

Undergraduate Psychology Research Methods Journal

Volume 1 | Issue 11

Article 11

5-2010

Spring 2010, Full Issue

Follow this and additional works at: https://digitalcommons.lindenwood.edu/psych_journals



Part of the [Psychology Commons](#)


Recommended Citation

(2010) "Spring 2010, Full Issue," *Undergraduate Psychology Research Methods Journal*: Vol. 1 : Iss. 11 , Article 11.


Available at: https://digitalcommons.lindenwood.edu/psych_journals/vol1/iss11/11

This Full Issue is brought to you for free and open access by the Psychology, Sociology, and Public Health Department at Digital Commons@Lindenwood University. It has been accepted for inclusion in Undergraduate Psychology Research Methods Journal by an authorized editor of Digital Commons@Lindenwood University. For more information, please contact phuffman@lindenwood.edu.

See it!





Hear it!


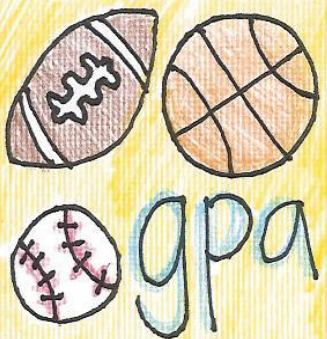


Learn it!

Relationship between Time & Test Anxiety


The Effects of Audio Distractions on Typing Speed

gpa

Relationship between Student Involvement & GPA


Classroom Expectations:



SUIT & TIE

An analysis of researcher dress & academic achievement

Perceived Racial Expectations of children



advanced research methods & senior research project

Jessica

Amanda

Mansi

Greg

Ryan

Jennifer Ellen

Heather

Claudette

palge

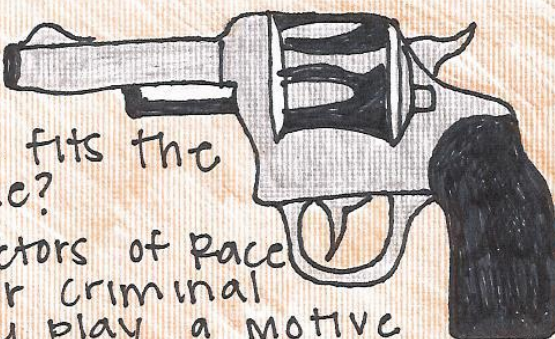
John

ashley

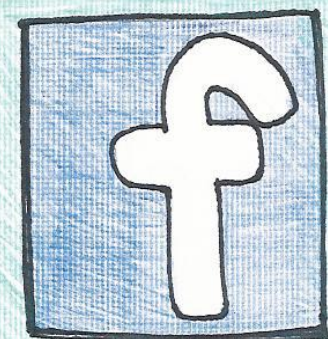
SPRING 2010

What fits the crime?

Do Factors of Race & Prior Criminal History play a motive in a person's judgment when the type of punishment should be chosen?



Facing the book of Reliance: An analysis of college students dependency on FB



The Prevalence of Technology




Table of Contents

Prologue	3
<i>Dr. Michiko Nohara-LeClair</i>	
The Effects of Audio Distractions on Typing Speed	4
<i>Ashley Silverberg</i>	
Classroom Environment: An Analysis of Researcher Dress and Academic Achievement	23
<i>Ryan Holley</i>	
See It! Hear It! Learn It!!	40
<i>Mansi Brat</i>	
Relationship between Time and Test Anxiety	58
<i>Heather Damper & Claudette Reed</i>	
Relationship between Student Involvement and GPA	65
<i>Jennifer Ellen Burdick & Paige Martin</i>	
Perceived Racial Expectations of Children	79
<i>Jessica R. Roesslein</i>	
Special Feature: Senior Research Project Papers	94
What Fits the Crime: Does Factors Influence in a Person's Judgment?	95
<i>Amanda Vance</i>	
The Prevalence of Technology	128
<i>Greg Townsend</i>	
Facing the Book of Reliance: An Analysis of College Student's Dependency on Facebook	147
<i>John R. Gatermann</i>	

Prologue

The PSY404 class of Spring 2010 consisted of students who had the opportunity to attend a regional undergraduate conference the previous semester when Lindenwood hosted the Fifth Annual Missouri Undergraduate Psychology Conference in November 2009. Perhaps because of this experience, these students seemed very inspired from the outset and produced some of the most creative projects we have had. Many of the students even expressed an interest in presenting their work at a student conference in the near future. I am looking forward to many more great things to come from the members of this class.

The winning journal cover this semester was designed by Ashley Silverberg, who skillfully succeeded in incorporating elements from every paper presented in this journal into her design. On behalf of the class, I would like to thank Chelsea Schumacher for serving as course tutor this semester, as well as John Gatermann, for working hard to help edit this journal so it may be published on a timely fashion.

Michiko Nohara-LeCair

Course Instructor

The Effects of Audio Distractions on Typing Speed

Ashley Silverberg¹

The purpose of this study was to find whether or not background music/other audio served as a distraction or a valuable tool to get work done faster. The hypothesis stated that hearing upbeat music or background conversations while typing will result in participants typing slower because it will act as a distraction. Furthermore, hearing soothing music (or no music at all) while typing will make the participant type faster because he/she will be more comfortable with the environment. To pursue the hypothesis, the present study required a within-participant design in order to compare both the control and experimental variables within the experiment. Each participant was recruited from the Lindenwood Participant Pool and was asked to type four five-sentence paragraphs, each in a different audio condition: Upbeat music, soothing music, men talking, and no audio. A stopwatch was used to time the amount of time it took each participant to type an individual paragraph. After the participants left the study, their times were compared to determine if and what audio served as the most distracting. The results showed that although there was a significant difference in the times between paragraphs, there were no significant differences in typing speed between the audio distractions being played. This could possibly be because each audio may not have been unique enough from each other or that there were too many variables throughout the experiment. Although there was no significant differences in times, there was a significant difference in what condition each participant found distracting. This could possibly be the basis for more research to come.

¹ Ashley Silverberg, Psychology Department, Lindenwood University. Correspondence concerning this project should be directed to Ashley Silverberg, 209 S. Kingshighway, Saint Charles, MO, 63301, as751@lionmail.lindenwood.edu.

The purpose of this study was to determine whether auditory background enhanced or weakened an individual's typing speed. Individuals may not realize that music and other audio distractions could be disrupting and that there could be either a positive or negative effect on the skills they may need to perform for their careers.

Macken, Phelps, and Jones (2009) stated that background sound creates a constant disruption in a person's performance. This is true when the participants are listening to the upbeat music as well as conversations. Music will produce an environment that will make it harder to concentrate; therefore other activities will be hindered. Macken et al. (2009) also have done research that has produced the idea that each musical (audio) element must differ from the one that precedes it in order to cause a distraction. Sounds changing in frequency cause disruption; however, sounds with a repeated frequency do not. With soothing music, for example, the constant droning and smooth melody relaxes an individual so there is minimal or no distraction. Therefore, other activities can be done faster because there is no other stimulus present.

Further research on distractions from Bennett (2004) suggests that audio with native-language lyrics are most likely to have the greatest negative effect on a participant's performance. This is because it is largely filled with information and has great relevance to the participant (he/she can understand it). This could be found true in the condition with conversation. Since participants will be trying to understand what each person is saying in the conversation, they will be more concentrated on the audio than on the task at hand.

It is also possible that each participant will vary with their reactions to each audio stimulus. According to Degregoris's (1986) audio distraction research, there were so many differences among participants' reaction to sound that it was difficult for experimenters to

explain why. Contrary to this belief, Wolfe and Noguchi (2009) explain that after the initial stimulus, participants will become almost immune to the background noise and it will not affect their concentration.

Music and other audio distractions have in some cases proven to be extremely beneficial. However, according to Noguchi (2006), when studying children's reactions to music distractions while going through medical procedures, she noticed that there was no discernable benefit from background music. However, this is not to say that distractions cannot be beneficial in other situations.

In the present study, Lindenwood participants were asked to type four different paragraphs, one in each of the four conditions: upbeat music, soothing music, conversation, and silence. Upbeat and soothing music were both used because they accounted for opposite ends of the stimuli spectrum. One is highly energetic and has a fast tempo and the other is slow and relaxing. A condition with a conversation as audio was also used to see if there were any differences between music and talking. The control group consisted of no background noise at all. Counterbalancing took place to make sure that the results would not be bias on order effects. Participants were timed in each condition and then asked to fill out a demographic survey. The survey also included questions regarding how much of a distraction each stimulus was. The hypothesis stated that hearing upbeat music or background conversations while typing will result in participants typing slower because it will act as a distraction. It was also hypothesized that hearing soothing music while typing will make the participant type faster because he/she will be more comfortable with the environment.

Method

Participants

For this study, 32 people were recruited from the Lindenwood Participant Pool (LPP) found on the Lindenwood University Campus. All participants were undergraduate students at Lindenwood University and were at least 18 years of age. No participant was excluded from this study. By following all of the general procedures entailed in the LPP rules and regulations handout, the participants were recruited ethically and with no coercion. After completion of the study all of the participants received extra credit for designated classes.

