (1993) have defined *task visibility* as the belief that a supervisor is observing one’s individual efforts. If an individual perceives that their individual efforts are not identifiable by their supervisor, they may decrease3 individual contributions and rely on the contributions of others to compensate. In education, unless instructor oversight is
designed into class group projects, individual perceptions of social loafing may increase. Task visibility is also reduced in group work when individual contributions become indistinguishable from the collective effort. If the instructor is unaware of individual group members’ contributions, students will experience a reduction in the incentive to give their best effort. When designing projects one must acknowledge that the more task interdependent the group work becomes, the more difficult it becomes to monitor the individual contribution of team members (Jones, 1984). When individual contributions are indistinguishable from the collective, individuals are no longer able to demonstrate their personal contributions and claim the benefits associated with these contributions (Jones, 1984). For students who participate fully, this can be a large source of dissatisfaction.

At the other end of the spectrum are individuals who do not contribute adequately to the group effort but do not suffer appropriate retribution. This group of students usually reaps the grade benefits of the group although they have cheated themselves out of a learning opportunity. In some cases, those who do not fully contribute (e.g., because of large group size) may not participate because they perceive that their work is not critical or even important for the group project’s overall success. Instead, may perceive an inequitable relationship (Walster, Berscheid, & Walster, 1973), or they are free riding. Free riding occurs when an individual does not bear a proportional amount of the work and yet shares the benefits of the group (Albanese & Van Fleet, 1985; Jones, 1984). If group members develop the perception that their work is not critical for group success, they may withhold individual effort from the group, thereby reducing overall group productivity (Karau & Williams, 1993).

This measure assesses the group members’ perception of individual task visibility throughout the assignment. Group members are asked to indicate their agreement with seven statements regarding task visibility using a five-point Likert scale. These seven statements are adapted from George (1992):

1. My instructor was generally aware of when a student was putting forth below average effort.
2. My instructor was aware of the amount of work I do.
3. It is generally hard for my instructor to figure out how hard I am working.
4. My instructor usually notices when a student is slacking off.
5. It is difficult for my instructor to determine how hard we are working.
6. It is hard for my instructor to determine how much effort I exert on the group project.
7. Other group members were aware of how much effort I was contributing to the group project.

**Contribution.** Another antecedent to social loafing is the expected level of individual contribution to the overall group task. Karau and Williams (1993) suggest that individuals will be unlikely to exert extraordinary effort unless they view their individual task within the group project as meaningful. Identifying and assigning an easy task to a student will likely prejudice the student into believing that full effort is not required. Individuals will often withhold effort, seek to achieve personal rewards, and calculate ways to maximize benefits as long as they perceive that doing so will not affect their outcomes (Liden et al., 2004). Once again, reducing a student’s contribution to an unidentifiable piece of a project will negatively affect the desire of the contributor to do their best. If the individual effort becomes highly integrated into the group effort and rewards allocated accordingly, motivation may also suffer (Lawler, 1971). This measure assesses the group members’ perceptions of individual contributions to the group. Group members are asked to indicate their agreement with three statements regarding individual contributions using a five-point Likert scale. These three statements are adapted from George (1992):

1. I think that I made a unique contribution to the success of our group.
2. How I perform my job is important for the group.
3. The success of the project hinged on students like myself.

**Distributive justice.** Distributive justice is how an individual perceives the distribution of rewards or compensation among group members. The perceived fairness of the procedures and policies associated with distributive justice is termed *procedural justice*. Individual task achievement, when participating in group activities, can be impacted by a student’s perception of the procedural and distributive justice established by administration or an instructor. Kidwell and Bennett (1993) propose that an individual might alter their work effort if there is a perception of unfair distribution of rewards.

Research indicates that there is a significant correlation between procedural justice and social loafing; an individual’s perception of the fairness in distribution procedures may influence that person’s effort on group projects (Karau and Williams, 1993; Liden et al., 2004). A large
body of research on equity theory supports these assumptions (Adams & Rosenbaum, 1962; Leventhal et al., 1969; Leventhal & Bergman, 1969).

Equity theory proposes that individuals will continually seek equitable relationships. If an individual discovers that a particular situation is inequitable, he or she will experience stress. Individuals will attempt to alleviate this stress by attempting to restore equity to the relationship. Research suggests that individuals may seek to restore the actual equity, or, if unable to do so, will seek to restore psychological equity (Walster, Berscheid, & Walster, 1973). The individual may attempt to restore actual equity by reducing or increasing inputs, raising individual outcomes, or even by more manipulative means such as theft or sabotage. Individuals may attempt to restore psychological equity by denigrating the position of others or distorting the perception of others’ inputs and outputs. Negative aspects of this behavior can appear as negative comments and opinions of others and justification of poor opinions and treatment (Walster, Berscheid, & Walster, 1973).

This measure assesses group members’ perceptions of distributive justice. Group members are asked to indicate their agreement with three statements regarding individual contributions using a five-point Likert scale. These statements are adapted from Welbourne, Balkin, & Gomez-Mejia, (1995):

1. My instructor was fair in rewarding my work considering the amount of effort I put into the work.
2. Grades for individual group members were fair based on individual contributions.
3. I was treated fairly by the instructor regarding decisions made about my work/grades.

Sucker effect. The act of group members carrying a free rider or social loafer has been termed playing the sucker role. Avoiding playing the sucker role by reducing one’s individual effort has been termed the sucker effect (Kerr, 1983). Evidence for the sucker effect was supported in research by participants who were led to believe that their partner, who had the ability to perform, was failing to do so (Kerr, 1983; Williams & Karau, 1991). These individuals subsequently reduced their individual efforts and performance.

There are numerous references in the social psychological literature to support the notion that individuals tailor their personal behavior in light of their personal interactions and individual perceptions (Plaks & Higgins, 2000). In fact, research into stereotyping has revealed that group members may adjust individual behaviors in response to perceived stereotypes of fellow group
members (Plaks & Higgins, 2000). Research findings suggest that, regardless of whether a task is interpersonal or individual, individuals seek to optimize their effort by accounting for contextual factors, whether perceived or actual (Plaks & Higgins, 2000).

This measure assesses group members’ perceptions of increasing individual contributions to compensate for other members’ decreased contributions. Group members are asked to indicate their agreement with four statements regarding individual participation in the sucker effect using a five-point Likert scale. These statements are adapted from Mulvey & Klein (1998):

1. Was less likely to volunteer for tasks if another student was available to complete the task.
2. Because some group members were not trying as hard as they could, one or more of my group members invested more effort.
3. Because other group members were not contributing as much as they could, I did not try my best on the project.
4. Because the other group members were not contributing as much as they could, I increased my effort on the project.

**Dominance.** In any group project, personalities of participants should be part of the design considerations. Without any restrictions in project design, it can be expected that stronger personality types will naturally move into positions where they are most comfortable. Problems exist when any individual inappropriately uses their position, status, or strong personality to dominate, intimidate, or harass fellow group members. The impact of this behavior on more reserved members can be a decrease in participation due to a feeling of intimidation (Michaelsen, Fink, & Knight, 1997). Palloff and Pratt (2003) suggest that rude or angry personal attacks on a classmate can have a negative impact on group dynamics in that the students report feeling unsafe, insecure, and inhibited in expressing their personal feelings and beliefs. These feelings of intimidation, insecurity, and inhibition may lead to an increase in social loafing behavior.

This measure assesses group members’ perceptions of group member dominant behavior. Due to a lack of appropriately worded survey questions regarding dominance and aggression in previous research that I examined, the following questions were written without reference to previously employed survey questions. Group members indicate their agreement with three statements regarding individual perception of group member dominance using a five-point Likert scale:
1. When my group had an assertive/dominant group member, I was more likely to put less effort into the group work.
2. Assertive/dominant group members intimidate me and cause me to defer tasks (for which I was responsible) to other group members.
3. Assertive/dominant group members sometimes intimidate other group members and cause them to reduce their group input.

**Limitations and Strengths of Surveys in Field Research**

The few surveys conducted in field settings have proven to be a fairly effective measure of social loafing in naturally occurring work groups. The strength of these measures is that they are able to measure more than one factor at a time – in real time, in real work groups. Prior to field research, these factors had been studied in isolation within the laboratory using ad-hoc groups comprised of university students. Fieldwork allows data collection from real work groups with real work issues. In addition, surveys allow reflection on group activities, events, and behaviors that may not otherwise be captured in the laboratory.

Limitations of these studies included a cross-sectional rather than longitudinal analysis of data. This can be due largely to the inability to get approval for long-term research projects within active organizations. In addition, in today’s workplace, many work groups are flexible and short-term in nature. In other words, groups may be formed of a number of experts to resolve a specific problem and subsequently disbanded when the problem is resolved. Work groups that are more long-term in nature have limitations regarding behavioral norms that have been established through continued exposure and previous experience with problems. In order to effectively study social loafing in the workplace, researchers would need access to novice teams and the ability to observe and collect data over an extended period of time. This would allow researchers to analyze what factors influence the development of various behaviors and whether particular events or environments are enhancing or inhibiting the process. Getting this level of approval and access to intact work teams is extremely difficult and perhaps detrimental to the careers of faculty researchers. The pace at which faculty are expected to publish inhibits the involvement in long-term research projects that require substantial commitment in time and effort. Therefore, it is doubtful that we will see a resolution to research limitations on real work groups.
Qualitative Method

The qualitative method chosen for this research study was the structured interview. Structured interviews allow participants the opportunity to provide more in-depth explanations and additional thoughts that may not have been addressed in the survey. In addition, they allow participants an opportunity to express their thoughts and opinions that they may find embarrassing or intimidating.

Structured Interviews

Three previous studies in the research review included the use of interviews (George, 1995; Murphy, Wayne, Liden, & Erdogen, 2003; and Liden, Wayne, Jaworski, & Bennett, 2004). George (1995) used interviews to talk with managers about their ability to rate their salespeople on their degree of social loafing in sales groups. Each supervisor was provided with a questionnaire that included a 10-item social loafing scale that they subsequently mailed back to the researcher. There was no detailed information on how the interviews were conducted, how long interviews lasted, interview protocol, or whether the interview data were collected and analyzed.

In the study conducted by Murphy et al. (2003), the questionnaire included several scales for measuring justice, exchange, task visibility, affectivity, and social loafing. No information was provided on the interviews conducted other than the fact that “the supervisor interview assessed each employee’s social loafing as well as supervisor demographics” (p. 71). It does not appear that any interview protocol was used nor data collected from the interviews since no further mention of the interviews appear in the research paper.

Slightly more detail was provided regarding interviews in the study by Liden et al. (2004). This research indicated that “managers were interviewed regarding employee performance, organizational citizenship behavior (OCB), social loafing, and group size” (p. 292). The researchers indicated that managers participated in close-ended, structured interviews that were scheduled over a two day period. Employees were asked to complete a questionnaire that included scales to measure “task interdependence, task visibility, distributive justice, procedural justice, cohesiveness, and perceived co-worker loafing” (p. 292). Although the data from the questionnaires were analyzed and reported, no further discussion of interviews was included. Once again, it appears that the interviews were not analyzed.
Structured interviews were conducted in this study to determine whether additional data might be gathered that were unavailable from the surveys. It is possible that the survey may limit spontaneous information from participants. Kvale (1996) defines a qualitative research interview as an attempt “to understand the world from the subjects’ point of view, to unfold the meaning of peoples’ experiences, to uncover their lived world prior to scientific explanations” (p. 1). Kvale (1996) further describes the interview as a conversation and the researcher as a miner who digs beneath the surface to unearth valuable experiences and information. Interviews may allow participants an opportunity to volunteer information that may not otherwise be available.

Participant selection. Interview participants were selected from a convenience sample of online learning courses at both the undergraduate and graduate levels from two-year and four-year colleges. The participants were selected to participate in one-on-one individual interviews. Targeted participants were students enrolled in online courses in an interdisciplinary program that places a high value on online learning groups. There was not a preconceived or targeted number of interviews since interviews were conducted to the point of saturation.

Research setting. The participants were enrolled in an interdisciplinary program at a two-year or four-year university undergraduate or graduate program. The targeted courses were online learning courses at the undergraduate and graduate level. The courses met synchronously or asynchronously. Groups were expected to meet at least once per week (virtually or face-to-face) in addition to the weekly class meeting. Students enrolled in the courses participated in at least one major group activity during the course. If more than one group project was required during the course, participants were directed to reference their most recent group experiences for the purpose of this research.

Interview protocol. An interview protocol (Appendix D) was developed to ensure consistency throughout the process. Interview questions were structured to encourage participants to discuss both positive and negative aspects of their online group experiences. The underlying purpose of the interview process was (1) to provide insight into group experiences that survey respondents reported, and (2) to reveal previously undisclosed information, relationships, and inter-relationships. Specific care was taken to ensure that participants were not led to believe the interviewer was only interested in the negative aspects but rather to allow the discussion to develop naturally.
A naturalist approach to participant selection was appropriate for this portion of the study. The naturalist approach allows a more inductive rather than deductive approach to the research data. Each participant’s story is valued in its own right, rather than being taken as representative of a larger sample. The naturalist perspective encourages identification of individuals or group members that will be the most likely to provide the richest data set for the topic of the study (Alaszewski, 2006). For this study, I was interested in capturing rich descriptions of both positive and negative group processes. Therefore, it was imperative to recruit participants who were in an environment that would provide access to such a rich data set.

**Interview software.** In the event that interview participants were unable to meet face-to-face, interviews were conducted using and Internet voice software program called Skype. This electronic online platform was selected due to the geographical location of participants, which may prohibit face-to-face interviews and focus groups. Skype is a free software application (downloaded via the Internet) that allows users to send and receive voice calls via the Internet. Calls can be made to other Skype customers for free or to cellular and land lines for a fee. For fee-based calls, Skype uses a debit-based payment system where users buy credits that are stored in their accounts. The account is debited each time the user calls someone outside the Skype network. Skype was chosen as the voice platform for this research due to its flexibility and unique add-ons not available in other programs. Skype accounts include the ability to text chat, conference call, instant messaging, and voice calls just to name a few. In addition, both fee and free programs can be downloaded as add-ons to the basic Skype program. Of these programs, two were selected for use within this research study: Vodburner and Callburner. Vodburner and Callburner allow the user to record both video and audio respectively. Both of the programs are fee-based at a reasonable rate of a one-time fee of less than $50 (fifty dollars). The Vodburner program was downloaded primarily for use in conference calling for multiple participants.

Skype is a robust platform that relies on background processing on the users’ system. Skype calls are predominantly clear and easily recorded using the Callburner software which runs seamlessly in the background during the voice call. However, due to limitations of the Internet on which it is based, problems affecting connectivity and reliability of Internet service (e.g., weather and bandwidth) can significantly impact the quality of service. The main limitation to using synchronous online communication rather than face-to-face interviews is the
lack of facial expressions or body posture that may lead to additional questions or prompting by the interviewer.

**Limitations and strengths of interviews in previous research.** It appears that even though social loafing researchers are attempting to include a qualitative aspect to their research, interviews are largely ignored after they are conducted. Few studies provide any information regarding the type of interview used, and the information provided was insufficient to replicate the research. In addition, interview protocols are time consuming to develop as well as conduct. It seems frivolous to spend time developing an interview protocol, schedule, and conduct interviews if the data collected are never analyzed. The interviews subsequently become nothing more than incidental conversations with targeted individuals.

There have been studies conducted implementing extensive use of focus groups and interviews that have yielded interesting data for analysis in the social loafing realm (e.g., Colbeck, Campbell, & Bjorklund, 2000; Gillespie, Rosamond, & Thomas, 2006). Although these studies were developed to study group interactions at a more general level, aspects of social loafing were discovered via interviews. The major difference between these articles and the social loafing studies is that these two studies were primarily qualitative in nature, with the result that they provide much more information regarding the qualitative methods employed. For instance, Gillespie et al. (2006) outlines the use of both focus groups and individual interviews. Information is provided regarding times allocated, protocol, structure, flexibility, and how data are recorded. In addition, they provide detail regarding how the data were transcribed, analyzed, type of theory applied, software utilized, process, and results of analysis.

The study completed by Colbeck et al. (2000) is not as detailed as the Gillespie et al. (2006) study. However, it is more detailed than the social loafing studies. Colbeck et al. (2000) describe and provide examples of questions asked during the interviews and focus groups, structure, coding, data collection, process for identifying themes, and process of hypotheses development, and the results of analysis. Although these details remain insufficient for replication, providing the additional information aids others in developing similar studies to uncover data that would otherwise be inaccessible to researchers.

Although qualitative methods have been infrequently applied in past research on social loafing, there is much to be valued in the approach. Conducting more qualitative studies may
provide researchers with factors and influences that may have otherwise gone unnoticed and ignored in the literature.

**Research Analysis**

**Quantitative Analysis**

The quantitative method used in this study is the survey method. Statistical analysis conducted on the survey data includes descriptive statistics, correlation, ANOVA, MANOVA, and multiple regression. These analyses determine whether the perception of social loafing exists in the online learning settings being studied, to what degree, and how it compares to social loafing in the face-to-face environment. By employing correlation, we can determine whether there are positive or negative correlations between the social loafing antecedents and between the antecedents and the perception of social loafing. Finally, utilizing linear regression, we can determine the strength of relationships between the study variables and then use the models to predict future relationships in unknown conditions. In the study of social loafing, researchers are called upon to test the validity or falsity of hypothesized relationships. Although some of the frequently studied antecedents to social loafing are described earlier in this dissertation, there are many other factors that have yet to be thoroughly examined regarding their relationship (if any) to social loafing. Utilization of multiple regression in this study will assist in identifying what models (or combination of factors) may influence the perception of social loafing within the group context.

**Qualitative Analysis**

Although this research project employed a quantitative method as the primary data collection method, individual interviews provided opportunities to discover information via qualitative analysis that shed additional light on the quantitative data and subsequent analysis. Although the survey allowed participants an opportunity to add any information they felt might be relevant to the study, it is possible participants may reveal additional information upon request in an informal interview. In addition, there may be issues that participants feel are relevant but that they may not reveal unless they are emotionally involved in a discussion. Often, these emotions can prompt participants to reveal information that they either initially had not thought of, felt was not important enough to mention previously, or were too embarrassed to share until they discovered their feeling were shared by others.
Limitations of Research Methods

Issues pertaining to sample selection (Wright, 2005) and differences in online group activities and survey questions (Wright, 2005) may limit the current study. First, although the study sample may reflect a larger population of online or distance learners, generalization may not be possible due to limitations of course availability, researcher contacts, and respondent availability. During the interviews and focus groups specific care must be taken to ensure that participants are not led to believe the interviewer is only interested in the negative aspects, but rather that the discussion develops naturally. Otherwise, the interviewer can heavily influence the outcome and content of interviews and focus groups. Interview, survey, and questionnaire research approaches are all limited by memory and recall problems. Other limitations include the inability to manipulate group activity for consistency or to randomly assign students to groups. However, the main expected critique for this type of study is the perceived subjectivity of coding qualitative material and the influence of the interviewers and observers by mere presence.

Another potential problem, as noted by Morgan (1997) involves logistical issues surrounding interviews. For instance, participants may not have access to reliable transportation to the research location or could encounter other obligations that interfere with scheduling. In addition, participant recruitment (both participant and faculty) may influence variability among interview participants. It is often difficult to find faculty members willing to participate in research studies that aren’t their own. These problems arise from lack of interest, concerns over human subjects and IRB approval, and fear of negative student end-of-course reviews (since these can impact tenure in many cases). It is also difficult to find willing participants in a qualitative study (or a quantitative study, for that matter). This problem has been noted previously in IS research by Toms & Duff (2002), who had substantial problems recruiting and noted that it took eleven months to recruit eleven individuals. Problems with recruitment may result from an overwhelming number of requests to participate in research studies and the immense time and commitment involved in a semester-long study. Students may not feel the cost-benefit ratio is in their best interest and may need to be encouraged with either course credit or monetary incentives.