All participants were from the Lindenwood Participant Pool. Twenty-five women signed up for the experiment while only seven men participated. The age of the participants ranged from 18-27 years old. Only eight participants reported that they were not born in the United States. Four reported that they were from Canada and the others from various places including China, Italy, Panama, and Turkey. All the participants said they were familiar with a standard keyboard. When asked if they wore glasses or contacts to aid in their sight, 11 of the 32 said yes. Only one participant stated they used an aid for their hearing and two stated they had trouble with their fine motor skills. Even under these conditions, the students' data was not omitted from the results. When asked how many hours each participant spent typing on a computer in a week, answers varied greatly. Hours ranged from 0-25 hours with an average of 7.9 hours and a standard deviation of 6.7. Participants were asked how much music influenced their mood. Thirteen out of 32 participants reported that music definitely influences their mood. Only one participant stated that music did not influence him/her at all and one participant chose not to answer.

Materials

Each participant was asked to fill out two consent forms (one for the experimenter and a copy for the participant). The consent form was given to participants to ensure that they fully understood what is being asked of them in the study (see Appendix A). Each participant also received an ID number to ensure anonymity and to help the experimenter keep each participant's data together. After the study, a demographic survey was given. This asked participants to give their sex and age. They were also asked whether or not they use contact lenses/glasses or any type of assistance with hearing. These questions are important to ask because the results could have been skewed if someone has these disabilities. Participants were also asked if they are an international student. This is to ensure that they are from an English speaking country and were familiar with computers, even though those questions would be asked later. The last questions asked how greatly music influences their mood and how distracted they were by each set of audio (see Appendix B). A feedback letter was given after the study. This was given to debrief the participants on what the study was really about and provided participants with a way to contact the experimenter if they had any questions (see Appendix C). The participants also received extra credit receipts for partaking in the study.

All the rooms the LPP assigned contained a desk and chair for each participant to use. A Dell Inspiron laptop was available for each participant to type their information. Paragraphs were given to each participant on a piece of paper and they were asked to type the five sentences into the Notepad Program on the laptop. The first paragraph was about the Olympic Games describing the events and layout of the sports event (see Appendix D). The second paragraph was about the Super Bowl and where it was originated (see Appendix E). Paragraph three was about ballet and again where it originated (see Appendix F), and finally paragraph four was about

musical theater and how it has become a worldwide phenomenon (see Appendix G). All of these paragraphs were excerpts taken from Wikipedia. Music/audio was played via the iTunes program on the laptop. The laptop was set to an appropriate noise level so the participants were able to hear the music/audio clearly. Condition A contained no music or audio at all. This acted as a control variable. Condition B was the upbeat music condition. The song that was used was “Sandstorm” by Darude. The next condition, condition C, was the soothing music condition. The audio used was “Mozart’s Lullaby” by The Little Series. For the men talking in the fourth condition, a section of Martin Luther King’s famous “I Have a Dream” speech was used. A Sportline water resistant stopwatch was also used to accurately time each participant.

Procedure

The experimenter started by posting sign up sheets as well as a description form on the bulletin board outside the LPP office. Once participants signed up, they went to their directed location. The study began by giving participants two consent forms. They then were given an ID number in order to keep anonymity throughout the study. Each participant was asked to sit at the desk with the laptop in the room. The audio was then turned on by the experimenter. Counterbalancing was used to make sure that the sequence of the audio conditions was being alternated among participants. Then the experimenter gave the participant a paragraph to type. Again, the order in which the paragraphs were given was counterbalanced so not every participant typed Paragraph A first, Paragraph B second, and so on. (See Appendix H for counterbalancing). Each participant was told, “Please type the following paragraph into the Notepad Program. If you make any mistakes or errors, simply go back and correct them. If at any time you feel uncomfortable, you may leave the study without any penalties. If you have any questions, please let me know.” Each participant was asked to type four paragraphs, one in each

condition. Once the participant began typing, the experimenter started the stopwatch. The stopwatch was stopped once the last period of the last sentence was typed. Once the participant had completed four paragraphs, he/she was given a demographic survey to fill out. It was important that the participants completed the demographic survey after the study because there were important questions about distractions on the survey. Once the survey was completed, the participant was debriefed and given their receipt for extra credit. They were also given a feedback letter which contained the experimenter's information for any further questions or concerns they may have.

Results

The hypothesis stated that hearing upbeat music or background conversations while typing will result in participants typing slower because it will act as a distraction. Furthermore, hearing soothing music (or no music at all) while typing will make the participant type faster because he/she will be more comfortable with the environment. After collecting the data and conducting the appropriate ANOVA and paired sample t-tests, the calculations are as follows.

A one way repeated measures ANOVA was conducted to see if there were any significant differences in typing speed between the four audio conditions. The results showed that there were no statistical significance with $F(1,31) = 2.259$, $p = .143$. This could potentially be because people deal with distractions in their daily life regularly. Therefore, having music in the background didn't affect a person as much as maybe something more startling might.

Another one way repeated measures ANOVA was conducted to see if there were any significant differences in typing speed between the four passages. There was a significant difference here with $F(1,31) = 36.288$, $p < .001$. Paragraph three seemed to take participants a lot less time to type ($M=162.75$ sec) and paragraph four took participants a lot longer ($M=195.09$ sec). The

reasoning for this could be that paragraph four had a lot more punctuation and capitalized letters throughout the passage. This could have taken participants longer because it takes an extra finger to capitalize or you have to move your hands from the standard position to use different punctuation marks. Paragraph three may have taken less time because there were fewer proper nouns that needed to be capitalized. With these differences in mind, a paired sample t-test was conducted to compare paragraphs one and two (since they were the passages that were most closely related). The findings showed that although paragraphs one and two were similar in length and times, they did not have a significant correlation with any of the audio conditions in typing speed; $t(30) = -.896, p=.377$.

It was clear that each participant viewed the upbeat music as more of a distraction than the soothing music based on the ratings they gave each condition. A within-subjects repeated measures ANOVA was conducted to see if there were in fact any significance. The results show that there was in fact a significant difference in how participants rated each audio condition in terms of distraction. The upbeat music ($M=6.13$) and talking ($M=5.78$) conditions seemed to be more distracting than the soothing ($M=4.03$) and no audio ($M=2.56$) conditions. A t-test was conducted to show which variables were indeed significant. It was found that there was no significant difference in distraction between the upbeat and talking conditions $t(31) = .637, p > .05$. However, there were significant differences between all other conditions. $t(31) < .05$.

Even though some of the results do not support the current study's hypothesis, it is possible that with a larger sample size and less variables, more accurate results could be found. This study was not a loss cause. It found that participants did indeed find the upbeat and talking conditions a lot more distracting than the soothing and no audio conditions. Further research may be in order to get a more positive outcome.

Discussion

After collecting all achievable data, the hypothesis about audio distractions and typing speed was not supported. However, participants recorded that the upbeat and talking conditions were in fact more distracting than the soothing and no audio conditions. Also, with past findings in article reviews showing that distractions do indeed influence a person, I believe more research can be done. If this study was carried out with more participants there would be more accurate findings. Also, if the study focused on fewer variables, there could have been more significant results.

Throughout the study there were a few limitations. The largest limitation was who was allowed to participate. The participants, although never limited in any way by the experimenter, were limited by the LPP. The Lindenwood Participant Pool only allows students from the Lindenwood campus to participate in these studies. Another limitation was the people who chose to participate in the study. Most of the participants were females who were born in the United States. Since the participants seem to be of a common group of people, it is hard to say whether or not the results are truly accurate over a wide spectrum. Therefore, it is hard to tell how the study would differ if participants of a different sex or nationality had contributed.

Many modifications can be done in the future regarding this study. First, the location of the study needed to be more consistent. Sometimes participants were asked to go into a room where there were very few distractions. At other times they were asked to go to a room that had a lot of windows, so it was difficult to control the environment outside. Therefore, each environment was not consistent. Another improvement in the experiment would be the volume of the music being played. Sometimes the laptop would be turned up to a higher level which could have posed for a greater distraction than when it was lower. It would also be beneficial to get a

more accurate time keeper. The stop watch that was being used would sometimes get stuck and therefore not provide a very accurate time among participants. It would also be beneficial to control for any other outside distractions. Although it would be very difficult to control, maybe making a sign that said “do not disturb” would help the experiment go on uninterrupted. Although a within-participants design was the most precise way to evaluate this information, possibly only using two conditions instead of four would have made the participants feel more relaxed. It was apparent that they were getting tired and maybe the study was too long or intense. This could have played a role in the results especially since they were being timed. Therefore, it would have been helpful to control for fatigue effects as well.

Even though the results did not support the hypothesis in question, with further research more accurate results could be found. Past findings do indeed show that there is an influence of distractions on a person and their actions. This study could be a beginning of more research to come and I believe with a larger sample size and fewer variables, this study could be more beneficial.

References

- Bennett, M.C. (2004). Effect of music and speech distractors on verbal reasoning task. Proquest Dissertations and Theses. California State University, Fullerton.
- Degregoris, C.N. (1986). Reading comprehension and the interaction of individual sound preferences and varied auditory distractions. Proquest Dissertations and Theses. Hofstra University; New York.
- Macken, W.J., Phelps, F.G., & Jones, D.M. (2009). What causes auditory distractions? *Psychonomic Bulletin and Review*, 16, 139-144.

Noguchi, L.K. (2006). The effect of music versus nonmusic on behavioral signs of distress and self-report of pain in pediatric injection patients. *Journal of Music Therapy, 43*, 16-38.

Wolfe, D.E. & Noguchi, L.K. (2009). The use of music with young children to improve sustained attention during a vigilance task in the presence of auditory distraction. *Journal of Music Therapy, 46*, 69-82.

Appendix B

Demographic Survey:

1. Sex (circle one): Male Female
2. Age: _____ years
3. Were you born in the United States? Yes No
If answered no, which country were you born in? _____
4. Are you familiar with a standard keyboard for a computer? Yes No
5. Do you wear glasses and/or contact lenses? Yes No
6. Do you wear hearing aids or any device to assist your hearing? Yes No
7. Do you have trouble with fine motor skills (using your hands in particular)? Yes No
8. About how many hours a week do you spend typing on a computer? _____ Hours
9. On a scale from 1-5, how much does music influence your mood? (Circle one)

1

2

3

4

5

Does not
influence
me at allSomewhat
influences
meDefinitely
influences
me

10. On a scale from 1-10, how much of a distraction was the **upbeat background music** being played?

1

2

3

4

5

6

7

8

9

10

*Least Disruptive**Somewhat Disruptive**Most Disruptive*

11. On a scale from 1-10, how much of a distraction was the **soothing background music** being played?

1

2

3

4

5

6

7

8

9

10

*Least Disruptive**Somewhat Disruptive**Most Disruptive*

12. On a scale from 1-10, how much of a distraction were the **men talking in the background**?

1

2

3

4

5

6

7

8

9

10

*Least Disruptive**Somewhat Disruptive**Most Disruptive*

13. On a scale from 1-10, how much of a distraction was it when there was **no music/audio playing**?

1

2

3

4

5

6

7

8

9

10

*Least Disruptive**Somewhat Disruptive**Most Disruptive*

Appendix C

Feedback Letter

Thank you for participating in this study. The goal was to find out whether upbeat music, soothing music, conversations, or no music/audio provided people with better tools to type faster. My hypothesis states that hearing upbeat music or background conversations while typing will result in the participants typing slower because it will act as a distraction. Furthermore, hearing soothing music while typing will make the participant type faster because they will be more comfortable with the environment. This information is a very beneficial tool for those in specific situations such as office work, secretary work, or bookkeeping. It would allow them to use music as a positive thing, to not only listen to in the background, but to help them get their work done faster.

Please note that I am not interested in your individual results; rather, I am only interested in the results of a large group of consumers, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. My contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact me and I will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigator:

Ashley Silverberg as751@lionmail.lindenwood.edu

Supervisor:

Dr. Michiko Nohara-LeClair 636-949-4371 (mnohara-leclair@lindenwood.edu)

Appendix D

Paragraph 1:

“The Olympic Games are a major international event of summer and winter sports, in which thousands of athletes compete in a wide variety of events. The Games are currently held every two years, with Summer and Winter Olympic Games alternating. The Games have grown in scale to the point that nearly every nation is represented. The Olympic symbol, better known as the Olympic rings, consists of five intertwined rings and represents the unity of the five inhabited continents. A medal ceremony is held after each Olympic event is concluded.” - Wikipedia

Appendix E

Paragraph 2:

“The Super Bowl has been the championship game of the NFL, the premier association of professional American football, since the twentieth century. The Pittsburgh Steelers have won six Super Bowls, while the Dallas Cowboys have only won five. In most years, the Super Bowl is the most-watched American television broadcast. Because of its high viewership, commercial airtime for the Super Bowl broadcast is the most expensive of the year. The Super Bowl location is chosen by the NFL well in advance, usually three to five years before the game.” –

Wikipedia

Appendix F

Paragraph 3:

“Ballet is a type of dance, which originated in sixteenth- and seventeenth-century French courts, and was further developed in England, Italy, and Russia as a concert dance form. Early ballet dancers were not as skilled as they are now. Ballet has become a technical form of dance with its own vocabulary. It is primarily performed with the accompaniment of classical music. It has been influential as a form of dance globally and is taught in ballet schools around the world, which use their own cultures to inform the art.” – Wikipedia

Appendix G

Paragraph 4:

“Musical theatre is a form of theatre combining music, songs, spoken dialogue and dance. The emotional content of the piece - humor, love, anger – as well as the story itself, is communicated through the words, music, movement and technical aspects of the entertainment as an integrated whole. Since the early twentieth century, musical theatre stage works have generally been called simply, "musicals". Musicals are performed all around the world. Some famous musicals include Show Boat, Oklahoma!, West Side Story, The Fantasticks, Hair, A Chorus Line, The Producers, and Rent.” – Wikipedia

Appendix H

Timed Data: For Experimenter to Counterbalance Situations and Record Data

A= no music 1 = Paragraph 1

B= upbeat 2 = Paragraph 2

C=soothing 3 = Paragraph 3

D= talking 4 = Paragraph 4

	Trial 1	Trial 2	Trial 3	Trial 4
Participant 1	A1	B2	C3	D4
Participant 2	A2	B4	C1	D3
Participant 3	A3	B1	C4	D2
Participant 4	A4	B3	C2	D1
Participant 5	B1	D2	A3	C4
Participant 6	B2	D4	A1	C3
Participant 7	B3	D1	A4	C2
Participant 8	B4	D3	A2	C1
Participant 9	C1	A2	D3	B4
Participant 10	C2	A4	D1	B3
Participant 11	C3	A1	D4	B2
Participant 12	C4	A3	D2	B1
Participant 13	D1	C2	B3	A4
Participant 14	D2	C4	B1	A3
Participant 15	D3	C1	B4	A2
Participant 16	D4	C3	B2	A1

Classroom Environment: An Analysis of Researcher Dress and Academic AchievementRyan Holley²

The world of academics is continually redefining its standards for beneficial teaching techniques and adequate forms of classroom environments for promulgating maximum achievement from students. This research expands on previous ideas pertaining to the effects of classroom environment and student achievement by including teacher dress/appearance as a possible variable. The researcher hypothesized that individual success of participants taking achievement-oriented examinations can be influenced by the physical appearance of the researcher (dress). Participants perform better in an environment in which the researcher is formally dressed (shirt and tie), while participants perform worse in an environment in which the researcher is informally dressed (jeans and a t-shirt). Participants were given a short questionnaire pertaining to college freshman level English, science, math and literature in both conditions and the number of incorrect questions were recorded and later analyzed. This research was conducted using a between-subjects design analyzed statistically by an independent samples t-test.

In the world of academics, the importance of student achievement is paramount. Teachers and professors worldwide are continually searching for ways to enhance their student's academic strengths and weaknesses through a variety of measures. Many teachers focus on their method of teaching as the primary source of their student's academic success. As a result, environmental factors in the classroom often fall to the wayside. Classroom appearance, lighting and

² Ryan Holley, Psychology Department, Lindenwood University.

Correspondence concerning this project should be directed to the Ryan Holley, Lindenwood University, 209 S Kingshighway, Saint Charles, MO, 63301, Ryan Holley Rjh770@lionmail.lindenwood.edu

arrangement of desks can all play a role in the success or downfall of our world's student populous. It is through this research that light is finally shed on the effect that a teacher's physical appearance (dress) can have on his/her students' academic success.

Identifying a form of teacher dress that promotes academic achievement is very crucial to the future of our world's students. A lot of government funding has been invested into identifying ways to improve the classroom environment, and a variety of conclusions have been drawn. Some feel that adequate lighting and resources are crucial to achievement (Young, 2002), while others feel that arrangements of desks can play a role (Freeburg, Hagler, Workman & Anderson, 2008). Unfortunately, there has been no consensus on a single variable that promotes a proper/good classroom environment; rather an intermingling of variables have been argued and suggested by some (Freeburg, et al., 2008). The dress of teachers in the classroom ranges from formal to casual, but no universally proper dress-code has been identified. Many feel that establishing a formal faculty dress code would further define the teacher as an authority leading to increased cooperation in the classroom (Amazon, 2009). The problem of faculty dress-code in the classroom will continue unless more research is conducted in an attempt to identify a proper dress.

If the results of this study show a correlation between the variables of researcher dress and academic achievement, then classrooms across the globe would benefit. The knowledge gained from this research could be used to promote higher academic achievement everywhere. This study will also provide helpful insight into the various physical ingredients (dress-code/environment) necessary to promulgate academic achievement in the classroom.

Previous research has examined the relationship between teacher dress and the academic achievement of their pupils. Previous research suggests that appearance can weigh heavily on the

relationship between a student and his/her teacher (Perlmutter, 2005). If this is correct, then the dress of a teacher should also weigh heavily. Other research findings suggest that 55 percent of students' perceptions of their teacher are based on physical appearance or dress (Freeburg, et al., 2008). Good student-teacher interactions are crucial to academic success in the classroom. If the dress of a teacher can play a role in this interaction, then establishing a form of dress that is conducive to academic achievement may influence the success of their students. In another study conducted by Ellington and Leslie (2008), it was found that African American adolescents in particular form their perceptions of their peers and teachers, based upon their physical appearance. My research builds on this idea and applies it to all students, regardless of ethnicity.

The research hypothesis for the present study stated that individual success of students taking achievement-oriented examinations can be influenced by the environment in which the examinations are administered (the appearance of the researcher). Students would perform better in an environment conducive to achievement (formal dress); whereas, students perform worse in an environment that does not promote achievement (informal dress). This research draws on the previous findings that more than half of a student's perceptions of their teacher are based on physical appearance alone and shows whether or not a correlation is present between the two variables. While the present study was not focused around any particular ethnicity of students, it is applicable to all students because all ethnicities were welcome to participate in the study. The research was conducted using an independent-groups design. Identifying what form of faculty dress is conducive to achievement in the classroom would be greatly beneficial to all levels of academia.