Other challenges may involve the selection of qualitative methods for studying an electronic environment (Bianco & Carr-Chellman, 2002) or ability and skill of interviewers to
effectively keep participants on task and not influence an artificial reproduction of events (Morgan, 1997). These authors bring up important points such as whether e-presence can gain as much fidelity as can be gained by qualitative research as described by researches such as Denzin and Lincoln, 1998; Wolcott, 2001; and Lincoln & Guba, 2000. These authors emphasize the importance of being in the field, observing behavior and environment. Some may challenge the efficacy of attempting qualitative research into group behaviors in an online environment.
CHAPTER 4

RESULTS

Both quantitative and qualitative analyses were performed on the research data collected. Three hundred and forty-three students were recruited to participate in the web-based survey. In addition, 28 students were recruited to participate in individual interviews. The data will be presented in two separate sections: quantitative and qualitative in order to clearly define data collection procedures and type of data presented.

**Quantitative Result**

**Descriptive Statistics for Participant Demographics**

Three hundred and forty-three students were recruited from a convenience sample of online learning courses at both the undergraduate and graduate levels from two-year and four-year colleges and the Naval War College. The Naval War College data was from the previous study (Piezon & Ferree, 2008) that this study extends. The descriptive statistics for participant demographics are listed in Table 3. The students were split into 4 educational categories: 138 (40.2%) Naval War College, 96 (28.0%) community college, 73 (21.3%) undergraduate and 36 (10.5%) graduate. Two hundred and twenty-two (64.7%) of the participants were female, and 121 (35.3%) were male. Approximately half (168, 49.3%) of the participants were under 30 years of age. The participants’ ethnicity was reported as follows: 263 (77.4%) Caucasian, 37 (10.9%) African American, 17 (5.0%) Other, 15 (4.4%) Hispanic/Latino, 4 (1.2%) American Indian/Alaska Native and 4 (1.2%) Asian.
Table 3  
**Descriptive Statistics for the Participants' Demographics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community College</td>
<td>96</td>
<td>28.0</td>
</tr>
<tr>
<td>Graduate</td>
<td>36</td>
<td>10.5</td>
</tr>
<tr>
<td>Naval War College</td>
<td>138</td>
<td>40.2</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>73</td>
<td>21.3</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>222</td>
<td>64.7</td>
</tr>
<tr>
<td>Male</td>
<td>121</td>
<td>35.3</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 20 years</td>
<td>25</td>
<td>7.3</td>
</tr>
<tr>
<td>20 to 30 years</td>
<td>143</td>
<td>41.9</td>
</tr>
<tr>
<td>30 to 40 years</td>
<td>83</td>
<td>24.3</td>
</tr>
<tr>
<td>40 or more years</td>
<td>90</td>
<td>26.4</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>37</td>
<td>10.9</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>4</td>
<td>1.2</td>
</tr>
<tr>
<td>Asian</td>
<td>4</td>
<td>1.2</td>
</tr>
<tr>
<td>Caucasian</td>
<td>263</td>
<td>77.4</td>
</tr>
</tbody>
</table>

**Inferential Statistics Limitation of Survey**

The Social Loafing of Others scale was removed from the inferential statistics because the integrity of the scale was questionable. Many participants listed inappropriate or illogical responses to the items from this scale. Examples included reports of loafing that exceeded the number of individuals in the group (e.g., 5 loafers in a group of 3), indications of no group membership (e.g., not actually a group), exclusion of self in group size reports, and listing several responses for an item. Thus, the validity and reliability of the scale was not adequate for inferential parametric statistics.

**Hypothesis Testing**

**Research question 1.** Does the perception of social loafing and free riding exist within online learning groups at the 2 year, 4 year, and graduate level? The survey included a subscale that queried whether participants perceived that one or more of their fellow group members were engaged in social loafing behaviors. On average, participants perceived that 24% of the fellow
group members were engaged in social loafing behaviors (Table 4). Descriptive statistics for the Perceived Group Member Loafing subscale items were conducted to examine perceptions on individual subscale items (Table 5). Participants perceived that an average of 28% of their fellow group members deferred responsibilities they should have assumed to other students within the group. In addition, participants perceived that approximately 27% of their fellow group members put forth less effort than other group members and were less likely to volunteer to complete tasks if another student was available to complete the task. These results indicate that the perception of social loafing does exist within online learning groups.

Table 4

*Descriptive Statistics for Perceived Group Member Loafing Subscale*

<table>
<thead>
<tr>
<th>Item</th>
<th>n</th>
<th>Min.</th>
<th>Max.</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students in Group (including respondent)</td>
<td>361</td>
<td>1.00</td>
<td>8.00</td>
<td>4.61</td>
<td>2.72</td>
</tr>
<tr>
<td>Group Level Social Loafing</td>
<td>342</td>
<td>0.00</td>
<td>9.00</td>
<td>0.87</td>
<td>1.36</td>
</tr>
</tbody>
</table>
Table 5

*Descriptive Statistics for Perceived Group Member Loafing Items*

<table>
<thead>
<tr>
<th>Item</th>
<th>n</th>
<th>Min.</th>
<th>Max.</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deferred responsibilities he or she should assume to other students.</td>
<td>358</td>
<td>0.00</td>
<td>10.00</td>
<td>1.07</td>
<td>1.75</td>
</tr>
<tr>
<td>Put forth less effort on the project when other students were around to do the work.</td>
<td>358</td>
<td>0.00</td>
<td>10.00</td>
<td>0.97</td>
<td>1.60</td>
</tr>
<tr>
<td>Did not do his or her fair share of the work.</td>
<td>358</td>
<td>0.00</td>
<td>10.00</td>
<td>0.94</td>
<td>1.71</td>
</tr>
<tr>
<td>Spent less time working on the project if other students were available to work on the project.</td>
<td>358</td>
<td>0.00</td>
<td>10.00</td>
<td>0.91</td>
<td>1.59</td>
</tr>
<tr>
<td>Put forth less effort than other members of his or her group.</td>
<td>355</td>
<td>0.00</td>
<td>10.00</td>
<td>0.97</td>
<td>1.59</td>
</tr>
<tr>
<td>Avoided performing additional tasks as much as possible.</td>
<td>358</td>
<td>0.00</td>
<td>10.00</td>
<td>0.88</td>
<td>1.62</td>
</tr>
<tr>
<td>Left work for other group members that he or she should really complete.</td>
<td>356</td>
<td>0.00</td>
<td>10.00</td>
<td>0.79</td>
<td>1.49</td>
</tr>
<tr>
<td>Took it easy and let other students do the work.</td>
<td>355</td>
<td>0.00</td>
<td>10.00</td>
<td>0.82</td>
<td>1.51</td>
</tr>
<tr>
<td>Deferred group work to other students.</td>
<td>356</td>
<td>0.00</td>
<td>10.00</td>
<td>0.88</td>
<td>1.63</td>
</tr>
<tr>
<td>Was less likely to volunteer for tasks if another student was available to complete the task.</td>
<td>353</td>
<td>0.00</td>
<td>9.00</td>
<td>0.97</td>
<td>1.62</td>
</tr>
</tbody>
</table>

**Research question 2.** Are there statistically significant relationships among the 5 social loafing subscales: (1) social loafing self, (2) task visibility, (3) individual contribution, (4) distributive justice and (5) dominance/aggression?

H₀: There will not be statistically significant relationships among the 5 social loafing subscales.

Hₐ: There will be statistically significant relationships among the 5 social loafing subscales.

Several bivariate Pearson correlations were calculated to determine if there were significant relationships among the 5 subscales of the social loafing survey. The descriptive statistics are listed in Table 6. The correlations matrix is presented in Table 7. Nine of the 10
(90.0%) bivariate correlations were statistically significant. The strongest relationship was the significant positive correlation between dominance/aggression and the social loafing self, $r = .51$, $p < .01$. There was a significant negative relationship between social loafing self and contribution, $r = -.33$, $p < .01$. There was also a significant negative relationship between social loafing self and distributive justice, $r = -.24$, $p < .01$.

Table 6

*Means and Standard Deviations of Social Loafing Subscales*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Visibility</td>
<td>373</td>
<td>2.47</td>
<td>0.66</td>
</tr>
<tr>
<td>Social Loafing Self</td>
<td>362</td>
<td>4.21</td>
<td>0.73</td>
</tr>
<tr>
<td>Contribution</td>
<td>380</td>
<td>2.15</td>
<td>0.71</td>
</tr>
<tr>
<td>Distributive Justice</td>
<td>370</td>
<td>2.14</td>
<td>0.74</td>
</tr>
<tr>
<td>Dominance/Aggression</td>
<td>372</td>
<td>3.71</td>
<td>0.81</td>
</tr>
</tbody>
</table>

Table 7

*Bivariate Pearson Correlations Among Social Loafing Subscales*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Visibility (1)</td>
<td>---</td>
<td>-.14**</td>
<td>.17**</td>
<td>.41**</td>
<td>-.17**</td>
</tr>
<tr>
<td>Social Loafing Self (2)</td>
<td>---</td>
<td>-.33**</td>
<td>-.24**</td>
<td>.51**</td>
<td></td>
</tr>
<tr>
<td>Contribution (3)</td>
<td>---</td>
<td>.09</td>
<td>-.19**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distributive Justice (4)</td>
<td>---</td>
<td>-.17**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dominance/Aggression (5)</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *p < .05, **p < .01.

**Research question 3.** Are there statistically significant differences among the community college, undergraduate, graduate and Naval War College students on the 5 subscales
of the Social Loafing Survey: (1) social loafing self, (2) task visibility, (3) contribution, (4) distributive justice, and (5) dominance and aggression?

H₀: There will not be statistically significant differences among the community college, undergraduate, graduate and Naval War College students on the 5 subscales of the Social Loafing Survey.

Hₐ: There will be statistically significant differences among the community college, undergraduate, graduate and Naval War College students on the 5 subscales of the Social Loafing Survey.

A one-way MANOVA (multivariate analysis of variance) was conducted to determine if there were significant differences among the student groups on the 5 subscales of the Social Loafing Survey. This process revealed outliers on 8 data points among 7 participants. Outliers were found on the following dependent variables: 2 social loafing self; 4 distributive justice; 1 dominance/aggression; 1 task visibility.

The means and standard deviations of each dependent variable by student group are listed in Table 8. Box’s test was significant, indicating inequality of covariance matrices. However, MANOVA is robust to violations of the homogeneity covariance matrices assumptions (Tabachnick & Fidell, 2007). Levene’s test was not significant for any of the dependent variables, suggesting that the groups had equal error variances. The MANOVA revealed a significant multivariate difference on the dependent variables by student group, $F(15, 914.15) = 9.10, p < .01$ ($\eta^2 = .12$, power = 1.00).

Univariate ANOVA post hoc tests (Table 9) were conducted to further examine the significant multivariate effect. The post hoc tests revealed several significant differences between the student groups on perceived individual contribution, $F(3, 335) = 41.45, p < .01$ ($\eta^2 = .27$, power = 1.00). The tests also revealed a significant difference between the student groups on task visibility, $F(3, 335) = 3.27, p < .05$ ($\eta^2 = .03$, power = .75). The univariate ANOVA post hoc tests did not reveal significant differences on social loafing self, distributive justice or dominance/aggression.

The final stage in the analysis involved conducting Bonferroni post hoc tests (Tables 10 and 11) to further investigate the differences between the groups on perceived individual contribution and task visibility. The post hoc tests revealed that the Naval War College students ($M = 2.57, SD = 0.60$) scored significantly higher than the community college students ($M =$
2.00, SD = 0.68), graduate students (M = 1.68, SD = 0.49) and undergraduate students (M = 1.77, SD = 0.55) on perceived contribution. The difference between the community college students and graduate students on contribution was also statistically significant. The remaining pairwise comparisons on individual contribution were not statistically significant.

The Bonferroni post hoc tests also revealed that the Naval War College students (M = 2.55 SD = 0.62) scored significantly higher than the community college students (M = 2.31, SD = 0.64) on task visibility.
Table 8  
*Means and Standard Deviations of Social Loafing Scales by Student Group*

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Group</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Visibility</td>
<td>Community College</td>
<td>95</td>
<td>2.31</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>Graduate</td>
<td>35</td>
<td>2.56</td>
<td>0.73</td>
</tr>
<tr>
<td></td>
<td>Naval War College</td>
<td>137</td>
<td>2.55</td>
<td>0.62</td>
</tr>
<tr>
<td></td>
<td>Undergraduate</td>
<td>72</td>
<td>2.56</td>
<td>0.69</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>339</td>
<td>2.49</td>
<td>0.66</td>
</tr>
<tr>
<td>Social Loafing Self</td>
<td>Community College</td>
<td>95</td>
<td>4.32</td>
<td>0.66</td>
</tr>
<tr>
<td></td>
<td>Graduate</td>
<td>35</td>
<td>4.37</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>Naval War College</td>
<td>137</td>
<td>4.17</td>
<td>0.75</td>
</tr>
<tr>
<td></td>
<td>Undergraduate</td>
<td>72</td>
<td>4.16</td>
<td>0.71</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>339</td>
<td>4.23</td>
<td>0.70</td>
</tr>
<tr>
<td>Contribution</td>
<td>Community College</td>
<td>95</td>
<td>2.00</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td>Graduate</td>
<td>35</td>
<td>1.68</td>
<td>0.49</td>
</tr>
<tr>
<td></td>
<td>Naval War College</td>
<td>137</td>
<td>2.57</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>Undergraduate</td>
<td>72</td>
<td>1.77</td>
<td>0.55</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>339</td>
<td>2.15</td>
<td>0.70</td>
</tr>
<tr>
<td>Distributive Justice</td>
<td>Community College</td>
<td>95</td>
<td>2.01</td>
<td>0.61</td>
</tr>
<tr>
<td></td>
<td>Graduate</td>
<td>35</td>
<td>2.20</td>
<td>0.74</td>
</tr>
<tr>
<td></td>
<td>Naval War College</td>
<td>137</td>
<td>2.11</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td>Undergraduate</td>
<td>72</td>
<td>2.21</td>
<td>0.73</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>339</td>
<td>2.11</td>
<td>0.68</td>
</tr>
</tbody>
</table>
Table 8 (continued).

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Group</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominance &amp; Aggression</td>
<td>Community College</td>
<td>95</td>
<td>3.81</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>Graduate</td>
<td>35</td>
<td>3.69</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>Naval War College</td>
<td>137</td>
<td>3.70</td>
<td>0.74</td>
</tr>
<tr>
<td></td>
<td>Undergraduate</td>
<td>72</td>
<td>3.72</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>339</td>
<td>3.73</td>
<td>0.78</td>
</tr>
</tbody>
</table>

Table 9

Univariate ANOVAs on Social Loafing Factors by Student Group

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>F</th>
<th>Sig.</th>
<th>( \eta^2 )</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Visibility</td>
<td>3.27</td>
<td>.022</td>
<td>.03</td>
<td>.75</td>
</tr>
<tr>
<td></td>
<td>(0.42)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Loafing Self</td>
<td>1.51</td>
<td>.211</td>
<td>.01</td>
<td>.40</td>
</tr>
<tr>
<td></td>
<td>(0.49)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contribution</td>
<td>41.45</td>
<td>.000</td>
<td>.27</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>(0.36)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distributive Justice</td>
<td>1.33</td>
<td>.265</td>
<td>.01</td>
<td>.35</td>
</tr>
<tr>
<td></td>
<td>(0.46)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dominance/Aggression</td>
<td>0.40</td>
<td>.752</td>
<td>.00</td>
<td>.13</td>
</tr>
<tr>
<td></td>
<td>(0.61)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Numbers in parentheses represents the mean square error for the corresponding term.
Table 10

*Bonferroni Post Hoc Tests for Task Visibility*

<table>
<thead>
<tr>
<th>(I) Group</th>
<th>(J) Group</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community College</td>
<td>Graduate</td>
<td>-0.25</td>
<td>0.13</td>
<td>.336</td>
<td>-0.59 - 0.09</td>
</tr>
<tr>
<td></td>
<td>Naval War College</td>
<td>-0.24</td>
<td>0.09</td>
<td>.035</td>
<td>-0.47 - -0.01</td>
</tr>
<tr>
<td></td>
<td>Undergraduate</td>
<td>-0.26</td>
<td>0.10</td>
<td>.076</td>
<td>-0.53 - 0.01</td>
</tr>
<tr>
<td>Graduate</td>
<td>Community College</td>
<td>0.25</td>
<td>0.13</td>
<td>.336</td>
<td>-0.09 - 0.59</td>
</tr>
<tr>
<td></td>
<td>Naval War College</td>
<td>0.01</td>
<td>0.12</td>
<td>1.00</td>
<td>-0.32 - 0.33</td>
</tr>
<tr>
<td></td>
<td>Undergraduate</td>
<td>-0.01</td>
<td>0.13</td>
<td>1.00</td>
<td>-0.36 - 0.35</td>
</tr>
<tr>
<td>Naval War College</td>
<td>Community College</td>
<td>0.24</td>
<td>0.09</td>
<td>.035</td>
<td>0.01 - 0.47</td>
</tr>
<tr>
<td></td>
<td>Graduate</td>
<td>-0.01</td>
<td>0.12</td>
<td>1.00</td>
<td>-0.33 - 0.32</td>
</tr>
<tr>
<td></td>
<td>Undergraduate</td>
<td>-0.01</td>
<td>0.09</td>
<td>1.00</td>
<td>-0.27 - 0.24</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>Community College</td>
<td>0.26</td>
<td>0.10</td>
<td>.076</td>
<td>-0.01 - 0.53</td>
</tr>
<tr>
<td></td>
<td>Graduate</td>
<td>0.01</td>
<td>0.13</td>
<td>1.00</td>
<td>-0.35 - 0.36</td>
</tr>
<tr>
<td></td>
<td>Naval War College</td>
<td>0.01</td>
<td>0.09</td>
<td>1.00</td>
<td>-0.24 - 0.27</td>
</tr>
</tbody>
</table>
Table 11

Bonferroni Post Hoc Tests for Contribution

<table>
<thead>
<tr>
<th>(I) Group</th>
<th>(J) Group</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>Community</td>
<td>Graduate</td>
<td>0.32</td>
<td>0.12</td>
<td>.046</td>
<td>0.00 - 0.64</td>
</tr>
<tr>
<td>College</td>
<td>Naval War</td>
<td>-0.58</td>
<td>0.08</td>
<td>.000</td>
<td>-0.79 - -0.36</td>
</tr>
<tr>
<td></td>
<td>College</td>
<td>-0.32</td>
<td>0.12</td>
<td>.046</td>
<td>-0.64 - -0.00</td>
</tr>
<tr>
<td>Graduate</td>
<td>Community</td>
<td>-0.32</td>
<td>0.12</td>
<td>.046</td>
<td>-0.64 - -0.00</td>
</tr>
<tr>
<td></td>
<td>Naval War</td>
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<td>0.11</td>
<td>.000</td>
<td>-1.20 - -0.59</td>
</tr>
<tr>
<td>Naval War</td>
<td>Community</td>
<td>0.58</td>
<td>0.08</td>
<td>.000</td>
<td>0.36 - 0.79</td>
</tr>
<tr>
<td>College</td>
<td>Graduate</td>
<td>0.90</td>
<td>0.11</td>
<td>.000</td>
<td>0.59 - 1.20</td>
</tr>
<tr>
<td></td>
<td>Undergraduate</td>
<td>0.81</td>
<td>0.09</td>
<td>.000</td>
<td>0.57 - 1.04</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>Community</td>
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<td>0.09</td>
<td>.097</td>
<td>-0.48 - 0.02</td>
</tr>
<tr>
<td></td>
<td>Graduate</td>
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<td>0.12</td>
<td>1.00</td>
<td>-0.24 - 0.42</td>
</tr>
<tr>
<td></td>
<td>Naval War</td>
<td>-0.81</td>
<td>0.09</td>
<td>.000</td>
<td>-1.04 - -0.57</td>
</tr>
</tbody>
</table>
**Research question 4.** Are the following subscales statistically significant predictors of the participants’ perceptions of social loafing self: (1) task visibility, (2) contribution, (3) distributive justice, and (4) dominance and aggression?