Method

Participants

The participants included in this study were all undergraduate students from the Lindenwood University campus. The researcher was not interested in evaluating sex differences, so both male and female students were allowed to participate. If any participants were under the age of 18, they were required to have a parent or guardian give informed consent for their participation. There were 60 participants in the study.

Participants were recruited ethically through the Lindenwood Participant Pool. Lindenwood Participant Pool Participants are Lindenwood University undergraduate students enrolled in several preapproved courses. A sign-up sheet was posted on the Lindenwood Participant Pool Bulletin Board, allowing participants to sign up at their own convenience. The experiment was conducted in two stadium seating classroom settings that remained constant through both conditions.

Materials

Participants were provided with two copies of the informed consent letter prior to conducting research (Appendix A). The researcher then provided each participant with a copy of the questionnaire, which they were to complete (Appendix B). The items on the questionnaire were gathered from college freshman level English Composition One, Concepts of Chemistry, Basic Statistics and World Literature Two textbooks from Lindenwood University 100- and 200-level courses. Upon completion of the study each participant was given a feedback letter which provided them with the true nature of the study, as well as, the contact information of the researcher (Appendix C). Participants were also given receipts that were used to earn bonus points through their professors. A list of participants was kept to ensure that everyone involved

in the study was documented. All instructions were scripted throughout the experiment to ensure that participant performance was affected only by the independent variable of researcher dress (Appendix D). The research was conducted in two similar stadium seating classroom located on the Lindenwood University Campus. These classrooms consisted of 35-40 desks that were adhered to the floor. In condition one the researcher was informally dressed (jeans and a t-shirt) while in condition two the researcher was formally dressed in dress slacks with a dress shirt and tie.

Procedure

Upon the arrival of participants to the designated classroom, they were told that they were going to participate in a study that measures their knowledge of college freshman level English, math, science and literature. Participants were then given two copies of the informed consent form (Appendix A); upon their agreement to participate they signed and dated both copies. They kept one copy for their own records and the researcher kept the other. The researcher then assured participants that they could leave the study at any point, should they become uncomfortable or agitated. Researcher instructions were all scripted (Appendix D).

In group one of the research, participants were administered the questionnaire while the researcher was informally dressed (jeans and a t-shirt). Each participant was given 10 minutes for completion. Should participants not complete the questionnaire in the allotted time, they were told to stop and their data was analyzed regardless. Following the completion of the study, participants were debriefed and provided with a copy of the feedback letter (Appendix C). Participants were then given a completed participant receipt and told to sign the experimenter's list of participants. This process was then repeated in group two with the researcher formally dressed (dress slack with a dress shirt and tie).

Results

An independent samples t-test was used to analyze the results of the study. The t-test showed that there was a significance level of .015 between the formal and informal conditions, indicating no correlation. A t-score of .675 showed that the data had not been significant with the degrees of freedom equaling 58. The mean number of incorrect questions in the informal condition was found to be 5.82, while the formal condition was only 5.37. While 33 participants were run in the informal and 27 in the formal groups, only one participant received a score of 100% and they were in the formal group.

Discussion

After analyzing the results, no significance was found. Although there was no significance, with increased numbers of participants and a better piloted test, a new understanding of the effect of researcher dress will be found and it could then be added to the list of possible variables when understanding what it takes to construct a positive classroom environment. While previous views have been focused around the arrangement of desks and the lighting of the classroom, now physical appearance/dress of professors can be monitored (Freeburg, et al, 2008; Young, 2002). All of these variables can now be intermingled in an attempt to orchestrate a template for what constitutes a classroom environment conducive to learning. Outlining an adequate dress code for teachers could not only improve individual success of students, but also improve student teacher relations. As previous researchers have reported, individual perceptions are somewhat based upon physical appearance and can have significant affects on interpersonal relationships between individuals (Perlmutter, 2005). Other research has extended this notion by finding that more than half of individual perceptions of others are based on physical appearance; therefore, formalizing a dress code for

professors/teachers across the board could lead to increased student moral, as well as, motivation to succeed and listen to their instructors (Freeburg, et al., 2008).

There are several sources of variance which could have swayed the results. While it was the intent of the researcher to have participants complete the questionnaire to the best of their abilities, it is reasonable to assume that some did not. The participants that were recruited received extra credit in exchange for their participation and were not affected by the outcome of their individual questionnaire results; therefore, it is plausible that some participants simply filled out the questionnaire without much thought or effort. This could have altered the results of the data, because inflated scores lead to increased means for both conditions. Participants were also recruited in lump-sums. All 33 participants in the informal condition of the study were recruited during the first half of Lindenwood University's spring 2010 semester, while the remaining 27 were tested in the final weeks of the same semester. This difference could be an indication of individual desperation for extra credit in various Lindenwood Participant Pool-approved courses and reflect poor academic standing.

Another possible source of variance could have been an incident which occurred during one of the formal research condition sessions. Three participants were testing and an individual came into the session frantically trying to locate his/her car keys. This individual noticeably interrupted the participants from focusing on their questionnaires and may have affected their individual performance. While this only occurred during the testing of three subjects it may have led to inaccurate results.

While recruiting participants, there was some difficulty in acquiring subjects for the formal condition of the study. No participants dropped out during the questionnaire, but many rescheduled their appointments, because of cancellation.

An unexpected result of the study which was not expressed in the statistical analysis is the increasingly high number of incorrect answers to questions pertaining to English comprehension. This could be the result of a variety of sources of variance such as individual levels of intelligence, perceived difficulty or the influence of researcher dress. While it is impossible to deduce the true nature of this pattern, the prevalence of incorrect responses for this category of question was very high.

The major shortcoming of this research is validity. While the items on the questionnaire were constructed appropriately and the location of the research sessions ensured that only the intended manipulation of researcher dress was expressed, the low number of participants recruited (60) does not translate well to the general public. The research maintains high levels of internal validity throughout, but further research of increased numbers of participants will ensure more strength in external validity.

This study is limited in that it only identifies difference in participant achievement between the two conditions. There are several other variables that could have been analyzed in an attempt to further understand the affects of researcher dress and participant achievement. Administering a demographic survey which identified individual sex, GPA, ethnicity and student status would have been beneficial in understanding various differences among participants. This could be done in further research allowing increased understanding of the various affects that classroom environment can have on individual achievement in accordance with the main effects of participant sex, GPA, ethnicity and student status. Previously research conducted by Ellington and Leslie (2008) found that individual perceptions of African American adolescents in particular are formed primarily by perceptions influenced by physical appearance, so extending future research to incorporate ethnicity could be very beneficial.

Regardless of its limitations, this study remains beneficial to various levels of academia. In our world's current social climate, efforts are continually being made to better understand what elements of the classroom environment can be amplified and which can be muted to encourage increased student performances. While the results are not externally valid, the premise of the study is. With increased numbers of subjects, the results will be increasingly justified and could possibly solve some of our nation's (if not the world's!) inadequacies when it comes to education.

References

- Amazon. (2009). The costume of a teacher. *The Elementary School Teacher*. Retrieved May 11, 2010, from <http://www.soerlandetskal.com/5-the-costume-of-a-teacher>
- Ellington, T. & Leslie, C. (2008). Dress, self-esteem, self-efficiency and the academic achievement of African-American high school girls. *International Journal of Fashion Design, Technology and Education*, 1(2), 69-78.
- Freeburg, B., Hagler, B., Workman, J. & Anderson, M. (2008, May). *Perceptions of CTE teacher professionalism: Appearance, voice, & message*. Paper presented at the meeting of Research - Developing Teachers for CTE, Hilton, SC.
- Perlmutter, D. L. (2005). Physical appearance and student/teacher interactions. *Education Digest: Essential Readings Condensed for Quick Review*, 70(7), 52-57.
- Young, D. (2002). Classroom environment: The basics. *K-12 Teaching and Learning: UNC School of Education*. Retrieved May 11, 2010, from <http://www.learnnc.org/lp/pages/734>

Appendix A

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short questionnaire asking general college level questions pertaining to science, math, literature and English. I understand that I will be allotted 10 minutes for my completion of the questionnaire. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the LPP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date: _____
 (Signature of participant)

_____ Date: _____
 (Signature of researcher obtaining consent)

Student Researcher Name and Number:

Ryan Holley
 (636) 698-4229

Rjh770@lionmail.lindenwood.edu

Supervisor:

Dr. Michiko Nohara-LeClair

Course Instructor

(636)-949-4371

mnohara-leclair@lindenwood.edu

Appendix B

Participant ID: _____

Questionnaire

Circle the correct answer

1. Who wrote the play Hamlet?
 - a) R.L. Stine
 - b) Robert Frost
 - c) Edgar Allen Poe
 - d) William Shakespeare

2. What is the nucleus of an Atom?
 - a) A positively charged Ion which orbits the Atom.
 - b) A densely arranged region of protons and neutrons, located at the center of the atom.
 - c) A subatomic particle with no electric charge, slightly larger than a proton.
 - d) A negatively charged Ion which orbits the Atom.

3. On a statistical graph, what is known as the Y-Intercept?
 - a) The exact point in which a line crosses the Y-Axis.
 - b) The exact point in which a line crosses the X-Axis.
 - c) The rise of the line divided by the run of the line.
 - d) A plotted point on the graph.

4. Underline the adverb in the following sentence.

“John plays the guitar well.”

5. If a quarter and a brick were dropped at the same time on the surface of the moon, which would land first?

- a) The Quarter
- b) The Brick
- c) Neither, there isn't gravity on the moon.
- d) They both would land at the same time.

6. In the following equation, what is the value of X? $25 = 12x - 11$

- a) Not enough information to solve.
- b) 4
- c) 3
- d) 2

7. Underline the pronoun in the following sentence

“Linda is my new neighbor, she seems very rude.”

8. Which is longer, a mile or a kilometer?
- a) Mile
 - b) Kilometer
 - c) They are the same distance.
 - d) It depends on what continent you're in.
9. What is the Mode of these numbers? 2,4,2,6,7,9,9,2,3
- a) 34
 - b) 2
 - c) 9
 - d) Not enough information to compute.
10. In English Literature, what is an Epic?
- a) A story in which the main character dies at the end.
 - b) A comedy.
 - c) A lengthy narrative, involving a hero that possesses those qualities most important to that particular culture and time.
 - d) A short story in which a hero defeats a monster.
11. Underline the possessive pronoun in the following sentence.
- "I could not stand his attitude, so I left."*

12. All of the following are characteristics of a covalent bond among molecules EXCEPT?

- a) Made of non-metals
- b) Shares molecules
- c) Neutrally charged
- d) Forms weak bonds

13. Solve the following problem following the correct *order of operations*.

$$[5 - (7 - 2(7 - 2) + 2)] - 5$$

- a) -8
- b) 23
- c) 5
- d) 9

14. The award winning novel “Moby Dick,” began with which of the following quotations?

- a) “The seas were angry that day my friend.”
- b) “Call me Ishmael.”
- c) “There is a wisdom that is woe; but there is a woe that is madness.”
- d) "Towards thee I roll, thou all-destroying but unconquering whale.”

15. All of the following are acceptable writing formats for college English EXCEPT?

- a) MLA
- b) NLA
- c) APA
- d) Chicago/Turabian

Appendix C

Feedback Letter

Thank you for participating. There were two conditions in my study. Condition one was conducted in a formal classroom setting in which the researcher was formally dressed (dress pants/shirt and tie), while condition two was conducted in an informal classroom setting in which the researcher was informally dressed (jeans/t-shirt). I believed that individual success of students taking achievement-oriented examinations could be influenced by the environment in which the examinations were administered (the appearance of their researcher). I thought that students would perform better in an environment conducive to achievement (formal dress); whereas, students would perform worse in an environment which did not promote achievement (informal dress). The results of the questionnaires will be used to determine the affect of classroom environment and the dress of instructors on student academic achievement. The results of this study are very valuable to the world of academics, because they can be used as a tool to promote higher academic achievement in the classroom.

Please note that I am not interested in your individual results; rather, I am only interested in the results of a large group of consumers, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. My contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact me and I will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigator:

Ryan Holley (636)-698-4229 (rjh770@lionmail.lindenwood.edu)

Supervisor:

Dr. Michiko Nohara-LeClair (636)-949-4371 (mnohara-leclair@lindenwood.edu)

Appendix D

Script

- Welcome, thank you for choosing to participate in my study. Will you please read through the informed consent form, and if you agree to participate, please sign and date both copies.

- You are about to participate in a study that measures your knowledge of college freshman level English, math, science and literature. You will be given 10 minutes to complete the 15 item questionnaire. If you have any questions feel free to ask. If for any reason you feel uncomfortable or upset, you may leave the study without any penalty.

See It! Hear It! Learn It!!Mansi Brat³

The purpose of the following study was to determine if quick and accurate learning can be accomplished by combining visual and auditory modalities amongst a group of participants. By using different modalities, the researcher aimed to demonstrate that helpful and effective learning study strategies can be generated. Thus such techniques involved the use of more than one sensory channel to impart learning. It was noted that the strategies could be very effective when a student had to learn words or paragraphs containing difficult words. Finally, the researcher wanted to determine whether the participants who were exposed to more than one learning modality performed better than those who were just exposed to one? Significant differences between the three groups of participants were found at the completion of the study. It was noted that the participants in the visual group depicted a mean of 14.2667 and a standard deviation of 4.51136; those in the auditory group depicted a mean of 14.0667 and a standard deviation of 3.12745; lastly those in the visual and auditory group depicted a mean of 16.0667 and a standard deviation of 2.43389. The implications of the study thus, revealed a significance level $>.05$.

The research for the current study dealt with how different learning modalities can be combined to foster better learning in individuals. Literature review from the past formed a discrete conception of the idea stated above. The researcher's hypothesis was to examine whether by combining visual and auditory modalities, an individual could perform better on

³Mansi Brat, Psychology Department, Lindenwood University.

Correspondence concerning this project should be directed to Mansi Brat, Lindenwood University, 209 S. Kingshighway, Saint Charles, MO, 63301, mb053@lionmail.lindenwood.edu, (636)-426-0719.

learning tasks than those who were exposed to only one modality, (i.e. either visual or auditory). Research findings from other sources indicated similar viewpoints. Felton (2008) talked about visual literacy- in other words, how pictorial representation has become part of an individual's communication and meaning-forming skills. When examining the article in detail, it was noted that creating images of various aspects and communicating through them has become a popular culture-phenomena, and the society is in itself producing a number of visual literate learners who are visual communicators too. Felton (2008) mentioned that visual learning not only enhances one's ability to comprehend various concepts but also encourages a student to produce and use substantial actions for improved learning. In addition, through continuous training and follow up, a student cannot only utilize the different interpretations of visual learning but can also master its language structure.

As a matter of fact, Felton (2008) stated that visual learning has been a concept of the past and was in use earlier, however, the practice of visual literacy for communication, was developed as a new formed skill over the past decade as a product of new communication technologies. In addition, Felton (2008) in his article developed the idea that seeing does not only involve submissive reception of a certain stimulus but also includes active creation of meaning of the particular stimuli. He also stated that just as writing is an essential tool to develop textual literacy, trying to create a meaning out of images or to have a critical viewpoint when assessing images is also an important component when learning visual literacy. Felton (2008) argued that although schools have fostered the learning skills in students through textual literacy, visual literacy is being adopted as a discipline in various higher education institutions. For example, as cited in Felton's (2008) article, the Spatial Perspectives on Analysis of Curriculum program is a good way to explain the concept of visual literacy. It helps teachers of academic

institutions teach spatial thinking in the areas of social and environmental sciences by using tools such as a 'virtual globe'. Even in other areas such psychology and education, visual images are used by college teachers to promote a student's capabilities and expertise (Felton, 2008).

In a similar article, De la Iglesia, Buceta and Campos (2005) examined how using mental images as a learning modality can foster faster learning amongst people suffering from disabilities such as Down's syndrome and other intellectual disabilities. De la Iglesia, et al. (2005) mentioned that there have been several studies that have not only used images or drawings as an approach for better learning, which they describe as prose learning but the learning has even increased the reception and retention of people without disabilities. However, for people who require special educational needs, adopting such techniques has been a recent process (De la Iglesia, et al, 2005). In addition, the article suggested that people suffering from disorders such as the Down's syndrome have immense difficulty when retaining verbal information as compared to visual information, but for people with intellectual difficulties it is the other way around. For this reason, a study was conducted on similar terms using 22 children, of which 15 were boys and 7 girls, each suffering from Down's syndrome.

In De la Iglesia, et al.'s (2005) first experiment, the children were divided into three groups and all three groups were given a different task to complete. In the Auditory condition, the participants could only listen to the story that was being recited to answer related questions at the end of it. In the Drawing condition, the participants were shown pictures of the story in an appropriate sequence as they heard the story being recited, again to answer some questions at the end of it. In the Mental Image condition, the participants were given training to form mental images of a different story before the actual story was presented (De la Iglesia, et al, 2005). In the training session, the participants were taught how to form mental images of a story in the

correct sequence when one actually listens to a particular story. To ensure the validity of the training the participants were asked if they could form images of the story or not. Once they were able to do so, the researchers made sure that the process could be repeated in order to ensure re-learning.

On the other hand, the results showed significant differences. When recalling words the results varied tremendously between the auditory condition and drawing, and drawing and mental imagery. The level of recalling words was very high for the drawing condition than the other two (De la Iglesia, et al, ect 2005). Also, the level of recalling words was higher for the mental imagery group than the auditory group. In addition, when recalling ideas, the results varied for mental imagery strategy and the auditory condition and between auditory condition and drawing to a significant extent. When recalling ideas immediately, the level of recall was again very high for the drawings group than the auditory and mental imagery (De la Iglesia, et al. 2005).

In another article, Newcomer and Goodman (1975) basically stated that most children in school fail to follow the instructions given to them due to numerous modality deficits that come in their way while the information is being processed in the brain. Thus, to examine what learning modality best suits a child, the researchers conducted a study which revealed that when a child was exposed to a particular learning modality on the basis of his preference, i.e. those who preferred visual were presented with visual learning tasks and those who preferred auditory were given a auditory task, did not perform significantly better, while instructions were given to them or even while processing information (Newcomer & Goodman, 1975). However, it was noted that the use of visual modality increased the results of information processing amongst the individuals despite of the preferences made by the individual. Newcomer and Goodman (1975)

thus, concluded that superior performance could be observed when children of any group i.e. either high auditory, low auditory, high visual or low visual were given instructions through visual modalities, with the exception of those who were in the high visual group since the children of this group were able to process information displaying equal results when using either visual or auditory modality.