- **H₀:** Task visibility, contribution, distributive justice, and dominance and aggression will not be statistically significant predictors of social loafing self.
- **Hₐ:** Task visibility, contribution, distributive justice, and dominance and aggression will be statistically significant predictors of social loafing self.

A multiple regression was conducted to determine if task visibility, contribution, distributive justice, and dominance/aggression were statistically significant predictors of the participants’ perceptions of individual social loafing. The data was screened for outliers prior to analysis. Standardized residuals were calculated for each participant, and the resulting scores were utilized to detect outliers in the data. A participant is considered an outlier when the \(|\text{standardized residual}|\) is greater than 3. This process revealed one outlier in the data.

The descriptive statistics for the criterion and predictor variables are listed in Table 12. Review of the variance inflation factors and tolerance levels did not reveal evidence of multicollinearity. However, a plot of standardized residuals did reveal some evidence of model heteroscedasticity. The omnibus model was a significant predictor of perceived levels of individual social loafing, \(F(4, 340) = 43.87, p < .01, R^2 = .34\). This indicates that together the predictors accounted for a significant amount of variation in the criterion.

The regression coefficients are listed in Table 13. The coefficients indicated that contribution and distributive justice were significant negative predictors of the level of social loafing self, \(\beta = -0.24, p < .01\) and \(\beta = -0.14, p < .05\), respectively. This indicates that as perceived levels of contribution and distributive justice decreases, social loafing self increases. Dominance/aggression was a significant positive predictor of social loafing self, \(\beta = 0.44, p < .01\). This indicates that as perceptions of dominance/aggression increases, social loafing self also increases. Task visibility was not a significant predictor of the level of social loafing self within this model.
Table 12

Descriptive Statistics for Research Question 4

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>M</th>
<th>SD</th>
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<tr>
<td>Social Loafing Self</td>
<td>345</td>
<td>4.23</td>
<td>0.72</td>
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<tr>
<td>Task Visibility</td>
<td>345</td>
<td>2.49</td>
<td>0.67</td>
</tr>
<tr>
<td>Contribution</td>
<td>345</td>
<td>2.15</td>
<td>0.71</td>
</tr>
<tr>
<td>Distributive Justice</td>
<td>345</td>
<td>2.14</td>
<td>0.75</td>
</tr>
<tr>
<td>Dominance/Aggression</td>
<td>345</td>
<td>3.73</td>
<td>0.80</td>
</tr>
</tbody>
</table>

Table 13

Regression Coefficients for Research Question 4

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Visibility</td>
<td>0.02</td>
<td>0.05</td>
<td>0.02</td>
<td>0.45</td>
<td>6.50</td>
</tr>
<tr>
<td>Contribution</td>
<td>-0.25</td>
<td>0.05</td>
<td>-0.24</td>
<td>-5.36</td>
<td>0.000</td>
</tr>
<tr>
<td>Distributive Justice</td>
<td>-0.13</td>
<td>0.05</td>
<td>-0.14</td>
<td>-2.82</td>
<td>0.005</td>
</tr>
<tr>
<td>Dominance/Aggression</td>
<td>0.40</td>
<td>0.04</td>
<td>0.44</td>
<td>9.66</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Qualitative Results

Structured Interviews

Structured interviews were conducted to determine whether additional data might be gathered that were unavailable from the surveys. It is possible that the survey may have limited spontaneous information from participants. Kvale (1996) defines a qualitative research interview as an attempt “to understand the world from the subjects’ point of view, to unfold the meaning of peoples’ experiences, to uncover their lived world prior to scientific explanations” (p. 1). Kvale (1996) further describes the interview as a conversation and the researcher as a miner who digs beneath the surface to unearth valuable experiences and information. It is with this purpose in mind that I endeavored to conduct the structured interviews. I hoped to gain a deeper
understanding of how students perceived working in online learning groups and possibly uncover potential antecedents not mentioned or measured in previous research.

Structured interviews were chosen over other (and in some cases more profitable) interviewing techniques due to control measures that can be imposed during the interview process. However, using this approach also has its own set of pitfalls. One major pitfall to structured interviews is the nature of the structure itself. Questions are asked systematically of all participants in a prearranged and highly specific order. This process significantly limits the variance among participants. Although some would consider this a benefit (Denzin & Lincoln, 2003), in the case of this study, it is also a hindrance. Therefore, although the interviews were designed as “structured,” many of the structured questions were designed to be open-ended. Not only was I interested in receiving information about pre-defined segments of my research, I also was interested in discovering new, and perhaps unanticipated, information that would increase my understanding of the social loafing phenomena. By utilizing open-ended questions, I allowed the participants to frame their answers from their individual perspectives within a context that they would hopefully share with me. The benefit of this approach is that I was able to probe areas of familiarity and unfamiliar areas with equal fervor.

For the most part, I allowed participants to tell me the story of their online learning experiences. Although all participants were told (prior to the interview) that I was studying the dysfunction of online learning groups, I also made a point to tell them that in order to understand what made groups fail, I also had to understand what made them work well. Therefore, what I really wanted to learn from them how they felt about online learning groups both the “good” and “bad.”

In order to hear their stories without the influence of my personal perspectives, I began each interview by asking, “How do you feel about working in online learning groups?” This generally elicited about their general like or dislike. Frequently, participants needed no further prompting to provide detailed descriptions of how they felt, why they felt that way, and an experience as an example. If this information was not easily provided, I used gentle prompters such as „Can you tell me more about that?” or „Can you tell me why you feel that way?”

Once I had received their initial perspective regarding participating in online learning groups, I asked about the other side of the coin (namely negatives/positives of groups). Often, I would receive emphatic initial responses that might typically make me anticipate a lukewarm
approach to the opposite opinion. That was not the case. Often, respondents would emphatically state a dislike or even hate for online learning groups but when asked about the positive side, they could still (in most cases) provide descriptive information on the positive aspects.

Participants needed little prompting to share their experiences (both good and bad) about online learning groups. By sharing their stories, participants were able to provide a context within which their opinions were formed and whether subsequent experiences further solidified those feelings or provided a contrasting background against which to compare future experiences. Due to these various contextual experiences, there were predominant but not exclusive themes among the participants.

In order to explore these themes further, participants were encouraged to describe their feelings as they recounted their experiences. Qualitative interviewers are often cautioned against interjecting or providing hints about their personal perspectives during the interview (Denzin & Lincoln, 2003). However, this turned out to not be a major issue during the interviews.

Participants tended to share their stories through a natural ending without reference or inquiries as to whether it was the information I was seeking or answering the original question asked. On only one occasion was a participant to comment (after the conclusion of her story), “…but I’m guessing I am way out there compared to other people you are talking to.” I assured her that I was receiving lots of different perspectives and found hers to be particularly valuable. I hoped this was an appropriate response that would not lead her to believe she was “different” and also not to discard her comments by demeaning them as no different from others.

Although I didn’t want to influence the participant’s responses, I also wanted each of them to know that it was their unique experiences that I was interested in learning about. Once participants felt comfortable with this perspective, I had little difficulty getting a series of descriptive examples and in some cases lengthy stories of learned experiences. The only question that tended not to produce these responses was the question regarding self-reported social loafing. In most cases, participants aired an attitude of personal offense as if I were accusing them of a personal affront. In these cases, the participant’s responses were terse and they would frequently not provide additional explanation for their response. An exemplar for the repertoire is:

**Interviewer:** Have you personally ever not fully contributed to a group project?

**Participant:** No.
Interviewer: Can you tell me why?
Participant: I just don’t.

With the exception of this question, participants provided vivid stories that emphasized their overall feelings about the topic at hand.

**Interview Coding**

Interviews were coded both during and after the conclusion of the interview process. As the sole interviewer, I created field notes as the interviews were in progress. These notes were comprised of my thoughts about the participant’s attitudes and descriptors they used during their storytelling. Potential themes were noted as I recognized familiar terms, descriptors, or those that seemed similar. In these cases, I tried to either elicit additional information or listen more carefully to clarify if these terms were indeed synonymous or simply similar in nature. Upon the conclusion of the interviews, Nvivo qualitative software was used to organize the data for subsequent analysis. Once the interviews had been transcribed and imported into Nvivo, each transcript was re-read to re-establish familiarity with my participants’ individual situations and stories. It also aided me in creating more potential categories and themes for the individual analysis of each transcript. Once this step was complete, I individually coded each transcript, combining predetermined codes and context while also listening for the emergence of new themes that did not appear in the first few readings. Once themes were established, these themes were collapsed into categories. Seven categories were established that encompassed all of the previously established themes.

**Descriptive Statistics for Participant Demographics**

Twenty-eight participants were recruited from a convenience sample of online learning courses at both the undergraduate and graduate levels from two-year and four-year colleges to participate in one-on-one interviews. No interview participants were recruited from the Naval War College due to accessibility and security issues. The descriptive statistics for participant demographics are listed in Table 14. The students were split into 3 educational categories: 11 (39.3%) community college, 4 (14.3%) undergraduate and 13 (46.4%) graduate. Of the participants, 24 (85.7%) of the participants were female, and 4 (14.3%) were male. Participant’s age ranged from 20 to 50 years of age. The participants’ ethnicity was reported as follows: 24 (85.7%) Caucasian, 4 (14.3%) African American.
Table 14

Descriptive Statistics for the Participants’ Demographics

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Group</td>
<td></td>
<td></td>
</tr>
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<td>Community College</td>
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<td>39.3</td>
</tr>
<tr>
<td>Graduate</td>
<td>13</td>
<td>46.4</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>4</td>
<td>14.3</td>
</tr>
<tr>
<td>Gender</td>
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<td></td>
</tr>
<tr>
<td>Female</td>
<td>24</td>
<td>85.7</td>
</tr>
<tr>
<td>Male</td>
<td>4</td>
<td>14.3</td>
</tr>
<tr>
<td>Age</td>
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<td></td>
</tr>
<tr>
<td>20 to 30 years</td>
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<td>14.3</td>
</tr>
<tr>
<td>30 to 40 years</td>
<td>21</td>
<td>75.0</td>
</tr>
<tr>
<td>40 or more years</td>
<td>3</td>
<td>10.7</td>
</tr>
<tr>
<td>Ethnicity</td>
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<td></td>
</tr>
<tr>
<td>African American</td>
<td>4</td>
<td>14.3</td>
</tr>
<tr>
<td>Caucasian</td>
<td>24</td>
<td>85.7</td>
</tr>
</tbody>
</table>

Thematic Analysis

Thematic analysis is a type of qualitative analysis that involves identifying underlying themes and patterns of living and/or behavior in textual data (Aronson, 1994). This process involves searching interview transcripts for common threads that are found throughout the entire set of responses. These themes may be abstract in nature rather than concrete descriptions or direct references using the same words and descriptors used by the researcher. Due to the abstract nature of the participants’ responses, thematic analysis requires reading the data multiple times in order to identify common themes. In order to analyze the data in an organized manner, the qualitative software Nvivo 9.0 was utilized. This software allows the researcher to identify possible themes during the initial reading and then track their occurrence throughout the entirety of the textual data.

Themes

During the thematic analysis, twenty-eight potential themes (Table 15) were identified as appearing more than once across the data. These potential themes were subsequently collapsed into twenty-two themes that were found to appear multiple times across the textual data.
Table 15

*Initial Social Loafing Interview Themes*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Sources</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation for Work Groups</td>
<td>28</td>
<td>46</td>
</tr>
<tr>
<td>Self-Reported Social Loafing</td>
<td>26</td>
<td>33</td>
</tr>
<tr>
<td>Negatives of Group Work</td>
<td>25</td>
<td>72</td>
</tr>
<tr>
<td>Social Loafing</td>
<td>24</td>
<td>62</td>
</tr>
<tr>
<td>Recommendations for Faculty</td>
<td>22</td>
<td>78</td>
</tr>
<tr>
<td>Benefits of Group Work</td>
<td>21</td>
<td>35</td>
</tr>
<tr>
<td>Communication</td>
<td>19</td>
<td>65</td>
</tr>
<tr>
<td>Dominance</td>
<td>18</td>
<td>35</td>
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<td>Sucker Role</td>
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<td>18</td>
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<tr>
<td>Diversity</td>
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<td>24</td>
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<tr>
<td>Role Assignment</td>
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<td>19</td>
</tr>
<tr>
<td>Like Group Work</td>
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<td>21</td>
</tr>
<tr>
<td>Dislike Group Work</td>
<td>10</td>
<td>19</td>
</tr>
<tr>
<td>Group Grade</td>
<td>9</td>
<td>15</td>
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<tr>
<td>Deadlines</td>
<td>9</td>
<td>11</td>
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<tr>
<td>Intimidation</td>
<td>7</td>
<td>13</td>
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<td>Personal Schedules</td>
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<td>8</td>
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<tr>
<td>Allocation of Resources</td>
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<td>6</td>
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<tr>
<td>Expectations</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Sucker Effect</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Peer Evaluation</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

**Developing Themes and Sub-themes**

Examination of unifying themes throughout the participant interviews resulted in the development of seven unifying themes with sub-themes (Table 16): student perceptions of online groups, self-reported social loafing, social loafing others, social loafing impact, social loafing antecedents, social loafing moderators, and recommendations for faculty. Unifying themes were selected based on similarity, relationship to literature, and type of theme. The Social Loafing Antecedents theme includes five sub-themes: intimidation, personal schedules, poor communication, domination, and group grade. The Social Loafing Moderators theme includes six sub-themes: positive communication, feedback, role assignment, deadlines, clear expectations, and peer evaluations. The Social Loafing Impact theme includes three sub-themes: dislike of groups, sucker role, and sucker effect.
Table 16

*Interview Themes and Sub-themes*

<table>
<thead>
<tr>
<th>Social Loafing Antecedents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjective Antecedents</td>
</tr>
<tr>
<td>Intimidation</td>
</tr>
<tr>
<td>Personal Schedules</td>
</tr>
<tr>
<td>Objective Antecedents</td>
</tr>
<tr>
<td>Poor Communication</td>
</tr>
<tr>
<td>Domination</td>
</tr>
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<td>Group Grade</td>
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</table>

<table>
<thead>
<tr>
<th>Social Loafing Moderators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Communication</td>
</tr>
<tr>
<td>Feedback</td>
</tr>
<tr>
<td>Role Assignment</td>
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<tr>
<td>Deadlines</td>
</tr>
<tr>
<td>Clear Expectations</td>
</tr>
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<td>Peer Evaluations</td>
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</table>

<table>
<thead>
<tr>
<th>Social Loafing Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dislike of Groups</td>
</tr>
<tr>
<td>Sucker Role</td>
</tr>
<tr>
<td>Sucker Effect</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Student Perceptions of Online Groups</th>
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</table>

<table>
<thead>
<tr>
<th>Self-Reported Social Loafing</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Social Loafing Others</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Recommendations for Faculty</th>
</tr>
</thead>
</table>

**Social Loafing Antecedents**

This category includes two sub-categories:

- Subjective antecedents (self-reported):
  - Intimidation
  - Personal schedules

- Objective antecedents:
  - Poor communication
  - Dominance
Personal schedules. Personal schedules were not directly addressed within the interview protocol. However, personal schedules emerged as a theme by being identified by participants as an aspect of online groups that negatively influenced group productivity. Participants felt that scheduling meetings, discussions, and coordinating deadlines was especially difficult in the online forum more so than face-to-face.

“...online groups especially are the hardest. Sometimes it’s hard to get scheduled for everybody to be together at the same time. So, I would say that scheduling with professional students, especially online, is difficult.”

The issue of “professional” students was echoed by many of the participants. They referenced having to balance family, work, and school in a delicate symbiosis. If not properly balanced, the participants felt like their school-work and, especially, their grades would suffer enormously. This issue was further complicated by the nature of online learning being “anytime/anywhere.” Participants felt intense pressure when working with fellow group members who lived on opposite coasts or, in some cases, another country.

“...it’s hard because you’re not on the same time zone, you’re not in the same area or anything else, and everybody is on their own time.”

Many students felt that although geographical distribution and working professionals’ added diversity, increased ideas, provided various viewpoints, and maximized the potential of the group, the combination of work, family, school, and geographical isolation added a unique and burdensome challenge to overcome in the online environment.

Poor communication. There were no preconceived assumptions regarding group communication in relation to social loafing in this research. Surprisingly, group communication surfaced as a strong theme among participant responses. Participants indicated that strong communication skills were necessary for group success. Interestingly, participants did not limit their references to communication solely to group participants but also between group participants and the instructor.

“I think something that doesn’t get discussed is the ability to make sure that you are heard but also to not be married to the ideas you put forth. That ability to put things forward and then get behind whatever direction the group went with. I think that is one of the most incredible tools in business today.”
It is this aspect of good communication that participants felt was primarily missing in dysfunctional groups. This was true whether students were referring to student-to-student or faculty-to-student communication.

“Some of my professors have done the Blackboard Chat, which I don’t like as much as Eluminate because it’s hard to follow the discussions. I feel it’s not setup or organized as well.”

E-mail was frequently named as a culprit in misunderstandings and poor communication. Problems were cited in time delays, lack of facial expressions, group members not checking mail on a timely basis, and poor computer etiquette.

“So you try and incorporate, I don’t know, emoticons or the different languages that you use specifically when online. You know the LOL or things like that to make sure that nobody is taking things seriously that weren’t meant seriously.”

“Sometimes there are problems in communications or making sure that everybody is on the same page. ‘Cause things get typed and things get missed when you’re typing. It’s a little harder, I think, with delays in communication if you’re doing it via e-mail.”

“But, it’s kind of a challenge ‘cause there’s almost a different nuance to the language when you’re doing it online. You just have to be really careful about how you’re typing things.”

“Some people don’t check their e-mail regularly and so even though you may ask them to do a part, they don’t respond to you, they don’t check it in time, so they don’t do their portion in a timely manner and on time like everybody else does. And you may send them five e-mails saying, ‘Hey, we haven’t heard from you. Where you at?’ They still don’t respond.”

Some participants voiced frustration with communication between the faculty and student. Sometimes this frustration was due to the type of medium that was being used and sometimes to the perceived inability of the faculty member to communicate on a novice level.

“..as far as his communication to the ones of us that are lower than him, that are not on a Ph.D. level, he cannot communicate well.”

Other frustrations involved communicating via the discussion boards. Participants indicated that few students took these forums seriously and simply posted to meet the minimum requirements of the course rather than as a learning venue.

“some of the people’s comment on there I didn’t find helpful at all and some of them were just comical.”

Another issue voiced by participants was difficulty communicating with students where English was a second language.
“…he did a really, just really, awful job of putting things together. And it was really frustrating for us cause we’re like, ‘We don’t understand what you’re saying.’ We’re trying to like be really sensitive and understand what is going on, but we’re having a hard time and every time he tried to explain it, it gets even more confusing for everyone.”

“…it just goes to indicate how difficult communicating sometimes online can be if the main language that you’re communicating isn’t your native language.”

Utilizing chat features were also a source of miscommunication for both synchronous and asynchronous courses.

“I had another class where the professor almost always just talked using the chat box and I personally found it really difficult…”

“…there are some things that have been said that you can’t undo because it’s staring right at you in black and white because you can’t delete any of it. So that’s frustrating.”

Participants also pointed out that faculty utilizing synchronous software should have the ability to manage that software adequately or the result could be increased miscommunication and frustration.

“I think the professor needs to be able to manage what’s going on in the audio as well as the chat box, like all the aspects of working with an Eluminate class or a similar type of a program or what have you. There were some fairly incendiary and sexist comments going on in the chat box, but he wasn’t reading it. And so he as just sort of going off on his own tangent somewhere wherever he was and here we are like there’s a bunch of that were frustrated, but we had no way of getting his attention.”

“And we were holding this whole separate conversation in chat and I kept trying to get his attention ‘cause he’s just talking, talking and talking. I’m like, ‘Hello??’”

On the other hand, students also recognized the value of a synchronous classroom when managed appropriately.

“I feel like I’ve learned the most is when the professors actually use the audio function and talk. Like it is so incredibly boring to sit there and just read text that scrolls by.”

“I feel like I’m more active if I’m listening, being asked to contribute back either via audio – preferably via audio and via the chat box or what have you.”

Participants expressed a belief that timely and efficient communication was a key to successful group projects. Conversely, poor communication was a road to disaster. Participants continually referred to incidents of miscommunication, time delays, language barriers, and lack of visual cues as barriers to an efficient online group.

**Dominance and intimidation.** Previous research (Piezon & Ferree, 2008) suggests there may be evidence that dominance and intimidation within the group may influence decisions
regarding whether or not to engage in social loafing behaviors. Although the survey sought to provide statistical evidence regarding this perception, lack of previous research into dominance as a social loafing antecedent prompted an interview question to further examine perceptions regarding the influence of dominant group members. Participants were asked the following questions:

- Some group members have commented that they didn’t contribute their fair share because of a dominant group member or because they were intimidated.
- Have you or other group members experienced this?

Interestingly, although participants acknowledged the existence of intimidation and dominance, few indicated that they were negatively influenced by these group members.

“I’ve experienced it but it did not stop me from working hard….”

“I’ve experienced dominating group leaders, but you encounter that in the classroom, you encounter that in the workplace.”

“I can deal with the difficult people, the argumentative people and all of those kinds of things….”

Although most participants indicated that they were not personally affected by dominance or intimidation, they did provide evidence that these behaviors exist within online learning groups.

“…some of those people were just mean and nasty, and that was very difficult to have to deal with at the time.”

“…he would ridicule people….”

“He was the type that if you shrunk back he just he would keep going but if people would jump up and be assertive, then he would back off.”

“I…had a gentleman and he wouldn’t listen to anybody…he was just very difficult.”

“I don’t think online students should have to take abuse. And so someone who is um, who is abusive, they are saying mean things or they are just being critical, I do think an instructor needs to step in.”

“…there was this one particular guy that was, I mean he was one of those scary smart guys, and…I can why, how he would be intimidating to other people.”

“…there’s always that person that I think could be the bossy ones in the group and they feel like they know everything, and no matter what, they feel like their way is the best
way…. Some people wanted their way no matter what and they will fight to the end to make sure their way will be approved. Their way is basically the way it is. That’s how some people are and I do feel…one person can be that intimidating in the group.”

“I have had someone when I worked in a group try to be overbearing dominant….”

Interestingly, several participants not only indicated that they were not influenced by these group members, they did believe that other group members might have found their personal behavior to be dominant or intimidating. What made this insight particularly interesting was that these same individuals personally felt their behavior was justified.

“I guess, I’d be more of the intimidator.”

“Generally, there is usually someone that is dominant in the group and takes charge and gets everybody rolling, but I’m one of those people.”

“I guess, having the military background before being in the group and, you know, just trying to get that project and timeline accomplished. If there wasn’t an established group leader or even if there was sometimes, I felt myself taking over.”

“I think the aggressive leader could at times be overzealous and step on toes, but in the end ultimately, you know, get the project accomplished. So, I think some people could be intimidated but instead of looking at it that way, they should more look at it, I think, as what they could learn from that project and how to adjust their behavior and input in the future project.”

“I don’t think you can intimidate somebody if you just do it in a nice way.”

I find it revealing that the small minority, who admitted being influenced by dominance or intimidating behaviors, significantly tempered its impact.

“…you have different opinions so sometimes I feel like you don’t want to speak up. …I just feel like the other individual wasn’t trying to hear me out…”

“…yeah, you do feel a little intimidated because that person seems like they always have the right thing to say and they’re going to answer first. So, you think, ,Oh, well, I guess I don’t need to answer. Maybe what I have to say isn’t quite as important as what they’re saying.”

“I think I take more of a backseat sometimes if there are people are – I guess the word isn’t really aggressive, but just more prominent with their opinions. Lots of times I don’t really want to make waves and so if people are really adamant about things and they’re saying a lot on the subject then I’ll just kind of go along with it. So, I guess, in that then I contribute less cause I wouldn’t be as vocal.”
Other participants were more than willing to consign other group members to being prone to succumbing to these behaviors while they remained impervious. Participants further justified the negative behaviors by casting them in a positive light. These behaviors were described as group members who were taking charge, stepping up, managing, leading, controlling the situation, ensuring the project was completed, gets everybody rolling, or to possess vibrant, stronger, organizing personalities.

**Group grade.** Group grades were not addressed in the interview questions. However, group grades emerged as a theme within discussions on negative aspects of working in groups and recommendations for faculty. Participants who address group grades had strong opinions regarding their use and generally felt that providing a group grade both encouraged social loafing and punished strong performers.

“So regardless of whether she did her part, it has to look good; otherwise, all of our grades are reflected in that. And that’s always kind of frustrating.”

“…she was utilizing our information and not submitting hers but she was able to get the grade that was submitted by the professor.”

“So that’s the grade the group gets. Just like the 80 that I got on my assignment. You know, I had mine turned in on time and had it ready to go and I still got an 80 because of the negligence of someone else.”

“…if…you were just getting one group grade as a total as opposed to individual grades, then one person might end up doing all the work. And then all the others would reap the benefits of a good grade.”

**Social Loafing Moderators**

This category included the following themes: feedback, positive communication, role assignment, deadlines, clear expectations, and peer evaluations.

**Feedback.** Participants indicated that timely and targeted feedback was necessary for success. Feedback referred to both student-to-student and faculty-to-student interactions. Participants felt that faculty should not assign students to groups with a set of instructions and walk away. They thought it was critical that faculty keep their fingers on the pulse of the group to ensure that positive progress was being achieved. This wasn’t intended to ensure that there was never conflict or disagreement but rather to prevent roadblocks – those instances where the group members feel they cannot overcome the issues at hand or a particularly difficult group
member. Participants felt that the faculty should maintain task visibility without direct interference unless it was necessary or requested by fellow group members.

“…it was just not overbearing. It didn’t leave you hung out to dry.”

“Feedback. Just because you assign a group, don’t just leave the group out there hanging; feedback.”

“I would probably encourage…students go through and indicate what their expectations were, to communicate with the other group members, like what their work style was and how they prefer to like receive and give feedback.”

Positive communication. Strong communication skills were indicated as a measure of success both between the group members and between the group and the instructor. Participants indicated that strong communication skills were necessary for group success. They indicated that strong communication included the willingness to learn how to get along with others, negotiate, identify and capitalize on the strengths of others, and listen to opposing viewpoints.

“You’re bringing different ideas together and learning just to communicate with others.”

“…you don’t necessarily always pick your teams, you’re assigned and you have to learn how to get along within your teams to leverage the different talents and abilities within your teams to achieve something.”

“…whenever you work in a group, you just have to know that you have communicate and be willing to negotiate…”

“…you don’t bark out orders and you don’t tell the group what you’re going to do. You engage the group in what do we want to start with this, what do we want to do from here.”

Participants also felt that faculty played an important role on the effectiveness of group communication. They indicated that faculty frequently fell short in their efforts to ensure timely responses to student inquiries and were known to leave students to resolve conflict even after requests for help were voiced. Participants cited instances where faculty simply ignored student complaints or indicated that it was the responsibility of the students to resolve difficulties – not the instructor. Participants indicated that increased effort of faculty in both responding (and if necessary aiding resolution) would increase group efficiency.

“I ask the professor to join in with the discussion board. I mean, you see all those messages and you cannot get up with them. You are panic stricken.”
“…to be available as you say on your syllabus. You know how the syllabus works and you e-mail the professor and they’ll get back to you in 48 to 72 hours? That is not the case for some professors. 72 hours turn into more like seven days.”

Participants had kudos for faculty who made extra effort to communicate with and encourage communication between students.

“…she encouraged us to talk and she talked to us all – she always used the audio function in the class. So, it felt like she was talking to us – I mean obviously she was, but it felt more like she was to us versus at us if that makes sense.”

“I feel like I’ve learned more when the professors actually use the audio function and talk.”

Role assignment. There were no interview questions directed at examining this attribute. However, role assignment surfaced as a theme during discussion of ways to improve group work or as methods that had previously resulted in group success. Participants felt that role assignment assisted the group by keeping everyone focused and on track.

“Have each team assign roles and have each team identify what each individual is supposed to be contributing to the final product. And have milestones and timelines and require weekly meetings and peer reviews.”

Specified roles also provided group members with valuable experience (especially leadership roles) that they may not otherwise have had a chance to garner.

“I think it is important for the people who haven’t had a lot of leadership roles to be in a leadership role…I think they learn more.”

Greater experience led to greater efficiency, which led to more positive feelings between group members and achievement of group goals. Participants also felt that role assignment provided students with a feeling of project ownership, which further increased their motivation to do well.

“…if someone had to have an assigned project then they had to have their name on that in order to do it.”

“I would try to structure it so that there were fairly clear defined individual responsibilities contributing to the whole of the project.”

“I would find everyone’s key strength in every area that they are best at and divide the work accordingly so they’re most productive.”
**Deadlines.** Deadlines were not directly addressed within the interview protocol. However, deadlines emerged as a theme during discussion of recommendations for faculty. Participants indicated that specified timelines and firm milestones provided the incentive to work harder and stay motivated.

“…if the members are motivated, you can get a lot more done. They can be efficient. You can get things done quicker. It allows for more delegation of duties to assist yourself.”

“I would make sure I set deadlines for everyone to gather their part of the information to ensure that everyone participates and if they don’t meet that deadline, maybe drop them from the group…”

They also felt that posting deadlines and timelines increased task visibility both student-to-student and student-to-faculty.

“We had deadlines posted out there. We all had to post by the deadline. If you didn’t, then the instructor sees.”

**Clear expectations.** Participants indicated that misunderstanding between group members were common and lead to false expectations of individual group members.

“…they are not doing their work because of what my expectation is?”

“…maybe…I’m expecting them to write 5 pages and they end up writing one page. Maybe my expectation is so much higher.”

“That was my perception but I don’t know if that was the group’s or someone else’s expectation.”

They emphasized the importance of making sure that each student understood what was expected of them individually and as a contribution to the group effort. If participants have clearly defined expectations, then it is expected they would be more likely to be actively engaged and timely in their submissions.

“Manage expectations from the beginning to the end. Not only manage, actually, clearly define them and then manage them.”

“I’ve had some professors that had great, great instructions. They put their instructions out there for us. From the very beginning, we know what to do. We know how to follow their instructions. We know where to go.”
“…make sure that everyone will completely understand the project, that the objectives are known upfront, and what everyone’s tasks are, are known upfront. And the deadline in which those tasks need to be completed are known upfront as well.”

“…this is what you’re supposed to do, this is the day I expect it to be done…”

**Peer evaluations.** Peer evaluations were not directly examined in the interview protocol but were identified as a theme. Participants felt that peer evaluations could impact the emergence of social loafing and alleviate the negative perceptions associated with group grading. They also felt that peer evaluations helped to level the playing field between those who care and those who don’t. Participants indicated that one of their particular dislikes for participating in online groups was the implementation of group grading. They felt that additionally implementing peer evaluations could alleviate the negative impact of group grading by subsequently lowering individual grades for a project based upon their peer reviews.

“…those people didn’t get good grades because we all had the opportunity to give peer reviews on them.”

Although this may, at first, appear to be retribution or punishment, participants regarded this activity more along the lines of equity theory.

“…when you do the group evaluations, you don’t want to be mean, but then if someone didn’t do their part, you kind of have to grade them lower.”

It is also interesting that some of the participants regarded the use (or lack of use) of peer reviews for group projects as a rubric item for faculty assessment.

“…a good professor will give you what I call like a peer evaluation at the end.”

“I would always have a peer evaluation – always.”

**Social Loafing Impact**

There were three unifying themes that illuminate the impact of social loafing on other group members: dislike of groups, sucker role, and sucker effect.

**Sucker role and sucker effect.** The act of group members carrying a free rider or social loafer has been termed playing the *sucker role*. Avoiding playing the sucker role by reducing one's individual effort has been termed the *sucker effect* (Kerr, 1983). Although these individual behaviors were not directly addressed during the interview, evidence of their existence was provided in several of the participant’s responses.
“Basically, I feel like you just had one person or it could be more than one person that you could feel like we’ve got two strong people in the group, I can sit back and relax.”

“…I just did the bare minimum…and didn’t give it my 100%...because I didn’t feel like others were contributing….”

“If they think you’re going to handle it for them, then they’re going to let you handle it for them. But then again, if you don’t handle it for them and they don’t do the work, then you get a bad grade.”

“…one of the group members just really didn’t do her part for it. And so the rest of us had to compensate by doing her part….”

“…you can’t not do it because then the work won’t get done and then it will affect you too.”

“So, if somebody wasn’t pulling their fair share of the work, I would do it for them….”

“…people are shirking their projects and I had to pick up their slack.”

The main reason participants cited for engaging in the sucker effect was equity. The theory of equity states that group members will reduce their work-load until they feel like their fair share of the load is equitable to that of others. Participants may engage in other behaviors to achieve equity other than reducing work effort. These behaviors may include denigration and punishment. However, none of these behaviors were voiced by the participants in this study.

The main reason participants cited for engaging in the sucker role was to salvage or maintain a good grade. One frustrated participant voiced his response to continual exposure to social loafers:

“I’ve got to the point where I’ll just do my work and do his work for him. And I know that’s not good and that’s not teaching him anything. But, when you’re working in a group work…and you’re graded upon that and somebody else is slacking, you come and pick up their slack in order to get the grade.”

Dislike of groups. One major and fairly predictable side effect of continual exposure to social loafers in groups is the development of a dislike of working in groups. Some of the participants in this study voiced a more significant dislike of groups than others:

“Even face-to-face, I don’t like groups.”

“…by the end of the program, I hated group work.”

“…it was such a horrible experience, I never did it again.”
“…every group that I’ve been involved with, it’s been more hassle than it’s worth.”

Most of the participants voiced a lukewarm response to working in groups with a general dislike of online learning groups:

“I’m not so crazy about it.”

“I don’t really care much for it.”

“It’s awkward.”

“I would just rather not do it.”

One participant voiced a rather lukewarm response to working in groups with a rather humorous tone that summed up how most of the participants felt about working in future online groups:

“The benefits? I really haven’t seen any benefits to online working groups.”

**Student Perceptions of Online Groups**

This category includes three themes: negative perceptions, perceived benefits, and preparation for “real” work groups.

**Like/Dislike group work.** In order to not unintentionally influence participants’ responses regarding group work, the first question participants were asked was, “How do you feel about working in online groups? Why?” By beginning the interview with an open-ended question, it was hoped that the participants’ overall feelings toward group work would surface and allow the researcher to further explore those feelings and why those perceptions existed. This question was designed to elicit responses that might not have been generated otherwise and pursue potentially unexamined avenues. Responses were generally divided with more participants leaning more heavily toward the negative aspects of group work. Although there were some strong endorsements of educational work groups such as “It was just so well done and it was an incredible experience,” most participants strongly engaged in hedging positive comments about working in groups:

“…I’d say overall it is okay. I really do. It’s okay.”

“I would say, for the most part, it was a good experience. I think there are always frustrations….”
“As long as…each member contributes their share and allowed to work to the benefits of the whole project, it could be a really great thing. It could be a great thing. It really can.”

**Negatives of group work.** There were three interview questions that directly supported examining the negative aspects of working in online groups:

- “What were some negative aspects of working in groups?”
- “What did you like the least about your group experience?”
- “Tell me about some disappointments or difficulties you have had working in online groups.”

Many participants had strong opinions regarding the negative aspects of online group work and were more than willing to provide supporting evidence. General feelings surrounded lack of faculty support, lack of work ethic, poor communication, personality conflicts, and incidents of social loafing.

“I did one online class and it was such a horrible experience that I never did it again.

“…it was very difficult to engage people…some students are lazy.”

“…there’s always at least one person who just doesn’t do their part, and to me that’s always frustrating…”

“The faculty just did not give you enough time to be able to collaborate and do a good job.”

“…some of those people were just mean and nasty, and that was very difficult to have to deal with at the time.”

“I’ve had it where people just didn’t show up and then at the end, they show up and say, „what can we do?””

Many participants had rich and engaging stories they used as examples of why they developed a dislike of group work. One participant shared a story about how one of her group members, who had previously been known as a hard worker, suddenly disappeared – much to the chagrin of her fellow group members. In the end, it was determined that the missing group member had experienced the death of a small child and, contrary to the perceptions of her fellow group members, had not simply disappeared. Many of the participants shared similar stories of frustrations associated with not being able to contact or communicate with fellow group members. This caused an ongoing resentment, instability of the group, and false expectations.
“And usually, when you’re face-to-face, you can confront that person saying, ‘Hey, listen, you know, are you going to do something? Do you need help? What is the problem?’ But in the online world, because you don’t have that face-to-face interaction, you’re just waiting for message after message after message to be responded to and it doesn’t work.”

“…I think communication is hard. I guess if we do verbal communication where we’re actually talking, it’s a little better, but that’s rarely happened in any of my online courses.”

“I do not like doing them [groups] because my experience in groups is that a few individuals end up with most of the work, and the motivated ones are usually the ones that end up doing the work.”

“Some people don’t check their e-mail regularly and so even though you may ask them to do a part, they don’t respond to you, they don’t check it in time, so they don’t do their portion in a timely manner and on time like everybody else does.”

Other difficulties voiced that led to a dislike of group projects were personal schedules, group grading, lack of accountability, and having to pick up the slack of other group members (sucker role).

“And so, I just think, especially with online, because you can’t sit there and hold people accountable and say, ‘Let me see what you’re doing’, ‘Let me see your work’, or ‘Let me see what you have’. You know, you can’t do that when somebody’s way across the country. I mean, you can tell them, you could e-mail – you start e-mailing your stuff in and they don’t e-mail it to you. I mean, what can you do?”

“I think getting a grade is very important, it’s like you’re relying upon yourself. And, like I mentioned earlier, having to rely on two other people who may not be as focused as you are or may not even care about the grade as much as you do, sometimes it’s unfair.”

“If you’re working with your groups, you’re at the mercy of the other individuals to get that in time to complete. It does make me really nervous if I have to wait till the end to get everything done. That’s something that always seems to happen.”

Among the many dislikes of online learning groups, there were stories of malcontent and frustration that abounded. However, among the frustration, there also seemed to be a desire to understand why others seem to continually disappoint and come up short in their contributions. One participant makes a concerted effort to understand (perhaps from personal experience) while simultaneously debunking a familiar sentiment found in online learning:

“Maybe they joined the class, online class, thinking, ‘You know what, this is going to be easier. I don’t have to drive to get there. I don’t have to drive to get home. That’s
saving me at least an hour and I’ll have more time for school.’ And they just don’t realize that there’s a commitment and it’s something that they have to be serious about.”

Interestingly, although there was an overwhelming amount of discontent voiced regarding the participation in online work groups, the same participants were still able to see through the fog and recognize potential benefits of working in these groups.

**Benefits of group work.** As stated above, participants were strongly encouraged to provide examples or descriptions of both the positive and negative aspects of working in online groups. To examine perceptions of the benefits to working in online groups, participants were asked the following two questions:

- “What were some benefits to working in groups?”
- “What did you like best about your group experience?”

Many participants found the general characteristics of online learning beneficial in the group context. Participants enjoyed the flexibility, ability to work from a distance, and the diversity provided by their fellow group members. Participants particularly appreciated the ease of meeting and working during times that were convenient to all group members without leaving the comfort of their homes. One participant summed up this feeling succinctly by stating, “…the freedom to do whatever needs to be done whenever.”