In Most and Greenbank's (2000) study, the literature stated that the ability of a participant to recognize emotional meanings depended on the sensory channel that he/she is exposed to. The researchers determined the discernment of emotions on the basis of auditory, visual and auditory-visual sensory modes. Participants of this study were from two groups; one that was suffering from learning disabilities and the other that was not. Its results demonstrated that the participants with learning disabilities and those without the disability achieved high scores when recognizing emotional cues through the auditory-visual sensory channel, as compared to the rest of the participants (Most & Greenbank, 2000).

However, in a contradicting study, however Budoff and Quinlan (1964) depicted a completely different approach about learning modalities. The researchers examined the effects of auditory (referred to as aural) and visual learning in primary grade children. For the purpose of the study, Budoff and Quinlan (1964) recruited 56 second-grade children, assuring that none were suffering from a deficiency that could cause hindrances in auditory or visual perception. Thereafter, the participants were first exposed to a visual task which included a list of paired words, and then to the auditory (aural) task in which a list of words was prerecorded on a magnetic tape. The stimulus of both tasks was presented in a way that the time taken for each trial was 80 seconds. In addition, there was a one hour interval between the exposures of the two tasks for maximum output from the participants (Budoff & Quinlan, 1964). The results

significantly noted that auditory learning was more effective amongst such children, in terms of accuracy and effectiveness; also the use of the particular approach consistently decreased as the child grew older.

In terms of the current study, its rationale was to examine if quick and accurate learning could be accomplished by combining visual and auditory modalities. The main idea behind developing this study was to determine how learning can be enhanced by using different modalities, and also to what extent would it affect the retention or the recall ability of a participant. Thus, for the purpose of the study, the researcher created three kinds of learning tasks, namely a visual task, an auditory task and a visual and auditory task. In addition, the participants involved in the study were divided into three groups; each group was then given the assigned task to complete. It was hypothesized that the group of participants who were exposed to both auditory and visual learning techniques would be able to learn words more accurately and in a proper sequence, than the participants of other groups who were exposed to only one modality that is either visual or auditory.

Method

Participants

For the purpose of this study 45 undergraduate students were recruited from Lindenwood University's Participant Pool (LPP). A total of 13 men and 32 women were part of the study. The participants took part in the study to earn bonus points in introductory general education courses at Lindenwood University. The participants were thus, tested on the basis of using learning modalities, which were either visual, auditory or both, taking into consideration that no participant suffered from any conditions that could cause hindrances for him/her from performing in the study.

Materials

To ensure the basis of the study, the researcher used various materials to test the participants. The materials included a PowerPoint presentation of words (See Appendix A), each on a slide, which was shown to the participants on a laptop screen. The laptop was a CW series, model Sony Vaio. The researcher also used audio recordings of words, those listed on the PowerPoint slides, for an auditory presentation. The sounds were pre-recorded on an audio-recorder and played to the participants. The word selection was done on a random basis, however the auditory stimuli was recorded on the Microsoft Windows sound recorder software through Google translator.

Procedure

At first, each participant was asked to sign up for the experiment at the LPP office's sign up board, where he/she selected the timings of the experiment suitable to him/her. At this point, a participant knew what time to take the study and where the study would take place. Thereafter, when the participants arrived at the room where the study was scheduled to be conducted, they were given a packet which consisted of the following paperwork to complete- two informed consent forms (See Appendix B), a feedback letter (See Appendix C), and a demographic questionnaire (See Appendix D) and a document with the researcher's list of participants. Each of which he/she was asked to fill out. On completion of the forms, the participant was asked to keep the feedback letter and a copy of the informed consent form, while the researcher kept the demographic questionnaire as well as a copy of the informed consent form. The participant, at this time, i.e., prior to the beginning of the study was debriefed by the researcher, stating that he/she was permitted to leave the study anytime they felt uncomfortable about taking the task.

Once the participant had all the required information needed before the study could begin the researcher randomly assigned each participant to one of the either groups namely, the visual group; the auditory group or the visual and auditory group. Based on the assigned group, the participant was asked to take a particular learning task which the researcher assigned. For this study, the researcher designed three kinds of learning tasks for each group, accordingly. The learning trials included a visual learning task, an auditory learning task and a visual and auditory learning task.

The visual task was given to the participants of the visual group only. It consisted of a list of words which was shown on a Power Point slide show, with an interval of 10 seconds between each slide. The participants were asked to memorize the words as the slide show progressed, in the particular sequence he/she could see the words. The auditory task was given to participants of the auditory group only. It included the same list of words (which were used in the first task) pre-recorded on an audio-recorder and as recording was played the participants could hear the words, which they were again asked to memorize, in the sequence he/she could hear the words. In this task, the recording of each word was 10 seconds apart. The visual and auditory task which included a combination of the visual task and the auditory task was given to the participants of the visual and auditory group only. To maintain consistency, this task was combined in a way that the slide show of the words and the recordings of the same words played simultaneously i.e. each word appeared on the screen appeared at the same time its recording played. In this group too, the participants were asked to memorize the words in the sequence he/she saw and heard the words.

In addition, the participants of each group were exposed to the list of words twice, i.e. the PowerPoint slide show for the Visual group was shown twice. The recordings for the auditory

group were also played twice. The auditory and visual group was also presented with the same list of words; again twice i.e. the participants of this group could see the list words on the Power Point slide show and along with it could hear the audio recordings of the words simultaneously. In each of the three cases, after the participants were exposed to the same list of words twice, they were asked to write the words in the sequence they viewed or heard them, on the data collection sheet (See Appendix E) provided by the researcher. Thereafter, once the researcher had collected the data from each participant, the data was scored. For each correct response i.e. correct spelling and correct placing of the word, a participant received 2 points; for a partially correct spelling and correct placing of the word, a participant received 1 point. However, for a correctly/incorrectly spelled word but a wrong placing, a participant didn't receive any points. The scoring of the data was determined by the researcher, keeping in mind the ideology to enlist the accurate sequence of the words. Thus, the maximum score on each learning task for a particular group was a total of 20 points, while the minimum scores obtained from the results, were 6 points, 8 points and 12 points for the visual group, auditory group and visual and auditory group, respectively.

After completion of the study, the participant was handed his/her participant receipt which was a proof that he/she was part of the study and was thereafter eligible to earn bonus points for the particular study through the LPP. In addition, the participants were also handed a candy by the researcher as a token of appreciation for being part of the study.

Results

The results of the study demonstrated significant differences between the three groups of participants, in accordance of the demographic information retrieved from them. However, when demonstrating what the researcher hypothesized, i.e. learning a list of 10 words through a

combination of both visual and auditory modalities would generate higher outcomes on a task than learning the same list using only one modality (either visual or auditory), a one-way analysis of variance, using the SPSS software was conducted to compare the overall performance of the individuals on the recall test by study method. The results revealed no statistically significant effect of study method, $F(2,42) = 1.514, p > .05$.

In addition, the means and the Standard deviations of the three groups were as follows; visual group depicted a mean of 14.2667 and a standard deviation of 4.51136; the auditory group depicted a mean of 14.0667 and a standard deviation of 3.12745; the visual and auditory group depicted a mean of 16.0667 and a standard deviation of 2.43389.

Discussion

Although the results of the study didn't report significance in terms of the study method, when examining the means of each group based on participant performances, there were slight differences amongst the three distinguished groups. In addition, even though the literature review from past research revealed significant results in similar studies; the results for the present research, however still did not coincide with what the researcher theorized the group of participants who are exposed to both auditory and visual learning techniques learnt words more accurately, than the participants in other groups who are exposed to only one modality that is either visual or auditory. This was also particularly observed after viewing the results from the one-way analysis as well as the data sheets that the researcher collected from the participants. Nevertheless, the Auditory and Visual group participants were the ones who got the most correct responses they were able to memorize and write the words in the correct sequence as asked by the researcher.

On the other hand, the researcher observed certain limitations while conducting the study. Since, there is evidence of similar research in the past; a larger group of participants could have yielded at least some significance in the current study. In addition, the area where the study was being conducted had other researchers present at the same time, conducting their respective studies, which made way to hindrances for the participants of this study. Each participant in this study was asked to do the learning task individually, with only the researcher present in the room and no other participants at a particular time; however the participants reported that they could not concentrate fully while memorizing as there were disturbances outside the room where the study was being conducted.

Other limitations that the researcher highlighted, those which interfered with the results of the study were that the words presented to participants were easy enough to learn as none of them complained about the level of difficulty, except for the participants who were in the auditory group and at times could not fully comprehend the words due to its ambiguity. On similar terms, for participants from an international background i.e. for those English was a second language, clearly understanding certain words in terms of the accent of the recorded voice could have been difficult. Also, the preference of using a particular learning modality by a participant could be another limitation, since the participants were assigned to their groups on a random basis and thereafter asked to perform on the learning task based on their group assignment. The researcher even observed that the recordings of the words that the participants were exposed through the audio-recorder were not extremely clear; even though they were consistent i.e. the words were recorded in a female's voice only. In addition, some participants perceived the study as being hard one when they were told that they would have to memorize a list of words and then write it in its sequence, even before judging the difficulty level. There

were some participants who feared their performance on the tasks assigned, while on the other hand there were those who did not follow the instructions given by the researcher, appropriately. Lastly, the researcher also observed that some participants did not take the study very seriously and didn't write the responses on the data sheet legibly.