Many of the participants felt that working in online groups increased their understanding of challenges faced by corporations that increasingly find it necessary to work via distance. These complications involve learning to work with collaborative Web 2.0 technologies or, in some cases, their absence.

“…it gave me an understanding of how to work remotely.”

“…you can use technology such as Google Docs…”

“…you have to learn how to get along within your teams to leverage the different talents and abilities within your teams to achieve something.”

Other participants felt that group work added greater depth and dimension to the online learning experience:

“…working in the smaller group environment, I…get to know some of my classmates on a more personal level and, you know, learn more about their personality and their quirks, which doesn’t necessarily come off in…a chat box during the lecture.”
“You have more time to research and look up stuff as opposed to just saying something and then finding out you’re totally wrong.”

“…the solution that we have takes me down the path that I might not have gone down if I was doing the project by myself.”

However, by far, the most frequently voiced benefit to working in online learning groups was what each group member gained from group diversity:

“…you get different concepts, different perceptions from other people. I mean, you learn from your professors, but you actually learn a lot from your fellow students.”

“…you have…a lot of people with different experiences together to try and accomplish that goal.”

“I liked the fact that you get all kinds of people that have a bunch of different ideas and influences.”

“…one person may have a strength in one area and another person they have a strength on another area, they can pool together and it could work…to the benefit of the team.”

Preparation for work groups. To examine perceptions regarding the transfer of learning from educational work groups to “real world” work groups, participants were asked the following question: “Some faculty members claim that working in groups prepares you for „real world’ groups. Do you agree? Why/why not?”

Although some participant’s responses tended to be emphatic in nature, either strongly supporting the transfer of learning or debunking the possibility, most participants felt that there was at least a partial transfer of learning but that the intricacies of work groups could not be duplicated in educational work groups.

“When I started through my masters program, I would have said no. But now, …I’m collaborating with people all over the world and…I believe that what I learned as an online student definitely gave me skills to do this well.”

“Yes and no. I think it prepares you to be like a team player, to be able to get along with your co-workers in the real world of working. But, I don’t think that it…prepares you to deal with conflict.”

“I understand the concept of where they’re trying to go with this, but I really don’t think it’s effective.”

“By and large, I’d say 95% of the faculty do not design a group project in a manner that it would be similar in organization and grading…. But, when you work in the workplace, if somebody doesn’t pull their own weight, they’re either fired or they are reassigned.”
“…in an online environment, it doesn’t simulate the real world.”

Overall, participants felt that although online learning groups did not completely replicate ‘real’ work groups, there was a common agreement that working in online groups did provide the necessary exposure to various attitudes and work ethics that did transfer to the ‘real’ world.

“…you’re not going to like everyone you work with and that’s just like the real world. And, it’s getting you used to working with other people, communicating with them, meeting deadlines, and working with people from different places.”

**Self-reported Social Loafing**

Previous research (Karau & Williams, 1993) suggests some participants may be unwilling to report or (in some cases) are completely unaware they are engaging in social loafing behaviors. In order to examine the efficacy of this statement, interview participants were asked the following question: “Have you ever not contributed fully to a group project?” In line with previous research suggestions, there were very few self-reported social loafing incidents. The large majority of participants indicated a very strong denial for having ever participated in social loafing behaviors and in several cases reported the opposite extreme for always committing fully to any group project.

“I don’t want to let anybody down and I always work really hard in groups. I always feel a very strong sense of responsibility to everyone.”

“I think I’ve always tried to put my fair share of work and do it if not more. …I usually try to go over and beyond what is expected, and so sometimes I might even do more than is required.”

The participants who acknowledged having engaged in social loafing did so with explication:

“…sometimes you’re just tired and you’ve already been in class for hours then you’re going on to your second class and it’s 9 o’clock at night and you just want to go to bed. You get tired and you’re like, „Well, I don’t need to participate quite as much.‟”

“So there have been times where I did not submit in a timely manner or what they thought would be a timely manner. But once they understood my situation, they became more understanding.”

“And, I know I probably could have done more. But I was so annoyed and frustrated and disillusioned at that point that I just did the bare minimum that I needed to do to get us through the presentation and didn’t give it my 100%. Because I didn’t feel like others were contributing…. ”
Overall, participants who self-reported social loafing behaviors also felt that their behavior was justified either by the behaviors of others or by their individual situation. Participants indicated that justifiable environmental conditions included work expectations, family issues, and the reduced input of fellow group members. This supports previous definitions of sucker effect, which proposes that one reason individuals engage in social loafing is that they perceive that others are reducing their contributions. Sucker effect will be discussed in greater detail below.

**Social Loafing Others**

Examining the existence and support of antecedents to social loafing is the primary focus of this research. Although the survey can provide quantitative data regarding these issues, it is hoped that more details regarding student perceptions of the social loafing phenomena may surface in participant interviews that may have been previously overlooked or ignored. Therefore, participants were asked the following question: “Have you worked with group members who did not seem to do their fair share of the work?” If participants responded in the affirmative, they were also asked, “Why do you think they didn’t do their fair share of the work?” Only one participant indicated that they had never encountered another group member that they felt were social loafing. The remaining participants, once again, had strong opinions regarding their exposure to other’s social loafing but were generally mystified regarding what prompted the behavior.

“Oh, that’s like in every single group I’ve worked with. There is always one person or two people that do that. You know it’s probably…it’s hard to say because it’s easy for me to say they aren’t doing their work. Well, they are not doing their work because of what my expectation is? Am I being realistic? Uh, was I being realistic at the time?”

Many participants provided ideas about why the individual(s) participated in social loafing behavior but admitted that only that individual knew whether their perceptions were accurate. Although participants used a variety of adjectives to describe their group experiences (including annoying, aggravating, and enraging), the most frequently used adjective was “frustration.”

“…she didn’t do any of the assignment and I’m doing almost the whole entire assignment. And it was very frustrating ‘cause there’s a lot of work and ‘cause it’s very frustrating trying to get her to do anything. But, I think that’s definitely the most frustrating because you have limited time trying to get assignments done between work and school and then your partner doesn’t do any of the work.”
“I get very frustrated working in online working groups because most often, there is an unbalanced distribution of the work.

Many participants voiced very emotional responses when recalling social loafing encounters:

“The students still did not do their own work. But all of us were so enraged….”

“Some people just don’t care.”

“…some just don’t have the work – the work ethic of others.”

“And some of the other people were just like they didn’t want to do – even if it was just a little bit, they didn’t want to do it…period.”

“…if she pulled a great grade and if she didn’t..yeah, you got to love those.”

“The guy…would never, ever, ever, ever complete his stuff on time and if he did, he wasn’t doing it right.”

Many participants also directed their frustration on the ease with which the social loafer deceives the faculty member and drops the responsibility at the feet of their fellow group members while the faculty member remains gleefully in the dark.

“…there are superior students that are being pulled down by underperformers and people that shouldn’t be graduating that are pulled up by people that take the initiatives.”

“…people are able to just – just fly by…”

“I just think it’s too easy for people that are, you know, prone to not holding up their end of the deal to escape.”

“…she was utilizing our information and not submitting hers but she was able to get the grade that was submitted by the professor.”

“…invariably, every time I’ve done a group project, you have one or two individuals that actually do the work and those that coast by on other people’s coattails.”

The general sentiment of the participants responding to the question about their encounter with a social loafer was usefully summed up by one participant:

“There’s always somebody who doesn’t want to pull their weight. I mean, it always happens. It never fails.”
Recommendations for Faculty

Often, students have a clearer perception of the social interactions within the classroom than the instructor. To examine student perceptions regarding what recommendations they might have to improve online learning groups, participants were asked the following questions:

- “If you were given total control over an online group project, how would you organize it to work optimally for student learning?”
- “If you had one minute to speak frankly to faculty who implement online groups, what would you tell them?”

Participants (as a whole) had more responses to this question than all of the other interview questions. In fact, several of the themes derived from the suggestions made for improving online learning groups and recommendations for faculty. The following list is a compilation of recommendations made by students for faculty to improve the use of online learning groups within their courses:

- Stay on top of the groups. Don’t wait until it is too late to intervene.
- Do not allow abusive situations to develop within the groups.
- Ensure groups stay on track.
- Break down larger projects into manageable pieces.
- Manage expectations by posting clear and meaningful instructions.
- Observe group work areas for individual participation levels.
- Use break out groups in synchronous groups.
- Assign both individual and group grades.
- Incorporate peer evaluations.
- Don’t punish students for requesting help with their group.
- Do not allow students to receive a passing grade if they didn’t participate.
- Encourage the assignment of group roles.
- Implement timelines, deadlines, and clearly provide milestones.
- Require groups to meet on a regular interval.
- Be willing to intervene and assist the group should the need arise.
- Do not intervene unless assistance is requested by group members.
- Create pre-defined consequences for non-participation.
- Large projects should be preceded by several smaller assignments.
- Allow time for group members to get to know each other.
- Provide a set of recommendations for working in effective groups.
- Do not assign groups randomly. Use predetermined criteria.
- Consider implementing a group contract.
- Be considerate of conflicting roles of your students (e.g., family, work).
- Respond to your students in the timeframe stated in your syllabus.
- Provide continual, timely, and supportive feedback.
• Assign group pages (and monitor) in Blackboard.
• Consider a proctored mid-term and final.
• Conduct a face-to-face or virtual orientation to meet faculty and students.
• Provide prominent instructors for contacting faculty.
• Consider an online learning orientation to establish online expectations.
• Incorporate more technology to assist learning.
• Utilize chat and audio rather than exclusively chat features.
• Conduct scheduled meetings with groups to monitor progress.
• Explain the rationale behind group requirements.
• Faculty should make a concerted effort to master the technology.
• Enable file sharing, chat, and discussion board features for groups.
• Be more organized and provide a structure

**Conclusion**

In this chapter we examined both the qualitative and quantitative results that included analysis of web-based surveys and participant interviews. In the next chapter, the results of the qualitative and qualitative data analysis in combination with previous literature will be utilized to provide answers to the research questions in this study. In addition, the limitations of this study will be examined, solutions provided, and future research areas explored.
CHAPTER 5

ANALYSIS AND IMPLICATIONS OF RESULTS

This chapter will examine the results of both the quantitative and qualitative data reported in Chapter 4. Each of the four research questions for this study will be discussed in turn with an assessment of both quantitative and qualitative results being examined together. By examining the quantitative and qualitative data together, I hope to shed light on both the positive and negative perceptions students have regarding online group participation.

Purpose of Qualitative Data Collection

It is important to remember that the main purpose of collecting qualitative data in addition to quantitative data was to support the quantitative results, expand our understanding of the quantitative data, and gather additional data that quantitative methods alone may not reveal. Mathison (1988) suggests it is the responsibility of the researcher to “make sense of what we find” by applying “a holistic understanding of the specific situation and general background knowledge” to construct “plausible explanations about the phenomena being studied” (p. 17). Participant interviews provided an excellent opportunity to expand our knowledge of student perceptions regarding online learning groups rather than simply measuring antecedents previously identified in the literature review. By querying participants about their online experiences, a richer picture emerged that expanded our knowledge regarding what issues students perceive to be important (or unimportant) when participating in online learning groups.

Research Question 1

RQ1: Does the perception of social loafing and free riding exist within online learning groups at the 2 year, 4 year, and graduate level?

 Perception of Social Loafing of Others

The first research question was examined utilizing both quantitative data from the survey and supporting data collected during the interviews. The web-based survey asked participants whether they personally engaged in specific social loafing behaviors. Participants were also asked how many of their fellow group members they perceived to be engaging in these behaviors. When answering the questions regarding their perceptions of other group members, participants were asked to indicate how many of their fellow group members they perceived to be participating in each of the social loafing behaviors on a scale of zero to ten.
Unfortunately, many of the participants seemed to either be suffering from survey fatigue, misunderstood how to answer the question, or simply did not pay close enough attention to answer the questions correctly. This resulted in many participants listing inappropriate or illogical responses to the items from this scale. Examples included reports of loafing that exceeded the number of individuals in the group (e.g., 5 loafers in a group of 3), indications of no group membership (e.g., not actually a group), exclusion of self in group size reports, and listing several responses for an item. Thus, the validity and reliability of the scale was not adequate for inferential parametric statistics. The Social Loafing of Others scale was removed from the inferential statistics because the integrity of the scale was questionable.

Since the data was not adequate for inferential parametric statistics, an attempt was made to parse through the data to determine whether any of the data could be salvaged. Data that was obviously corrupt was eliminated from the data set and the remaining data was analyzed for descriptive statistics. Unfortunately, due to the participant errors and elimination of questionable data, a shadow is cast on the integrity of descriptive statistics. Fortunately, the study included a qualitative component that will help clarify whether the descriptive statistics can be trusted or discounted for this research question.

On the web-based survey, participants perceived that an average of 28% of their fellow group members deferred responsibilities they should have assumed to other students within the group. In addition, participants perceived that approximately 27% of their fellow group members put forth less effort than other group members and were less likely to volunteer to complete tasks if another student was available to complete the task. This perception was confirmed during the participant interviews. Only one participant indicated that they had never encountered another group member that they felt were social loafing. The remaining participants had strong opinions regarding their exposure to others’ social loafing. Many participants voiced very negatively charged emotional responses when recalling social loafing encounters. Participants used a variety of adjectives to describe their group experiences with social loafers that included annoying, aggravating, enraging, and frustrating.

These emotionally charged responses and strong opinions reinforce the quantitative data from the web-based survey and diminish the doubt about the integrity of the quantitative data. Agreement between the qualitative and qualitative results indicates that the perception of social loafing of others within the group does exist within online learning groups.
Perception of Social Loafing Self

Participants responded to the questions about their personal engagement in social loafing behaviors on a Likert scale of 1 to 5. A response of 5 indicated that the participant strongly disagreed that they engaged in that social loafing behavior, while a response of 1 indicated that the participant strongly agreed that they participated in that social loafing behavior. Statistical analysis determined the Mean response for this subscale item was 4.21. This indicates that, on average, participants did not believe they had engaged in social loafing behaviors.

In keeping with the survey results, during the interviews there were very few self-reported social loafing incidents. In fact, the large majority of participants voiced a very strong denial for having ever participated in social loafing behaviors and in several cases reported the opposite extreme for always committing fully to any group project. These views align with prior research (Karau & Williams, 1993) that suggests participants may be unwilling to report or (in some cases) are completely unaware they are engaging in social loafing behaviors.

Participants who admitted to having engaged in social loafing behaviors felt that their behavior was justified either by the behaviors of others or by their individual situation. Participants indicated that justifiable environmental conditions included work expectations, family issues, and the reduced input of fellow group members. They also had the perception that other group members understood and accepted the behavior once they explained why they were not participating fully. Interestingly, there was no evidence to suggest that any group members felt that not fully participating in a group project was acceptable for any reason. Therefore, it is possible that these perceptions of acceptance are false and only serve to assist the group member in justifying their lack of performance.

There was ample evidence of participants engaging in both sucker role and sucker effect. Sucker effect is defined as a reduction in personal contribution to the project due to a perception that other group members are reducing their contributions. Sucker role is defined as increasing individual contributions due to a perception that other group members are reducing their contributions. Since succumbing to the sucker effect is in itself social loafing, the sucker effect was measured on the web-based survey. However, sucker role was not included in the survey since playing the sucker role involves increasing ones contributions rather than decreasing them.
Research Question 2

Are there statistically significant relationships among the 5 social loafing subscales: (1) social loafing self, (2) task visibility, (3) individual contribution, (4) distributive justice and (5) dominance/aggression?

H₀: There will not be statistically significant relationships among the 5 social loafing subscales.

Hₐ: There will be statistically significant relationships among the 5 social loafing subscales.

Statistical analysis supported the alternate hypothesis for Research Question 2, which stated: there will be statistically significant relationships among the 5 social loafing subscales. The strongest correlation was found between dominance/aggression and social loafing self and indicates that as dominance/aggression increases, social loafing self also increased. A negative correlation was discovered between social loafing self and contribution. This indicates that social loafing self increases as the perception that the contributions of others are decreasing. A negative correlation between social loafing self and distributive justice was also discovered, indicating that social loafing self increases as the perception of distributive justice decreases.

Dominance/Aggression and Social Loafing Self

Both the qualitative and quantitative results indicate that dominant and aggressive behavior in the online learning group can impact the decision to social loaf. However, the existence of previous research on the effects of dominance and aggression on social loafing is relatively non-existent. Although dominance and aggression has been studied in other online venues such as discussion boards (Jeong, In Press; Jeong, 2010), the research regarding impact within the online learning group is still sparse. However, the results of this research support previous research conclusions regarding aggressive and dominant team members. Michaelsen, Fink, and Knight (1997) suggest that the dynamics of this behavior on more reserved members can result in a decrease in participation due to a feeling of intimidation. This concurs with the negative correlation between dominance/aggression and social loafing self. Palloff and Pratt (2003) suggest that rude or angry personal attacks on a classmate can have a negative influence on group dynamics in that the students report feeling unsafe, insecure, and inhibited in expressing their personal feelings and beliefs. This agrees with statements made by interview participants in this study. Although few of the interview participants indicated that they had
personally been affected by a dominant or aggressive group member, they were quick to add that they completely understood how others could be swayed by such behavior. Some of the participants indicated that, on several occasions, they had experienced this type of group participant. They stated that aggressive or dominant personalities frequently had to be met with the same mindset and would quickly back down if challenged. However, they commented that standing up to these types of personalities might be difficult for people with more timid personalities or for students who were unsure of their own contributions. A few of the participants reservedly provided evidence that they had succumbed to a more dominant group member.

“So, you think, „Oh, well, I guess I don’t need to answer. Maybe what I have to say isn’t quite as important as what they’re saying.‘”

“I think I take more of a backseat sometimes if there are people are – I guess the word isn’t really aggressive, but just more prominent with their opinions. Lots of times I don’t really want to make waves and so if people are really adamant about things and they’re saying a lot on the subject then I’ll just kind of go along with it. So, I guess, in that then I contribute less „cause I wouldn’t be as vocal.”

A few of the interview participants also indicated that they were that aggressive/dominant individual when asked if they had experienced that type of behavior in their online learning group. These participants felt that being aggressive and dominant was a necessary evil in many circumstances within a group. They primarily cited instances when no other group member would volunteer to take charge of the group or be the group leader. They also felt it was important to step in and become dominant and aggressive when the group was straying off target or away from its intended goal. However, it is important to also note that other participants indicated that they had encountered group members who, in their words, “were just mean and nasty.” These group members were viewed as being non-productive and disruptive to group activities.

This research supports previous research that suggests dominant group members can manipulate other individuals’ perception of unique group contributions, intimidate them into believing their contributions are not necessary, and negatively influence their desire to contribute to the group project.
Contributions and Social Loafing Self

This research supports previous research on group contributions. Liden et al. (2004) suggest individuals will often withhold effort, seek to achieve personal rewards, and calculate ways to maximize benefits as long as they perceive that doing so will not affect their outcomes. Lawler (1971) suggests that if the individual effort becomes highly integrated into the group effort and rewards are allocated accordingly, motivation may also suffer. More current research in equity theory takes this one step further. Equity theory proposes that individuals will continually seek equitable relationships. If an individual discovers that a particular situation is inequitable, he or she will attempt to restore equity to the relationship. The individual may attempt to restore actual equity by reducing or increasing inputs, raising individual outcomes, or even by more manipulative means such as theft or sabotage. Negative aspects of this behavior can appear as negative comments and opinions of others and justification of poor opinions and treatment (Walster, Berscheid, & Walster, 1973). This behavior can be clearly seen in the comments of interview participants. Interview participants voiced displeasure at having to work with group members who were negative, rude, mean, nasty, and difficult. Participants also related stories about how they had to intervene between group members to prevent harassment or other negative behaviors against fellow group members.

Although the majority of interview participants indicated that they always contributed to the fullest or the best of their ability, there were a few who admitted to engaging in either the sucker effect or sucker role based on the contributions of others. One participant stated that he had, on occasion, not contributed fully because he felt that his inputs were not needed or valued. He perceived that work was being accomplished without his contributions and, therefore, his contributions were not needed. Most participants indicated that they found it almost impossible to significantly reduce their inputs if they perceived others were not contributing due to grades. Almost all participants indicated that the final grade was the most important aspect of the group learning experience. As such, they would frequently increase their efforts if they felt others were decreasing their contributions. However, they would rarely decrease their inputs if others were decreasing since this would have a devastating impact on their final grade.

This makes it important to consider the conditions under which individuals are social loafing due to decreased contributions. Based on the quantitative results, it is apparent that this occurs relatively frequently. However, the quantitative data does not tell us when this is
occurring. This may indicate a reluctance of an individual to admit one-on-one to engaging in social loafing behaviors. Some respondents may feel more comfortable admitting these behaviors beneath a cloak of anonymity. It is also possible that a larger sample of qualitative participants might shed more light upon the complexity of social loafing reports. Finally, the presentation of information might vary based upon the context of the information provided to the participant. For instance, presenting a scenario based on equity or asking participants about situations where they felt that the workload was inequitable might evoke more detailed information during semi-structured interviews. This might remove the negative connotation of social loafing and put the same behavior into a new context of reestablishing equity within the relationship.

**Distributive Justice and Social Loafing Self**

*Distributive justice* is how an individual perceives the distribution of rewards or compensation among group members. The perceived fairness of the procedures and policies associated with distributed justice is termed *procedural justice*. This takes us back to the discussion on contribution. The perception may very well be based upon context. As indicated above, procedural justice and equity theory are synonymous names used in differing contexts. Kidwell and Bennett (1993) proposed that individuals may alter their individual work effort if there is a perception of unfair distribution of rewards – in other words, if there is a perception of inequity. This research study supports previous research in the social sciences (Liden et al, 2004; Karau and Williams, 1993) that suggests there is a significant correlation between procedural justice and social loafing; an individual’s perception of the fairness in distribution procedures may influence the individual’s effort in group projects. This research study expands upon previous research to suggest that feelings of inequity regarding procedural and distributive justice may result in social loafing. However, as indicated above, although the quantitative data strongly suggests that this is occurring, the qualitative data is not as strong. Although participants indicated they had participated in social loafing in the past, few were willing and able to provide examples of when this occurred. Of the few participants that indicated they had engaged in social loafing behaviors, the reasons provided did not support feelings of inequity toward procedural or distributive justice. Admission of social loafing usually was accompanied by a qualifier. For instance, an individual might recall having reduced his input…but, it was because his children were sick with the flu, because he had a big project due at work, or because
he had major family obligations that interfered. Interestingly, these qualifiers also came with justification. Many of the participants were also quick to add that when they explained their situation to their fellow group members, the group easily understood their situation and had no objections to their work reduction. Interestingly, when describing instances where other group members loafed, only one participant indicated an acceptance and that was for the death of a child.

**Research Question 3**

Are there statistically significant differences among the community college, undergraduate, graduate and Naval War College students on the 5 subscales of the Social Loafing Survey: (1) social loafing self, (2) task visibility, (3) contribution, (4) distributive justice, and (5) dominance and aggression?

\[ H_0: \text{There will not be statistically significant differences among the community college, undergraduate, graduate and Naval War College students on the 5 subscales of the Social Loafing Survey.} \]

\[ H_A: \text{There will be statistically significant differences among the community college, undergraduate, graduate and Naval War College students on the 5 subscales of the Social Loafing Survey.} \]

Analysis revealed several significant differences between the student groups on contribution. A significant difference was discovered between the student groups on perceived task visibility. The tests also revealed a significant difference between the student groups on individual contribution. Differences were not found on social loafing self, distributive justice or dominance/aggression. Naval War College students scored significantly higher than the community college students, graduate students, and undergraduate students on contribution. The difference between community college students and graduate students on individual contribution was also significant. The statistical analysis supports the alternate hypothesis for Research Question 3 that stated: there will be statistically significant differences among the community college, undergraduate, graduate and Naval War College students on the 5 subscales of the Social Loafing Survey.

These results are interesting when we consider the student goals and expectations of each of these groups. Community colleges are frequently comprised of students who have either not yet committed to an educational goal, have delayed college enrollement after high school, attend part-time, work full-time (Taylor & Flermoen, 1993; Wattenbarger & Albertson, 2004; and
Bailey, Jenkins, & Leinbach, 2005), or who have had to postpone educational goals due to family or work obligations (Taylor & Flermoen, 1993; Gooden & Matus-Grossman, 2002). Their educational goals are generally designed to get a certificate/degree, to transfer to a four year college, gain job skills, create better working conditions at their current employment (pay or promotion), or personal enrichment (Bailey, Jenkins, & Leinbach, 2005; Roman, 2007). Few of these students voice strong desire to begin a new career at this point in their lives. Community college students who are recent high school graduates may be in a transitional state in their education. Many of these students have a tenuous tie to work goals, since many are already entrenched in their chosen careers or are working odd jobs to support themselves in their transitional state. Although many of these students may express a desire to earn a degree or certificate, only a small percentage of these students actually achieve this goal (Bailey, Jenkins, & Leinbach, 2005). According to Gardner, Jewler, and Barefoot (2007) some of the advantages to attending college include: increased intellectual interests, increased tolerance of others, greater self-esteem, making a difference in the world, becoming more flexible in world views, have children with increased potential in life, become efficient consumers, increased ability to deal with bureaucracies (e.g., legal system), and increased earning power. However, few of the community college students are voicing these expectations with the exception of increased earning power. These students differ from the graduate and Naval War College student in these two important aspects: tie to work goals and educational expectations. Although each of these student groups may have personal work goals, the direct tie and impact their educational achievements have upon these goals vary greatly. We can see this impact by examining the statistical results on task visibility and contribution.

Naval War College students scored significantly higher than the community college students, graduate students, and undergraduate students on contribution. The difference between community college students and graduate students on individual contribution was also significant. These results are interesting given the differences between each of the educational environments. Karau and Williams (1993) suggest that individuals will be unlikely to exert extraordinary effort unless they view their individual task within the group project as meaningful. It is precisely this “meaningfulness” that is addressed by the contribution subscale, which measures how unique and important the individual feels his/her contribution is to the project as a whole. However, the perception of what “meaningful” means to each participant is
completely subjective. Within the context of a graduate school program, an individual may feel that for his/her contribution to be meaningful, he/she must have task visibility and receive individual recognition for the impact their individual contribution on the project. In the context of the Naval War College program, an individual may feel that his/her contribution was meaningful if it led to group goal achievement, regardless of individual task visibility or personal recognition.

By scoring high on this subscale, Naval War College students were indicating that they did not feel their individual contributions were of any greater importance than their other team members’ contributions. This is in keeping with a military team perspective. Having participated in both environments, there is a major difference between the perspectives of the two groups: teamwork. Within the military environment, teamwork is a highly valued and measured quality in both personal growth and professional development. Graduate students in the Naval War College have been admitted based upon their prior success in both their personal and professional lives. Admission to the Naval War College is highly preferential and is considered a significant stepping-stone to promotion and career success. In addition, all classroom performance within the Naval War College is directly reflected in each student’s performance evaluation report. This directly ties work and school performance, giving each student higher incentive to perform and excel in scholarly activities.

Graduate students in public universities, although also subject to high performance expectation, are also encouraged to stand out from the pack. Graduate student performance is based largely on overall GPA rather than teamwork. Under these conditions, students may begin to value grade over participation, visibility, or performance value since these aspects do not favorably impact their future success. Students confirmed these assumptions during interviews where they indicated little concern over whether or not their instructor was aware of their individual contributions as long as they received a good grade on the assignment. Interview participants indicated that they were willing to take whatever steps they considered necessary in order to achieve the desired grade. These steps might range from doing another group member’s work to completing the entire project alone. Although participating in the sucker role left bitter feelings toward other team members and the professor, participants felt the price was worth the grade. Interestingly, many of the participants also indicated that successful grade goals left them
with a propensity to repeat the behavior in the future. This behavior results in little to no concern for the group goal and exclusive concern for the individual goal.

This differs significantly for the Naval War College students, where the group goal is given utmost priority over any individual goal. Many military students are intimately familiar with the mantra, “cooperate and graduate.” In a military environment, if the group is successful, then all group members are successful. Performance is based on the ability to perform well with others and to support the team effort. Promotion is based not on personal achievement but rather on how one’s personal contributions aided in the success of larger units.

**Research Question 4**

Are the following subscales statistically significant predictors of the participants’ perceptions of social loafing self: (1) task visibility, (2) contribution, (3) distributive justice, and (4) dominance and aggression?

H₀: Task visibility, contribution, distributive justice, and dominance and aggression will not be statistically significant predictors of social loafing self.

Hₐ: Task visibility, contribution, distributive justice, and dominance and aggression will be statistically significant predictors of social loafing self.

Statistical analysis supported the alternate hypothesis for Research Question 4 that stated: task visibility, individual contribution, distributive justice, and dominance/aggression will be statistically significant predictors of social loafing self. Together the predictors accounted for a significant amount of variation ($R^2 = .34$) in the criterion. This study provides further support that these variables are not only significant predictors of social loafing behaviors in the face-to-face classroom and laboratory but in the online environment as well.

It is important to establish what might otherwise seem to be an obvious conclusion. We could say that we “expected” the predictors to be significant, but that doesn’t carry the same weight as it might in other environments. The importance of determining whether the variables found to be significant predictors in the laboratory and face-to-face environment are also significant in the online environment becomes clear when you begin to consider the impact of the change in environment. Much of group communication is based on body language, facial expressions, and eye contact. There are many non-verbal cues used to communicate that are not available to the online group participant. Cues that we ordinarily take for granted are suddenly not present. This may lead to miscommunication within the online group. Although many of the
LMS (learning management systems) used in education today have the ability to incorporate real-time audio and textual emoticons, these cannot completely replace face-to-face communication. These face-to-face cues provide information that impacts our decisions regarding whether we like or dislike other individuals, whether they are being truthful or deceptive, and how we manage difficult situations. It is important to recognize that social loafing is a social psychological factor that can be highly influenced by these visual cues. It is due to these factors that we must establish whether social loafing can be influenced by these variables when these cues are missing.

This research question asks if the subscales are “significant predictors” of social loafing behaviors. This is a purely quantitative question so there was no qualitative discussion for this portion of the study.

Qualitative Data Not Addressed in Survey

Not all qualitative data was directly tied to a research question. The web-based survey was created based upon previously identified social loafing antecedents in the face-to-face classroom. Therefore, the survey was created with pre-defined themes. However, the participant interviews were conducted to support the quantitative data, expand our understanding of the quantitative data, and gather additional data that quantitative methods alone may not reveal. The interviews were designed to elicit explanations and participant stories that were exemplars of both positive and negative experiences while working in online learning groups. Therefore, the predefined themes designed into the survey were expected to appear but were not pre-designed into the interview questions. By utilizing open-ended questions, it was hoped that we would gain a greater understanding of student perceptions regarding the predefined survey themes as well as possibly discover new themes not previously identified.

Through the participants’ descriptions of their experiences, additional factors where identified that bear further examination. Six major themes were identified with thirteen sub-themes (Table 17). This section will compare and contrast previously identified themes and will discuss new themes identified by interview participants.

Social Loafing Antecedents Identified in Interviews

Participants discussed their perceptions regarding two previously identified antecedents: intimidation and domination. These antecedents are discussed in detail above. Through their
stories and experiences, participants identified three new social loafing antecedents: personal schedules, poor communication, and group grade. These three antecedents do not stand alone in their influence on the occurrence of social loafing behaviors but rather work in concert and are difficult to separate and isolate, based on available data.

**Personal schedules, poor communication, and group grade.** Personal schedules emerged as a theme by being identified by participants as an aspect of online groups that negatively influenced group productivity. Participants voiced issues related to balancing their work, family, and school life. Participants frequently indicated that their families were a major source of stress that interfered with completing assignments in a timely manner. They also made it clear that family would always take precedence over school-work and deadlines regardless of circumstances and grades. Although they clearly felt antagonism toward others who had used similar “excuses” for not completing their work, they felt that when they had personally encountered these situations that other group members were understanding to their plight and overlooked their minimal or complete lack of contribution. There seemed to be a disconnect between what participants expected of others and of themselves. However, based on participant responses, this disconnect doesn’t necessarily become a negative issue unless group grades are involved.
Participants indicated extreme dislike of group grades due to their perception there are almost always social loafers or “professional” students who fail to submit assignments on time, do not communicate with fellow group members, or completely disappear for lengthy periods of time during the semester. Excuses for not participating fully frequently stem from family and work issues. Although individual group members can sympathize with the issues causing the lack of contribution and communication, they stringently draw the line when their personal grade is affected. They find this practice unfair, considering that a solution to the problem is
completely beyond their control. Since there is no resolution to the problems that frequently occur, their emotional response for being placed in an impossible situation could be anticipated. This catch 22 leads students to resent both the faculty member who placed them in this situation and then “punished” them with an all-for-one retributive system (i.e., a group grade). These feelings of discontent then extend outside of specific situations and lead to negative feelings of group work in general. This is especially true of students who have experienced this negative learning in multiple classes. Those participants who indicated that this “always” happens in online groups voiced extreme emotional responses to participating in online groups.

Some participants voiced amenability toward participating in groups in situations where no group grade is issued. As an alternative to the “no group grade” qualifier provided by participants several recommended peer evaluations or other measures where points could be deducted from group members for reduced contributions. Participants felt this provided a means of fairness to the situation by rewarding the innocent and punishing the offenders. This is directly in line with the economics equity theory (Adams & Rosenbaum, 1962; Leventhal et al., 1969; Leventhal & Bergman, 1969).

Equity theory proposes that individuals will continually seek equitable relationships. If an individual discovers that a particular situation is inequitable, he or she will experience stress. Individuals will attempt to alleviate this stress by attempting to restore equity to the relationship. Research suggests that individuals may seek to restore the actual equity, or, if unable to do so, will seek to restore psychological equity (Walster, Berscheid, & Walster, 1973). The individual may attempt to restore actual equity by reducing or increasing inputs, raising individual outcomes, or even by more manipulative means such as theft or sabotage. Individuals may attempt to restore psychological equity by denigrating the position of others or distorting the perception of others’ inputs and outputs. Negative aspects of this behavior can appear as negative comments and opinions of others and justification of poor opinions and treatment (Walster, Berscheid, & Walster, 1973).

Interestingly, although participants voiced annoyance and frustration when working with other group members who had conflicting personal schedules, they felt the same issue provided an increase in diversity, provided various viewpoints, and maximized the potential of the group. This presents another dichotomy for participants on how to deal with these issues. Although they value the unique perspectives provided by participants who work in various industries.
across the country, they also resent the frequent disruptions caused by these individuals due to missed meetings, late or incomplete submissions, and communication gaps.

The quantitative data supports the voiced opinions of the interview participants. Distributive justice was one of the predetermined subscales for the web-based survey. Respondents did not feel that their grades were an adequate reflection of their work contributions. No quantitative connection can be made between perception of distributive justice and group grade since group grade was not a subscale on the survey. However, the qualitative interviews did make a connection between the two, since participants indicated that faculty members were aware of the problem. Participants stated that faculty, even when made aware of a problem, told students that they should “deal with it” within their group. Participants felt that they were left holding the bag by faculty with no recourse. Some participants felt this was done in order to help them learn how to deal with group dysfunction while others simply felt betrayed.

Although these are difficult issues to deal with in an online classroom, ignoring the issue or justifying not dealing with the issue by deflecting the results as learning to work in a group may lead to severe consequences either within the course or once it is completed. Even more serious are the long-term consequences of not providing resolutions to these situations for students. It is easy to discount the influence of faculty on the long-term consequences of poor online group experiences. After all, it is just one course in many that students will experience prior to entering the workforce. However, the truth is that many of these students are already actively engaged in the workforce and are anticipating the degree will help them attain promotions. Many of the interview participants indicated they were assistant managers or were counting on the degree to assist them in achieving a management position. Faculty who do not address issues of distributive justice and equity within online learning groups are breeding malcontent and negative feelings toward virtual collaboration. With the increasing implementation of virtual collaboration in corporations today, faculty are, in effect, sending ill prepared and negatively predisposed managers into the workforce.

Social Loafing Impact

Dislike of groups, sucker effect, and sucker role. This negativity was voiced frequently by interview participants. One, major and fairly predictable, side effect of continual exposure to social loafing behaviors in groups is the development of a dislike of working in
groups. Some of the participants in this study voiced a more significant dislike of groups than others:

“Even face-to-face, I don’t like groups.”

“…by the end of the program, I hated group work.”

“…it was such a horrible experience, I never did it again.”

When examining the potential reasons for this response, it is important to review the evidence of sucker effect and sucker role in both the quantitative and qualitative data. During the interviews, the main reason participants cited for engaging in the sucker effect was equity. Considering that equity theory indicates that feelings of inequity may result in participants engaging in other behaviors to achieve equity other than reducing work effort. These behaviors may include denigration and punishment. Although none of these behaviors were directly voiced by the participants in this study, participants did voice an interest in peer reviews and other measures that might moderate the negative effect of group grades (innocent are punished, guilty are rewarded). These feelings directly reflect a desire for denigration and punishment as indicated in equity theory. Participants voiced a desire to utilize peer reviews as a means of reducing the grade of the social loafer. For high achieving students who center on their grade as a reflection of performance, they feel compelled to engage in the sucker role when faced with a social loafer. Many of the interview participants indicated that their main reason for engaging in the sucker role was to salvage or maintain a good grade. Unfortunately, engaging in the sucker role will then further increase feelings of inequity, increase the participants dislike of online groups, decrease their perception of distributive justice, and subsequently increase their desire to achieve equity by other means.

It is critically important to remember that this study examines student perceptions and is not necessarily concerned with whether those perceptions reflect actual facts. When studying these psychosocial behaviors, it is important to note that participants will elect to engage or not to engage in psychosocial behaviors based upon their perceptions of what is occurring within their group.

Social Loafing Moderators

During the qualitative interviews participants identified additional moderators that had not been identified in previous research. It is important to mention these since they were not
designed into the research study and the data collection was ancillary. The additional moderators described by participants were:

• Positive Communication
• Feedback
• Role Assignment
• Deadlines
• Clear Expectations
• Peer Evaluations

There were no specific questions that elicited these new moderators; however, four questions were responsible for eliciting the majority of them. During the interview, participants were asked:

• “What did you like best about your group experience?”
• “If you were given total control over an online group project, how would you organize it to work optimally for student learning?”
• “If you had one minute to speak frankly to faculty who implement online groups, what would you tell them?”
• “Of all the things we talked about, what is the most important to you?”

If I had designed a question to summarize these responses, it might have been, “What things led to success in your group project?” or “What can prevent group members from social loafing?” This is generally the context of the conversation within which these comments appeared.

**Positive communication.** Positive communication was the most frequently cited group attribute that contributed to group success. Strong communication skills were indicated as a measure of success both between the group members and between the group and the instructor. Participants indicated that strong communication skills were necessary for group success. They indicated that strong communication included the willingness to learn how to get along with others, negotiate, identify and capitalize on the strengths of others, and listen to opposing viewpoints. Participants also felt that faculty played an important role in the effectiveness of group communication. They indicated that faculty frequently fell short in their efforts to ensure timely responses to student inquiries and were known to leave students to resolve conflict even after requests for help were voiced.

**Feedback.** Participants indicated that timely and targeted feedback was necessary for success. Feedback referred to both student-to-student and faculty-to-student interactions. Participants felt that faculty should not assign students to groups with a set of instructions and walk away. They thought it was critical that faculty keep their fingers on the pulse of the group
to ensure that positive progress was being achieved. This wasn’t intended to ensure that there was never conflict or disagreement, but rather to prevent roadblocks – those instances where the group members feel they cannot overcome the issues at hand or deal with a particularly difficult group member. Participants felt that the faculty should maintain task visibility without direct interference unless it was necessary or requested by fellow group members.