Nevertheless, the overall indications of the study lead to the importance of multi-sensory approach that could be used as a helpful tool to impart learning, specifically amongst primary and secondary grade children and even amongst slow learners (dyslexic children). In addition, if the limitations of the study are amended, the results could yield significant results since, according to what the researcher observed while conducting the study, the participants using both the visual and auditory modalities were less anxious in terms of comfort level when compared to those who used only either visual or auditory.

References

- Budoff, M. & Quinlan, D. (1964). Auditory and visual learning in primary grade children. *Child Development, 35*, 583-586.
- De la Iglesia, J. Carmen F., Buceta, M. J. & Campos, A. (2005). Prose learning in children and adults with down syndrome: the use of visual and mental image strategies to improve recall. *Journal of Intellectual & Developmental Disability, 30*(4), 199–206.
- Felten, P. (2008). Visual literacy. *Academic Journal, 40* (6), 60-64.
- Most, T. & Greenbank, A. (2000). Auditory, visual, and auditory-visual perception of emotions by adolescents with and without learning disabilities, and their relationship to social skills. *Learning Disabilities Research & Practice, 15*(4), 171-178.

Newcomer, P.L. & Goodman, L. (1975). Effect of modality of instruction on the learning of meaningful and nonmeaningful material by auditory and visual learners. *The Journal of Special Education*, 9(3), 261-268.

Appendix A

List of words used in the study for both visual and auditory versions-

1. Agreement
2. Conscious
3. Stumble
4. Fiction
5. Obstinate
6. Rebellious
7. Photosynthesis
8. Orphan
9. Superficial
10. Empathy

Appendix B

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to learn a sequence of different words that are presented to me by the researcher. I am aware that I will be asked to recall the words that were narrated to me in the same sequence that they were presented. I am also aware that I may be observed by the researcher to determine how easily I am able to recall the list of words. Also, to the best of my knowledge, I am not experiencing any hearing or vision problems that could affect my ability to take part in this study. I understand that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the LPP office, a completed parental consent form that allows me to give consent as a minor.

 (Signature of participant)

Date: _____

 (Signature of researchers obtaining consent)

Date: _____

Student Researcher's Name and Contact:
 Mansi Brat
mb053@lionmail.lindenwood.edu
 (636) 426-0719

Supervisor:
 Dr. Michiko Nohara-LeClair
mnoharleclair@lindenwood.edu
 (636) 949-4371

Appendix C

Feedback Letter

Thank you for participating in my study. My goal was to find out whether combining learning techniques makes learning or memorizing easier. My research consisted of three groups of participants; group 1- was the visual group, group 2- the auditory group and group 3- the visual and the auditory group. The hypothesis of my study states that the group of participants who are exposed to both auditory and visual learning techniques would be able to learn words more accurately, also retain them for a longer period of time than the participants in other groups who are exposed to only one modality that is either visual or auditory since, the mentioned technique involves the use of more than one sensory channel to impart learning.

Please note that we are not interested in your individual results; rather, we are only interested in the results of a large group of participants, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. Our contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact us and we will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigator:

Mansi Brat
mb053@lionmail.lindenwood.edu
636-426-0719

Supervisor:

Dr. Michiko Nohara-LeClair
mnohara-leclair@lindenwood.edu
636-949-4371

Appendix D

Demographic Information

Please fill out the required information in this questionnaire:

1. Age: _____

2. Gender: _____

3. Class Rank: _____

4. Are you aware of any visual, auditory or other conditions you may have, that may interfere with your performance on the task today? Please select one:

YES

NO

I DON'T KNOW

Appendix E

DATA COLLECTION SHEET

Please fill in the blanks as per the sequence of words that you were exposed to by the researcher:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Relationship between Time and Test Anxiety

Heather Damper

Claudette Reed⁴

They hypothesis for this study was that if a clock was placed in the classroom then students will suffer from more test anxiety due to increased heart rates measured by their pulse. Due to the fact that there are no clocks in any of the classrooms that the researchers visited the researchers concluded that the outcome of this study would be beneficial to the Lindenwood University Campus and other campuses that do not have clocks in the classrooms. The participants that were a part of this study were all recruited through the Lindenwood Participant Pool. The participants varied in gender and race and were all over the age of 18 years. The methodology used for this study was a between-participants design. Each participant was randomly assigned to either Group A, who had a clock in the room, or Group B who did not have a clock in the room. All participants were instructed to take a timed test and finish however many problems they could within a 2 minute time period. We found that although our data did not yield a significant difference between having a clock in or out of the classroom on level of test anxieties as measured by to increased heart rates, we did find other underlying factors that could suggest that a clock in the classroom may be beneficial after all.

The researchers were determined to find the connection between test anxiety and time.

This problem was worth trying to solve in many ways. Test anxiety is a well know problem that extends far beyond the experience of school. Test anxiety can be seen throughout modern culture

⁴ Heather Damper, Psychology Department, Lindenwood University; Claudette Reed, Psychology Department, Lindenwood University.

Correspondence concerning this project should be directed to Heather Damper and/or Claudette Reed, Lindenwood University, 209 S. Kings highway, Saint Charles, MO, 63301.

Heather Damper, hd678@lionmail.lindenwood.edu; Claudette Reed, crr222@lionmail.lindenwood.edu

whether it is applying for a job or applying for graduate school. This study will also teach us how to become better test takers. The purpose of this study was to find out if having a clock in the classroom would negatively affect a student's anxiety level measured by an increase in heart rate. At Lindenwood University campus there are few clocks in the classroom, this project's outcome has become beneficial to the campus. After administering the appropriate research we did find out if having a clock in the classroom will be beneficial to students who are taking tests. Also this project gave people more insight on how to deal with test-taking strategies. This study was different from other studies about test anxiety because in this study clocks were a part of the environment rather than the intrusive item. Things that have been discovered in studies are about feelings before taking an exam. Our study also looks at the symptoms of taking a test and what encounters there are before, during and after the timed test. When an individual worries before an exam it will have an extreme effect on test performance and abilities to perceive test problems (Ashcraft, 2002). The test that the participants have taken is based on 100 multiplication problems that were timed in two minutes. It is known that the majority of the time being put under pressure affects what we are trying to do and may alter the alternative. Researchers Smith and Wolf (1995) said, students who work harder on a test do this because it benefits them, but when it comes to more important tests like finals certain aspects will trigger more test anxiety, which will affect the student.

In college many tests are significant to the students, so Smith and Wolf (1995) were saying that when a test is important to the student they work harder to do well but while knowing they want to do well they began to experience test anxiety which makes students more susceptible to test anxiety. Strategies must be taken into consideration so that students can improve their

performance to do well. Using good test-taking strategies improves students' success in school, students' perspectives towards tests and causes test anxiety to decrease (Dodeen, 2008).

Test anxiety can also be helpful. Test anxiety can also alter student's ability to perform well on tests (Mazzocco & Tsui, 2007). Due to lack of time to complete all tests questions it can causes students to be more prone to anxiety that will affect their performance. Timed and untimed math tests are known to be great predictors of test anxiety test. Literature suggests that students should organize their own beliefs and strategies to decrease their anxiety in mathematics (Ahmet & Ahin, 2009). Anxiety is usually a buildup of students not knowing the study material very well .this leads to previous learning abilities and how to cope with stress when it comes to tests. A research study was done talked about what level of learning had to do with performance and test anxiety. The findings of the current study support the notion that mathematical anxiety may be related to the level of learning as opposed to overall mathematics performance (Cates & Rhymer, 2003). The cause of test anxiety comes from previous schooling. Some teachers do not teach strategies or prepare you for tests administered in college. So the way a student may perform in college is based on learning from high school. College students come to school with little knowledge about the abilities that should be there to become a better learner (Daigle & Rachal). Test anxiety can build up from many things. But if you enhance your test taking ability by learning strategies you will become a better test taker.

Our study was devised to make students aware of their anxieties when it comes to timed tests and to help better prepare them for future tests with a handout on how to overcome test anxieties (ACT prep.com). The method in which we conducted our study is listed below.

Method

Participants

After passing the LPP quiz we were able to recruit participants from the LPP for the study. There were in all 25 participants. Age, sex and status were not needed for this study. We contacted our participants through e-mail or telephone number they put down for the study as they signed up. They came freely to sign up for the study in young 4th floor across from room 407. They were given a receipt to obtain bonus points from the study.

Materials

There were 25 participants and two groups Group A with a clock and Group B without a clock. In group A the participants were placed in a room that had a wall clock present in the room and in group B there was not a wall clock. A between participants design was used. The classroom we did the study in was in was well equipped for taking tests. For Group B (without clock) we just took the wall clock down and everything else remained the same about the classroom. The tests were timed and a stopwatch was used to take Participants' pulse. We conducted an anxiety test (Timed test) and a survey. The test consisted of 100 multiplication problems that were created by the researchers. The participants were allowed two minutes to solve as many problems as they could without the use of a calculator. A survey was also given that asked questions relating to anxiety.