**Role assignment.** Participants felt that role assignment assisted the group by keeping everyone focused and on track. Specified roles also provided group members with valuable experience (especially leadership roles) that they may not otherwise have had a chance to garner. Participants also felt that role assignment provided students with a feeling of project ownership, which further increased their motivation to do well.

**Deadlines.** Participants indicated that specified timelines and firm milestones provided the incentive to work harder and stay motivated. They also felt that posting deadlines and timelines increased task visibility both student-to-student and student-to-faculty.

**Clear expectations.** Participants indicated that misunderstandings between group members were common and that they lead to false expectations of individual group members. They emphasized the importance of making sure that each student understood what was expected both individually and as a contribution to the group effort. If participants have clearly defined expectations, then it is expected they would be more likely to be actively engaged and timely in their submissions.

**Peer evaluations.** Participants felt that peer evaluations could impact the emergence of social loafing and alleviate the negative perceptions associated with group grading. They also felt that peer evaluations helped to level the playing field between those who care and those who don’t. They felt that implementing peer evaluations could alleviate the negative impact of group grading by subsequently lowering individual grades for a project based upon their peer reviews.

**Recommendations for Faculty**

Participants (as a whole) had more responses to this question than to all of the other interview questions. It is important to note, once again, that these are student perceptions and may or may not reflect either reality or the expectations and values of faculty. However, it is also important to realize that just as the perception of social loafing impacts the behavior within groups, so do these perceptions. Therefore, whether or not these perceptions are based in reality, it is important for faculty to realize that they do exist and should be dealt with. For sake of
brevity, I refer back to Chapter 4 for the complete list of recommendations. The most important thing to realize is that these items need to be addressed in order to create a group friendly course. There is a plethora of ways in which these issues can be handled, including, but not limited to:

- Include a library (e.g., readings, videos, podcasts)
- Set course policies that address response times and communication preferences
- Create a “group expectations” handout
- Have students create a group contract
- Incorporate peer evaluations
- Provide group areas within your LMS and require student use
- Assign both individual and group grades
- Don’t expect students to be “group” experts – provide guidance
- Implement timelines, deadlines, and clearly provide milestones
- Consider how the task type affects group assignment
- Consider implementing an online learning orientation for groups
- Explain your rationale for incorporating groups in your syllabus

These recommendations stem from student comments and recommendations during the qualitative interviews. Many of the students felt that the addition of these items would increase their understanding and ability to perform more effectively in groups. The predominant comment centered around the increase of shared information between faculty and students would increase communication both between faculty and students and student to student.
SUMMARY, LIMITATIONS, AND AREAS OF FUTURE STUDY

Summary

Although Chapter 5 analyzed the results and related these results to past research, it is important to summarize all of the findings into one cohesive picture. Although this study supported the findings of prior research, this is a small issue to highlight. There were, however, several issues that were not only surprising but well worth highlighting as contributions to group research.

Dominance and Aggression

First, although the regression analysis demonstrated the subscales were significant predictors of social loafing, what is worth highlighting is that the subscale dominance/aggression was a much higher predictor of social loafing than both contribution and distributive justice combined. This is surprising given the strength of these two predictors (contribution and distributive justice) and the relative sparsity of social loafing research that includes dominance/aggression as a predictor. It is also important to note the support provided for this statistical analysis within the qualitative side of this research study. Some may question the combination of dominance and aggression as one subscale. When interviewing participants, it is easy to see how these are two sides of the same coin. One might even say that the difference is merely semantic.

Dominance was predominantly described by participants in terms of leadership when this description was received from participants who self-admitted to being dominant within online groups. Self-admitted dominators described themselves as providing leadership skills to an aimless group who needed direction. These individuals viewed themselves as providing the rudder to a rudderless ship. They felt the dominance of other group members was a necessity to providing the necessary guidance and direction needed by other group members. Those who encountered these individuals within the group (and did not self-admit engaging in this behavior) described these same individuals as being aggressive. Terms used to describe them were rude, aggressive, obnoxious, and know-it-alls.

In some cases participants admitted to deferring to the dominant group members due to lack of confidence regarding their own abilities. Although few participants felt comfortable admitting they had actually succumbed to the dominance of another group member, many were
adamant regarding how a dominant or aggressive individual can negatively impact the learning and contributions of fellow group members. It is this self-denial that is the second area worth special highlight.

**Self-Denial of Psychosocial Behaviors**

By listening to the dialog provided by the interview participants, we can begin to see the same type of self-denial of dominance/aggression behaviors as is apparent in the self-reported social loafing behavior. Many participants are willing to admit that others will fall prey to these two behaviors but few are unwilling to admit that they have or will be influenced by these behaviors among other group members. In addition, many faculty members may also be experiencing similar instances of self-denial regarding implementation of initiatives designed to promote learning and cooperation within online learning groups. This bears further examination to determine the possibility that opposing perceptions and self-denial behaviors are occurring in opposition between faculty and students. If this is the case, further examination of the self-denial effect should be conducted.

**Trench Warfare Analogies**

It is difficult to imagine that positive lessons in psychosocial behaviors in online learning groups can be garnered from the horrors experienced in WWI. However, there are distinct parallels between the two. Of all places in heaven and earth one would expect cooperation to occurs, the battlefield would not be one that most individuals would think to name. Of course, we would expect cooperation to flourish between allies but not between opposing combatants. However, one quickly pieces the puzzle together when reading the reports of trench warfare combatants. These brave young men were engaged in a continual battle for survival. Individually, this piece of the puzzle makes one picture the “kill or be killed” mentality. In other circumstances this may have well been the case. However, these soldiers had three things in common with their enemy that others did not: close proximity, communication, and repeated iterations of exposure.

These three factors strongly promoted an atmosphere of live and let live rather than kill or be killed. It is easy to see how these three influences prompted impromptu social agreements and retributive actions. These soldiers developed simple ROE (rules of engagement) that were heavily in opposition to those desired by their leadership. Leadership sought direct opposition in order to gain ground while the trench soldier sought methods of survival and equilibrium. This,
however, is not what is striking about their situation. The most astonishing insight is not how these three factors led to cooperation versus defection but rather how they sustained it. Despite the best efforts of commanders at all levels, the military leadership could not disrupt nor deter the trench soldiers from engaging in cooperative agreements. Leadership went as far as court martials and in some cases execution of those caught engaging in these behaviors – all to no avail. It was only the eventual institution of the raid that finally put an end to the cooperation. Interestingly, this was not through the intelligence and foresight of military leadership but rather through advanced battlefield initiatives. It was only by default that raids subsequently disrupted the cooperative agreement. By instituting raids, the military quite effectually introduced perceived defection on the cooperative agreement. By introducing defection, military leaders (also by accident) introduced retributive action and increased the need for equity.

We can now begin to see the parallels between trench warfare behaviors and those of online learners – except they are polar opposites. In online learning groups, the leadership is desperately seeking cooperation and continually observing defection. However, the similarity lies in the inability of leadership to control these behaviors. Regardless of initiatives enlisted by online learning faculty, students continually experience defection (dominance, aggression, social loafing) within their online learning groups. This in turn engages the retributive behavior just as it did for trench warfare soldiers. These acts of retribution provoke further acts of defection and the cycle repeats. These cycles will continue until each side feels that equity has been reached.

Although this is an efficient means of increasing BDA (battle damage assessment) in military engagements, this is not efficient among allies. Interestingly, with further examination of online learning groups we can find further parallels between trench warfare and online groups: missing pieces of the puzzle. In trench warfare, the three common factors in cooperative agreement development was close proximity, communication, and repeated iterations of exposure. Interestingly, these three factors are missing from online learning groups. It is precisely this association that deserves further examination within social loafing and online learning group research. If these three factors sustained continued cooperation among enemy combatants despite extreme measures to exterminate them, then they could provide the missing link to the exhumation and proliferation of cooperation within online learning groups which would in turn decrease the frequency of social loafing behaviors.
Since these two are (on a higher level of examination) polar opposites, it bears further examination to determine whether these factors can hold to further scrutiny in future research. Those who gave the greatest sacrifice may have provided future generations with even more valuable contributions than have ever been previously imagined. They might have inadvertently provided they key to cooperation.

**Social Loafing Moderators in Online Learning Groups**

This study (and others previously) have demonstrated that similar perceptions exists in both the face-to-face classroom and online learning groups regarding factors such as task visibility, contribution, social loafing self, and distributive justice. However, this study uncovered potential moderators to social loafing within online learning groups that deserve further examination to determine whether these factors could also be moderators in face-to-face classroom. One might expect that if similarities exist in one direction, then the opposite might also be true. Therefore, additional research should be conducted to further examine the voracity of the factors within online learning groups and whether application within the face-to-face environment is also applicable.

**Overlapping Perceptions**

One final area that deserves special attention is the overlapping perceptions of online learning students. I have previously noted the importance of remembering that the key to understanding social loafing behaviors is to realize that its occurrence is heavily based on perceptions of the participants. When reviewing the interview dialog, it becomes apparent that although social loafing is all but expected in the online learning group, the participants have a difficult time separating social behavior impact. Online learning students recognize that these individual behaviors occur within their online learning groups but view the issue to be much more generalized in nature. Online learning participants shared strong feelings supported by the trench warfare studies that negative behaviors within the online learning groups can be attributed to larger issues such as lack of exposure (only one group experience) and lack of communication. Further, they describe centralized frustration regarding the inability to communicate with fellow group members due to geographical and temporal restraints. These three issues are now beginning to be a repetitive theme within this research study. Participants strongly felt that firm oversight, positive communication, clear retributive actions, and equity (peer evaluations) would go a long way to moderate the negative psychosocial factors encountered within the online
learning group. Perhaps it is time for faculty to concede that they may be facing some level of self-denial in their fruitless initiatives to control dysfunctional behaviors and listen to the advice of their students. It is absolutely essential that these three recurring themes be examined in future research to determine their value and potential impact on social loafing and free riding behaviors both online and face-to-face.

Limitations of the Study

Although this study provided information that both supported previous research conclusions and provided new avenues of research to follow, there were, as in any study, limitations. In the section below, I will outline the limitations I encountered during the study as well as recommendations on possible ways to overcome these limitations in future research.

Potential for Generalization and Application in Other Disciplines

Although the sample size is much too small to generalize to the larger population, this study does contribute to the literature base and future growth and understanding of online learning group behaviors. The interactions within groups have been studied extensively in the social sciences, marketing, and economics literature but have not seen extensive exposure within the information sciences. Online learning is not discipline based but rather extends across all disciplines and is therefore applicable to researchers in all areas. The use of online groups is expanding within industry as technology increasingly incorporates new and innovative ways to communicate online. The study of online learning groups easily extends to the study of online work groups since many of these groups are exploratory in nature. Although we cannot generalize this data to all online learning groups, the information provided will hopefully increase our understanding of the motivations and attitudes of these students and thereby increase our desire to learn more about the behaviors within online learning groups. The inclusion of other disciplines and increased research within this area will result in the increased ability to moderate and, in some cases, prevent unwanted online group behaviors.

Recruiting Participants

Recruitment of participants was easily the biggest limitation in this study. The fact that the study was designed to collect information from students participating in online learning groups was in itself a major limitation. Apparently, the love affair with online groups is diminishing within the academic community. Although purely anecdotal, this observation was made from conversations I had with instructors during the recruitment phase. When seeking
faculty teaching courses that incorporated online learning groups, many faculty indicated they no longer implemented online learning groups. When queried, they indicated that they were extremely time consuming, not conducive to the online learning environment, or not appropriate for their academic area. This limited the number of course that could be mined for participants. Due to the small number of courses including online learning groups, the study was expanded to include six different colleges and universities. The same recruitment issue surfaced at each of these institutions. In total, I contacted well over 300 individual faculty members regarding participation in the research study. Of all those contacted, I only recruited 20 faculty members who agreed to participate in the study.

Further difficulty was encountered when faculty requested student participation. Many of the courses were capped at 25 participants due to their online nature. The response rate from some of these courses was as low as two participants.

Recruitment for the interviews was more difficult than the survey since many of the students work full-time jobs in addition to home and family. Most indicated that they simply did not have time to spare for an interview. Where most could work in time for an online survey, they did not have the desire to schedule a time to meet for an interview. Utilizing electronically assisted phone surveys ended up becoming a saving grace since many students could spare a few moments to talk over the phone. However, even scheduling phone interviews became problematic with schedule changes, family interruptions, and some simply forgot they made the appointment.

These issues are by no means unusual and are present in any research study. They were simply further complicated in this study due to the fact that online learning students in any given course may be located in any geographic region with varying time zones. In addition, many online students value their privacy when they are at home and consider being contacted at their home for education research an invasion of their privacy. These are recruitment issues not easily overcome but to be expected when conducting research in an online setting in which you are not their primary institutional contact.

**Inferential Statistics Limitation of Survey**

The Social Loafing of Others scale was removed from the inferential statistics because the integrity of the scale was questionable. Many participants listed inappropriate or illogical responses to the items from this scale. Examples included reports of loafing that exceeded the
number of individuals in the group (e.g., 5 loafers in a group of 3), indications of no group membership (e.g., not actually a group), exclusion of self in group size reports, and listing several responses for an item. Thus, the validity and reliability of the scale was not adequate for inferential parametric statistics.

The sucker effect scale was also compromised in the creation of the survey. When creating and beta testing the survey, many participants complained about the length of the survey and commented that as a voluntary participant, they would not complete the survey in its entirety. Therefore, I made the decision to modify the sucker effect scale from the original study. In the original scale, there were 5 items measuring sucker effect. These five questions were modified to measure two different areas of sucker effect: others and self. This allowed me to still measure two aspects of the variable but with substantially fewer questions on the survey. However, by modifying the measures, I substantially compromised the scale to the point that the questions could not be included in the inferential statistics portion. This error in judgment was not recognized in the first study since the analysis was limited to descriptive statistics. Although a substantial error for statistical analysis in this study, this is easily correct in future studies. Future research could either opt for not including the scale or including the complete original scale. Not including the scale might limit the predictability and efficiency of the model. Including the complete scale might significantly reduce the survey return rate. Whatever solution chosen, the lesson learned here is to not compromise the validity of a scale for the sake of rate of return.

**Imposition of Subjective Researcher Influence in Data Collection**

Any research study can be impacted by the personal feelings and expectations of the individual researcher. Although I have strong personal emotions regarding online learning groups and how they are implemented, I made a concerted effort to ensure participants were not exposed to these emotions either by tone of voice or written expression. In some cases, interview participants directly asked whether I had personally experienced this, whether their opinions were “on track,” or if I knew “what they mean.” In each of these instances, I was careful to maintain a neutral stance and explain that whatever their perceptions were (good, bad, or indifferent) they were important to me and especially to the integrity of the study. I went to great length to ensure each participant that I wanted to hear all of their opinions regardless of their emotional continuity. It would be foolish of any researcher to assume they remained
completely neutral within their own study. However, I do feel that I made great strides toward maintaining as much neutrality as humanly possible.

**Interview Software**

There are always technological limitations in a study that incorporates technology as part of the research. In this study, two technology interventions were used: web-based survey and Skype with Callburner. No reports were made of issues regarding access or technical issues with the web-based survey. This, of course, does not mean that it did not occur but that I did not receive any notice either by the software or by individuals that there were any access or completion issues.

Skype with Callburner was an excellent choice for the phone interviews but did come with some technical issues. The software price was well within range of the researcher and performed well within expectations. Participants were familiar and comfortable with Skype since most had either heard of the software or had previously used it. Callburner runs in the background of Skype and the participants were unaware of its existence with the exception of approving its use during the interview. Difficulties with Skype arose as a result of two factors: high volume of internet traffic and bad weather. On several occasions, I encountered high volume traffic, which caused delays in the transmission of a voice. On one occasion it became such an annoyance that I was forced to reschedule the interview. On most occasions it was either not an issue at all or either a slight delay that was not greatly apparent. Weather systems, on the other hand, were a major issue. The time frame for the interviews just happened to coincide with winter storms in many of the areas where participants were located. There were several interviews that had to be rescheduled due to interruptions so severe that the interviewer or interviewee could not be recorded. However, none of the participants failed to reschedule and seemed to take the weather issue in stride.

Overall, I do not feel the technical issues were any greater for this research than they would be for face-to-face interviews that also incorporate video and audio recordings. Technical issues should simply be expected and back-up plans should be in place and ready to be implemented to prevent participant aggravation and frustration.
Contributions of This Study

As noted above, although the sample size of this study prohibits the generalization to the larger population, this study contributes to the body of literature on groups and group behaviors in several ways.

First and foremost, this study adds a unique contribution to the LIS literature by extending the research of Wilson (1997) and Sonnenwald (1999). Wilson (1997) proposed an interdisciplinary model of information behavior rather than information seeking. His model recognizes information seeking as only one aspect of information behavior and acknowledges that information processing may change based on a number of factors that include intervening variables such as personal characteristics, emotional, educational, demographic, interpersonal, social, and environmental factors. Sonnenwald (1999) extends Wilson’s work by acknowledging that the outside influence of other disciplines upon information science models add richness and detail to IS models. In (Sonnenwald, 1995), she proposes a model of communication that acknowledges difficulties experienced by designers and developers of information systems when working in groups. According to her model, each participant must learn to appreciate the individualism of the other group participants in order to gain a better understanding of how the entire system will best serve the end user. Unfortunately, in the pursuit of understanding, participants encounter difficulties communicating due to “differences in language, expectations, motivation, and perceptions of quality and success...” (Sonnenwald, 1995, p.873). These difficulties can lead to participants contesting or challenging each other’s contributions to the overall group effort. If group participants do not overcome these conflicts, it can lead to anger, animosity, and unwillingness to work together on future projects.

It is these factors named by both Wilson and Sonnenwald (emotional, educational, social, interpersonal, environmental, expectations, motivations, and perceptions) that this study has endeavored to examine more closely. As Sonnenwald noted, we need to better understand the group dynamics in order to make recommendations on how to improve the system so that it will result in better serving the end user. Gaining a better understanding of online learning groups helps us better understand both the system (online learning) and the end user (the student and corporations they work for in the future). In order for the educational system to provide a better product (students) to the future workforce, it must first understand what issues lead to dysfunction within the system.
Without a thorough understanding of what dysfunctions are present and how these dysfunctions lead to a poorer end product, the educational system has little hope of improving its product and having their end users seek them out for future assistance. Whether the educational system and its faculty choose to recognize it or not, the educational goals and opinions of students are rapidly changing to that of a consumer attitude. Students increasingly feel that they are paying for a product and should expect that product to be worth the expenditure. When the educational system provides a sub-par product, their customers will find other avenues to achieve their goals. Based on the information in this study, students are currently unhappy with the administration and implementation of online learning groups. Not only do students note that dysfunctional behavior occurs with regularity, they also perceive faculty to be ill prepared or unwilling to deal with these issues.

This study further contributes to the understanding of this system/user disconnect by demonstrating that it is exactly these perceptions that the educational system should address. Both the quantitative and qualitative data from this study reinforce that the mere perception that social loafing exists leads to a decrease in group performance. Therefore, future endeavors to improve the system should acknowledge the importance of perceptions. Perceptions are easily dismissed by refuting them with the “reality” of the situation. However, this study demonstrates that dismissing student perceptions and expectations may very well result in group dysfunction. By continually reinforcing student perceptions that group experiences are negative, the educational system is providing the workforce with employees who are ill prepared to work in an online environment and are avidly gun shy of group environments in general.

In addition to expanding upon previous LIS research and the call for more interdisciplinary research within LIS, this study has also contributed to the literature base of groups in general. Since this study supported the findings that antecedents to social loafing in other group environments can also be found in the online learning environment, it is possible that the reverse is also true. This study identified several new potential social loafing moderators. This should provide the impetus for all areas of group research to include these factors in their future research to determine whether their cross applicability is existent.

Finally, this study makes a unique contribution to the literature on group behaviors and interactions by encouraging an increase in mixed methods within the literature. Much of the rich data provided from this study comes from the qualitative data. However, it is the use of a mixed
method approach that allows us to refine and support the findings. Strictly quantitative or qualitative studies within the area of group interactions leave too many gaps and may lead to misunderstandings regarding student perceptions. Quantitative data can demonstrate that a perception does or does not exist but it provides little information as to why. Without understanding why perceptions exist, what factors lead to their existence, and how perceptions can influence other perceptions, we as researchers will have an incomplete picture of how groups operate, and therefore, how to improve them.

**Future Research**

**Creating a Better Survey**

One major consideration for future research utilizing techniques and scales implemented in this study would be to improve the web-based survey. Participants seemed to have extreme difficulty interpreting the 0 – 10 scale for social loafing self. One easy solution to this problem is to change this scale to match all of the other sub-scales which were Likert scales using a 1-5 strongly disagree to strongly agree five point scale.

In addition, insufficient questions were included to properly measure social loafing self and social loafing others for part of the statistical analysis. This issue is also easily remedied. These scales were shortened in this study in an effort to control the length of the survey and increase participant response rate. In future research, I would recommend utilizing the complete subscales from the original studies. This would increase the total number of questions to over 50 items for this survey. This might decrease the response rate but would improve the ability to statistically analyze the resulting data.

**Game Theory**

One area of future research I would highly encourage for social loafing research is the incorporation of game theory. Game theory holds a lot of promise for this area and has been used extensively to study other areas of group behavior. As mentioned previously in the literature review, game theory is a relatively new discipline that attempts to apply mathematical properties to real world social interactions such as optimal pricing, jury selection, competitive bidding, politics, and battle strategies (Davis, 1983). Game theory is an appropriate application for examining social loafing and free riding behaviors since the theory is in essence a decision making theory.
Utilizing game theory, one can determine what decision is optimal based on the number of individuals involved, their motivations, and interests. Lack of knowledge regarding how management decisions, rules, and regulations may influence the decision making process can result in defection rather than cooperation. For instance, in WWI ground troops established “live and let live” systems of cooperation between enemy lines. Examples included cease-fires during mess, allowing enemy movement within firing range, and mutually agreed upon “private business” times (Axelrod, 2006). Despite the desire of military commanders to get at least a ratio of 1:1 BDA (battle damage assessment), mutual cooperation flourished across the Western Front. Military commanders instituted various methods to stop the behavior, including commander/troop replacement, punishment and even court martial to no avail. It was only the subsequent instigation of raids by Battalion Commanders that finally put an end to the mutual cooperation established between trenches. Interestingly, the decision to implement raids was entirely separate from the issue of mutual cooperation and ended the tit-for-tat coincidentally rather than strategically. The implementation of raids increased feelings of intentional defection and thus revenge (further defection). This lack of understanding of how policies and procedures can enhance cooperation or encourage defection can have detrimental effects on an organization whether at war or in the board-room.

Parallels between cooperative agreements on the Western Front and online learning groups may seem distant to non-existent. However, nothing could be further from the truth. One interviewee provided insight into the inner workings of cohort groups at a major university. Cohort groups are online learning groups that remain intact for the duration of the degree program. These groups progress through individual courses and eventually the entire degree as a unified team. The interview participant describes how each of these individuals comes to know, understand and anticipate the behavior of other group members over the course of time. The group then accommodates these behaviors into a series of rituals and unspoken agreements that will result in the optimal learning result for the group. However, much to this participant’s dismay, half way through the program the university decided to allow students from other programs take specific courses within their department at various stages of the program. This resulted in core groups being invaded (raided) by outsiders who neither valued nor understood the norms previously established by the core group. The result was mutual defection on the part of group members and therefore the destruction of tit-for-tat strategies previously established.
These cohort groups became dysfunctional and subsequently experienced production loss (social loafing). The university administration was no different from the military commanders in WWI. They had no concept of how their decision making and policies would affect the cooperation and eventual success/failure rate within their department.

Administrators and researchers alike could benefit from the application of game theory in the study of online learning groups. One issue that likely led to the mutual cooperation and tit-for-tat systems established on the Western Front was the close proximity and repeated iterations of exposure (Axelrod, 2006). Future research should include examination of similarities between these groups and the cohort groups in distance learning. The use of game theory in this research could provide insight into the decision-making parallels of these groups and possibly predictive value regarding strict cohorts versus mixed or variable group assignment.

One major issue that needs to be overcome for its widespread use in online social loafing studies is the requirement for multiple iterations. Most online courses only implement one major group exercise during any given semester. Since game theory incorporates multiple iterations, it would be necessary to overcome the limitation of only one group exercise within the study timeframe. Although this presents unique recruiting issues, is not completely out of the realm of possibility. The study of online learning cohorts would be one method of pursuing this line of study. The incorporation of game theory into future research demonstrates great promise that could provide solutions to issues that have, as yet, gone unresolved.

**Path Analysis**

Themes discovered in qualitative but not covered in survey should be examined and possibly included in new regression analysis to find a better model fit. Utilizing path analysis and the additional moderators identified in this research study could shed new light on a more precise model that may provide a much better fit for predictability of these group behaviors.

Path analysis is a variant of multivariate regression. The strength of path analysis is its ability to determine causal relationships between several variables. It is a means of graphically presenting the causal relationships among variables. The path coefficients provide estimates of the strength of the relationship between two given variables when all other variables are held constant. This research method allows for the analysis of several variables simultaneously. Path analysis has been used extensively in social research and specifically within social loafing research (Sanna,
However, it is important to keep in mind that path analysis is only as good as the variables in the model and the presumed pathways included within the model.

**Conclusion**

Although this study revealed weaknesses in the survey and recruitment of participants, no study is without its imperfections. This study did make a unique contribution to the area of psychosocial research and information studies, which is, of course, the main goal of any research study. Information studies gains from this research by expanding its horizons to incorporate multidisciplinary research that adds to the current knowledge within IS (information studies) on how groups share information. It is impossible to share information outside of the group context since every human on earth is part of some group whether that group includes family, friends, co-workers, or complete strangers on the Internet. Social media are becoming a daily part of most people’s lives and provide new and unique areas for research for information sharing. This study may help to bridge the gap between other IS research conducted on online learn group behaviors and communication and sharing knowledge in a multidisciplinary context. We have much to learn in IS from other disciplines. In regard to group behavior and communication, we need to open our doors to previous and current research being conducted within psychology, sociology, economics, and even biology.

Although the sample size of this study is too small to generalize, it is hoped that it will contribute to the larger body of group knowledge in two ways: interest IS researchers in collaborating more frequently on multidisciplinary teams and stimulate more interest in collaboration on topics related to online groups. Online groups have become a part of daily life at both work and home for most individuals and show great promise for more widely distributed use in the near future. The more we understand about the online environment and how it impacts our individual and group behaviors, the more prepared we can be to develop preventative measures and mitigating factors to avoid negative behaviors that can impede the successful achievement of group goals. Increased knowledge in this area can impact how we communicate from home and internationally and can impact our lives in countless ways.
APPENDIX A

WEB-BASED QUESTIONNAIRE
Student Perceptions of Online Group Activities

Gender: *
☐ Male  ☐ Female

Participant’s age:
☐ Under 20 years old  ☐ 20 to 30 years old  ☐ 30 to 40 years old  ☐ 40 years or older

Participant’s ethnicity:
☐ Caucasian  ☐ African American  ☐ Asian  ☐ Hispanic or Latino  ☐ American Indian or Alaska Native  ☐ Other

My Instructor was generally aware of when a student was putting forth below average effort.

Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

My Instructor was aware of the amount of work I do.

Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

It is generally hard for my Instructor to figure out how hard I am working.

Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

My Instructor usually notices when a student is slacking off.

Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

It is difficult for my Instructor to determine how hard we are working.

Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

It is hard for my Instructor to determine how much effort I exert on the group project.

Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I think that I made a unique contribution to the success of our group.</td>
<td></td>
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<tr>
<td>How I perform my job is important for the group.</td>
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<tr>
<td>The success of the project hinged on students like myself.</td>
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</tbody>
</table>

How many students were in your group (including yourself).

2 3 4 5 6 7 8 9 10 11

Please indicate how many of your group members strongly possessed the following characteristics:

1. Deferred responsibilities he or she should assume to other students.
2. Put forth less effort on the project when other students were around to do the work.
3. Did not do his or her fair share of the work.
4. Spent less time working on the project if other students were available to work on the project.
5. Put forth less effort than other members of his or her group.
6. Avoided performing housekeeping tasks as much as possible.
7. Left work for other group members that he or she should really complete.
8. Took it easy and let other students do the work.
9. Deferred group work to other students.
10. Was less likely to volunteer for tasks if another student was available to complete the task.

Please answer the following questions about yourself.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
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<tr>
<td>--------------------------------------------------------------------------</td>
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<tr>
<td>Deferred responsibility you should have assumed to other students.</td>
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<tr>
<td>Put forth less effort on the project when other students were around to do the work.</td>
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<tr>
<td>Did not do your fair share of the work.</td>
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<tr>
<td>Spent less time working on the project if other students were available to work on the project.</td>
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<tr>
<td>Put forth less effort than other members of your group.</td>
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<tr>
<td>Avoided performing housekeeping tasks as much as possible.</td>
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<tr>
<td>Left work for other group members that you should have completed.</td>
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<tr>
<td>Took it easy and let other students do the work.</td>
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<tr>
<td>Deferred group work to other students.</td>
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<tr>
<td>Was less likely to volunteer for tasks if another student was available to complete the task.</td>
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<tr>
<td>Other group members were aware of how much effort I was contributing to the group project.</td>
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<tr>
<td>My Instructor was fair in rewarding my work considering the amount of effort I put into the work.</td>
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<tr>
<td>Grades for individual group members were fair based on individual contributions.</td>
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<tr>
<td>I was treated fairly by the instructor regarding decisions made about my work/grades.</td>
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</tr>
<tr>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
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<td>----------------</td>
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<tr>
<td>Because some group members were not trying as hard as they could, one or more of my group members invested less effort.</td>
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<tr>
<td>Because some group members were not trying as hard as they could, one or more of my group members invested more effort.</td>
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<tr>
<td>Because other group members were not contributing as much as they could, I did not try my best on the project.</td>
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<tr>
<td>Because the other group members were not contributing as much as they could, I increased my effort on the project.</td>
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<tr>
<td>When my group had an assertive/dominant group member, I was more likely to put less effort into the group work.</td>
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<tr>
<td>Assertive/dominant group members intimidate me and cause me to defer tasks (for which I was responsible) to other group members.</td>
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</tr>
<tr>
<td>Assertive/dominant group members sometimes intimidate other group members and cause them to reduce their group input.</td>
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</tbody>
</table>

Please contact support@bestchoice.net if you have any questions regarding this survey.

Online Surveys Powered By SurveyConsole Survey Software
APPENDIX B

SURVEY PARTICIPANT CONSENT FORM
Dear Colleague:

We are seeking your help in gathering information regarding student perceptions of online group work. Your participation in this study is completely voluntary. By completing this survey, you are agreeing to the informed consent criteria as outlined below.

Your survey responses will be strictly confidential and data from this research will be reported only in the aggregate. Your information will be coded and will remain confidential.

INFORMED CONSENT:

I freely, voluntarily, and without element of force or coercion, consent to be a participant in the research project entitled "Social Loafing Research." This research is being conducted by Sherry L. Piezon, M.S., a graduate student at Florida State University.

I understand the purpose of this research project is to better understand the perception of online students regarding group work in online classes. I understand that if I participate in the project, I will be asked questions about my feelings regarding online group work as well as general information about myself.

I understand I will be asked to fill out an electronic survey. The total time commitment is approximately 7 minutes. I understand that there will be no monetary compensation for my participation.

I understand my participation is totally voluntary and I may stop participation at any time. If I decide to stop participation, no individual results will be reported. Only group findings will be reported.

I understand that there is very little foreseeable risk associated with this study. However, I understand that mild anxiety may be experienced while answering some questions regarding group work.

I understand there are benefits associated with participating in this study. I will be increasing my personal awareness of my perceptions regarding group work. In addition, I will be providing researchers with valuable information regarding student perceptions of online group work. This knowledge can then be shared with other professionals in education to increase awareness of student perceptions when designing and implementing online group work.

I understand that this consent may be withdrawn at any time without prejudice or penalty.

I have been given the right to ask and have answered any inquiry concerning the study. Questions, if any, have been answered to my satisfaction.

If you have questions at any time about the survey or the procedures, you may contact Sherry L. Piezon.

For further information regarding this research you may also contact Dr. Gary Burnett at FSU, 850-644-9992 or the Office of Research and Human Subjects Committee at FSU, 850-644-8673.

I have read and understand the consent form. I understand that completion of this survey conveys my consent to participate in this study.

Thank you very much for your time and support. To begin the survey, select the Continue button below.
APPENDIX C

INTERVIEW PARTICIPANT CONSENT FORM
Dear Colleague:

I am seeking your help in gathering information regarding student perceptions of online group work. Your participation in this study is completely voluntary. By selecting “I agree” and signing the bottom of this form, you are agreeing to the informed consent criteria as outlined below.

Your interview responses will be strictly confidential and data from this research will be reported only utilizing pseudonyms to identify individual comments//actions.

INFORMED CONSENT:

I freely, voluntarily, and without element of force or coercion, consent to be a participant in the research project entitled “Social Loafing in Online Learning Groups”.

This research is being conducted by Sherry L. Piezon, M.S. who is a doctoral candidate at Florida State University. I understand the purpose of this research project is to better understand the perceptions of student behaviors in online learning groups.

I understand that if I participate in the project, I will be asked questions about my feelings regarding group work as well as comment on the feelings/observations of other students and faculty. I understand that my interview will be recorded for the purpose of transcribing comments and accuracy. All comments will be strictly confidential. The interactions will be described by assigning pseudonyms to participants to protect confidentiality. The researcher will keep these tapes in a locked file cabinet. I understand that only the researcher and her transcriber will have access to these tapes. The transcriber will be given no personal information about the participant or the location of the interview. These tapes will be destroyed at the end of the research project (no later than 31 Dec 10).

The total time commitment for each interview is approximately 20 minutes.

I understand that there will be no monetary compensation for my participation. I understand my participation is totally voluntary and I may stop participation at any time. If I decide to stop participation, no individual results will be reported. Only group findings will be reported.

I understand that there is very little foreseeable risk associated with this study. However, I understand that mild anxiety may be experienced while answering some questions regarding group experiences.

I understand there are benefits associated with participating in this study. I will be increasing my personal awareness of my perceptions regarding online group work. In addition, I will be providing researchers with valuable information regarding group work that may impact future decisions.

I understand that this consent may be withdrawn at any time without prejudice or penalty. I have been given the right to ask and have answered any inquiry concerning the study. Questions, if any, have been answered to my satisfaction.

If you have questions at any time about the interview or the procedures, you may contact Sherry L. Piezon. For further information regarding this research you may also contact Dr. Gary Burnett, Information Studies, at FSU, 850-644-9992 or the Office of Research and Human Subjects Committee at FSU, 850-644-8673.

I have read and understand the consent form. I understand that my signature below conveys my consent to participate in this study.

☐ I agree to participate ☐ I do not agree to participate

__________________________________         ____________________________          ______________________
Participant Signature                                           Printed Name                                            Date
APPENDIX D

INTERVIEW PROTOCOL
Social Loafing Interview Protocol

Thanks for taking the time to meet with me to talk about your experiences working in online groups. My name is Sherry Piezon and I’m a doctoral student at Florida State University studying group behaviors. I am specifically interested in what you like, what you don't like, what worked well, and what didn’t during your group project. In addition, I am interested in suggestions as to how online group work might be improved.

I asked you to participate in this interview because you have a unique, first-hand view of issues that may or may not be captured by simply reviewing survey results. Your opinions and suggestions will be incorporated into the larger study that encompasses collecting data from online surveys, interviews and focus groups.

There are no wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said. Keep in mind that we're just as interested in negative comments as positive comments, and at times the negative comments are the most helpful.

I would like to tape record this session because I don't want to miss any of your comments. People often say very helpful things in during interviews and I can't write or type fast enough to capture all your comments. Unless you have a strong opposition to being recorded, it will certainly help me transcribe the comments upon conclusion of the session. When transcribing the audio, each person will be assigned a pseudonym to protect their privacy. No one will be allowed to listen to the tape other than myself and my transcriber. The transcriber will not be provided any real names or locations when transcribing the recording. Your comments and suggestions will be completely confidential. The final transcript (or portions thereof) will be incorporated into the final research paper with pseudonyms. Once the study is complete, all recordings will be destroyed. Do you consent to having your interview recorded?

If not, then let’s begin.

- “How do you feel about working in online groups? Why?”
  - “What were some benefits to working in groups?”
  - “What were some negative aspects of working in groups?”
  - “What did you like best about your group experience?”
  - “What did you like the least about your group experience?”
- “Some faculty members claim that working in groups prepares you for ‘real world’ groups. Do you agree?”
  - “Why/why not?”
- “Tell me about some disappointments or difficulties you have had working in groups.”
  - “Can you tell me more about that?”
- “Have you worked with group members who did not seem to do their fair share of the work?”
  - “Why do you think they didn’t do their fair share of the work?”
- “Have you ever not contributed fully to a group project?”
  - “Why?”
- “Some group members have commented that they didn’t contribute their fair share because of a dominant group member or because they were intimidated. Have you or other group members experienced this?”
- “If you were given total control over an online group project, how would you organize it to work optimally for student learning?”
- “If you had one minute to speak frankly to faculty who implement online groups, what would you tell them?”
- “Of all the things we talked about, what is the most important to you?”
- “Should professors intervene in group difficulties?”
- “For the last minutes, we have discussed the benefits and drawback of working in online groups. Is there anything we missed that you would like to discuss?”

139
APPENDIX E

IRB APPROVAL
RE-APPROVAL MEMORANDUM

Date: 12/18/2009

To: Sherry Piezon
Address:
Dept.: INFORMATION STUDIES

From: Thomas L. Jacobson, Chair

Re: Re-approval of Use of Human subjects in Research Social loafing Survey

Your request to continue the research project listed above involving human subjects has been approved by the Human Subjects Committee. If your project has not been completed by 12/16/2010, you are must request renewed approval by the Committee.

If you submitted a proposed consent form with your renewal request, the approved stamped consent form is attached to this re-approval notice. Only the stamped version of the consent form may be used in recruiting of research subjects. You are reminded that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report in writing, any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor are reminded of their responsibility for being informed concerning research projects involving human subjects in their department. They are advised to review the protocols as often as necessary to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

Cc: Gary Burnett, Advisor

HSC No. 2009.3706


Gates, G. S. (1924). The effects of an audience upon performance. Journal of Abnormal and


Rovai, A. P. (2002). Building sense of community at a distance. *International Review of Research in Open and Distance Learning, 3*(1).


BIOGRAPHICAL SKETCH

Sherry L. Piezon completed her doctoral degree at Florida State University College of Communication and Information Studies. She is an instructor pilot for the US Army Initial Entry Rotary Wing program at Fort Rucker, Alabama and an adjunct faculty member at Tallahassee Community College and Tiffin University. She has over 24 years of experience as an instructor, trainer, and facilitator. Her online instructor experience spans 12 years in corporate, military, and academic settings. She has served as a military consultant and trainer with the U.S. Air Force, major airlines, and corporate flight departments. She has also served as a corporate Program Manager for synchronous online learning that included program initiation, implementation, and administration of courses worldwide. Sherry obtained a Master of Aeronautical Science in Safety from Embry-Riddle University, a Master of Science in Instructional Technology from University of Houston-Clear Lake, and a Bachelor of Arts in Psychology from the University of Georgia.