Procedure

First we requested a room and then receive it from the LPP office. After a signup sheet and description of the study was posted, researchers preceded to get all the materials needed for the study on that particular day. Once participants arrived they were randomly assigned to their group and given two consent forms to ensure that they fully understood their roles and rights in

this study. To protect participant's confidentiality the consent form and participants receipt were the only time participants wrote their names down. Next participants were allowed one minute to assess their heart rate by finding their pulse. Once the heart rate was found researchers wrote down the information on the soon to be answered questionnaire and administered the timed test. The researchers informed the participants that they had only two minutes to complete as much of the test as they can with only the use of scratch paper. Once the participants ran out of time their test were collected by the researcher and the participants were instructed to take their pulse one last time participants were then asked to finish the rest of the questionnaire. A feedback letter was given to participants once they completed the small questionnaire to debrief the participants on the rationale of the study and what we expect to find from all the information retained from all the groups. The feedback letter also contained where and when the participants were able to receive a full copy of our study once completed, if they chose. Finally after all the research papers were completed the participants received their compensation for participating in the study and a helpful advice guide on test taking strategies from the ACT prep website. The compensation for this study consisted of all LPP participants receiving one point extra credit.

Results

The findings of our study did not support the hypothesis. Although our findings did find a slight difference between active and resting heart rate with a clock and without. It was not significant enough to prove or hypothesis. The mean of having a clock is 4.083 and the mean for without a clock is -7.7692. We used an independent t-test, which is $t(23) = 1.691, p = .104$, which tells us that it is not significant. When it comes to keeping track of time, two people never, eight sometimes and three always do. The students that glance at a clock or watch, 20 students glance 1 to 4 times a test. The most important finding from our study is that 76% of our

participants prefer a clock in the classroom when they are taking a test. This means that even though our hypothesis was not significant we however did find some important information that could be worth looking forward into.

Discussion

Throughout our study there were many limitations that could attribute to the fact that we did not find our hypothesis supported. One major limiting factor in our study was the fact that we did not collect all the participants that we needed. If we had more participants we could have had a more varied source of data. Another limitation was the area where we held our study; although the room was sufficient enough to take a test in, it was not the same as a classroom. We feel that if the participants took their test in an environment closely related to a real test taking environment maybe the participants would have taken the study more seriously.

Even though our study was not determined by the basis of how well they did on the timed test we did however find patterns in which the students began and finished their test. One pattern found was that even though the participants were instructed to answer the questions in no particular order, all of the participants tried to complete the first two rows of questions before scattering the rest of their answers. This shows us that maybe in the beginning the participants took the test seriously (like a real test) in the beginning go but towards the end they just wanted to make it look like they completed a lot before the time ran out.

For future studies on this topic a lot more detail can be collected. One example of getting more detail could be comparing how well participants did on the test to their heart rates. Another improvement could also be getting more demographic information so we can account for age, sex and status on campus. This would show us what age, sex, and status is better at coping with test anxiety. Another major improvement could also be adding another form of timed test like a

timed comprehension test. If all of these factors were to be taken into consideration then this study could become a very empowering and effective study that could benefit not only college but non-college students as well.

References

- Amhet, E. & Sahin, K. (2009). Predicting college students' mathematics anxiety by motivational beliefs and self-regulated learning strategies. *College student journal*, 43(2), 631-642.
- Ashcraft, M.H. (2010). Math anxiety: personal, educational, and cognitive consequences. *Psychological Science*, 11(5), 181-185.
- Cates, Gary L., & Rhymer, Katrina N. (2003) Examining the Relationship between mathematics anxiety and mathematics performance: an instructional hierarchy perspective. *Journal of Behavioral Education*, Vol. 12 Issue 1, p23-34
- Dodeen, H. (2008). Assessing test-taking strategies of university students: developing a scale and estimating its psychometric indices. *Assessment & Education in Higher Education*, 33(4), 409-419.
- Mansell, W. (2009). Learning problem reported by college students: are they using learning strategies. *Journal of Instructional Psychology*, 34(4), 191-199.
- Mazzococo, M.M.M. & Tsui, J.M. (2007). Effects of math anxiety and perfectionism in timed versus untimed math test in mathematically gifted sixth graders. *Mathematics and Perfectionism*, 29(2), 132.
- Smith, J. & Wolf, L.F. (1995). The consequence of consequence: motivation, anxiety, and test performance. *Applied Measurement in Education*, 8(3), 227-242.

Relationship between Student Involvement and GPA

Jennifer Ellen Burdick Paige Martin⁵

Data were collected regarding student involvement and grade point average in a way that could be beneficial to the students of Lindenwood University. Many students, whether actively involved in a sport, work, and/or other extracurricular activities, spend their college career engaging in time management. These people may have to sacrifice some schoolwork in order to accomplish everything they desire. In understanding this, the researchers wanted to see if the activities had a relationship with grade point average. The hypothesis stated that students who are actively involved outside of the classroom have less free time. These students may spend less times studying and may have a lower GPA compared to students who have more free time and use that time to study. 59 participants were recruited from the Lindenwood Participant Pool, of these; valid data were obtained from 51 of the participants. The results of this study revealed that there was no significant relationship between the number of hours participants studied and their actual cumulative GPA. Furthermore, no significant relationship was found between whether a students' involvement in extra-curricular activities and their actual cumulative GPA.

For most individuals, college is a necessary step in achieving a brighter future. However, making this step may come with challenges over the course of his or her education. Whether it is joining a sports team or simply supporting school functions, institutions encourage students to become active in their school and also maintain a 'healthy,' usually considered a C average or above, grade point average (GPA). Furthermore, many work in addition to attending classes in

⁵ Jennifer Ellen Burdick, Psychology Department, Lindenwood University; Paige Martin, Psychology Department, Lindenwood University. We would like to thank the Barry Finnegan and Jeffrey Weinrich in Lindenwood University Registrar's office for assisting us in obtaining grade point averages. Correspondence concerning this project should be directed to Jennifer Ellen Burdick, jb596@lionmail.lindenwood.edu, (217)-565-0077 or Paige Martin, plm694@lionmail.lindenwood.edu, (636)-866-9813

order to pay for their education. In many instances, students find themselves struggling to balance activities such as work, athletics, free time, and their studies simply to be successful in school.

There is very little research regarding student involvement and GPA. However, some research regarding high school and community college student involvement has suggested higher levels of student involvement are associated with higher academic achievement. Fox, Barr-Anderson, Neumark-Sztainer and Wall, (2010) found that a higher GPA associated with high school girls was independently related to sports team participation and physical activity. On the contrary, a higher GPA for boys was only related to participation on a sports team. However, in the study conducted by Fox, et al. (2010) the participants were asked to provide a self-report survey regarding their academic grades. This may have been a limitation of the study because the participants could have misreported their actual GPA.

Little research has been done to address the GPA's of working students. Our research could be very valuable considering the economic times the United States is facing. Many students make choices every day that lead to limited participation in their school system simply because they have to work to afford their education. Future studies should look at the growing population of working students and maybe even working student athletes.

Researchers also need to address students that are not involved in school or outside activities such as work. Common sense may tell us that a student who has more free time than a student, who does not, is more likely to have a higher GPA. However, other behaviors such as procrastination could also affect a student's GPA. Research findings suggest that students with low GPAs report the most problems with procrastination (Zarick, & Stonebraker, 2009). People procrastinate for many reasons, but Zarick and Stonebraker (2009) state that if we are not as

motivated to accomplish a task, then we simply put off the task until later. Many college students engage in procrastination which could easily contribute their GPA.

A question arises when looking at student athletes: How do they maintain a higher GPA when most collegiate athletes are gone for part of their semester? Some studies have suggested that student athletes may be encouraged to take many easy classes in order to maintain a minimum GPA to stay eligible for competition. It has also been assumed that athletes are underachievers from the academic standpoint (Horton, 2009). However, in the study conducted by Horton (2009), students stated that their dedication to their team increased the desire to stay eligible and keep desired grades.

In looking at student involvement in campus activities, studies have found that there is not a positive correlation between student involvement and GPA. In fact, a study done by Yin and Lei (2007) tested 109 undergraduate students. They used a four-part survey instrument. It should be noted that approximately half of the participants worked part-time while the other half did not. Interestingly, Yin and Lei (2007) found that there was a significant negative correlation between level of campus activity and overall student achievement. It is possible that over-involvement and socialization in campus activities may have produced lower academic results at this university (Yin & Lei, 2007). Importantly, student-athlete counseling is a key role in the success of students. Just like the stresses of working part-time and going to school, athletes have a number of stressors as well. Storch and Ohlson (2009, p 78-79) state that the “stresses imposed by athletic commitments may interfere with psychosocial and academic development.” A recommendation given to prevent psychological and psychosocial break downs of students is to devise a system where the student meets with faculty or advisors on campus to help the student deal with these issues (Storch & Ohlson, 2009).

The present study was conducted in order to examine further, the relationship between student involvement and GPA. The researchers hypothesized that students who are actively involved outside of the classroom have less free time, spend less time studying and have a lower GPA compared to students who have more free time and use that time to study. Surveys were administered to obtain actual GPA and time schedule management. GPA and individual schedules were compared in order to find a correlation between the two. In addition, actual GPA was compared with the number of hours a student worked if he or she had a job outside of the university.

Method

Participants

Fifty-nine participants were recruited through the Lindenwood Participant Pool (LPP) from Lindenwood University. However, data obtained from 51 were used in recording our data due to inconsistencies in the participant responses. For example, six of these participants' names and student ID they provided did not match up therefore, we could not obtain their GPA from the registrar's office. In addition to the six participants' data that was omitted, two more were omitted because of a labeling error by the experimenters. Participants were recruited from general education classes in psychology, sociology, anthropology, athletic training, and exercise science. These participants received extra credit toward their respective courses as a form of compensation for their volunteered time for this study. 15 men and 36 women made up the 51 participants recorded in the study. The majority of the participants were freshmen but the results consisted of 24 freshmen, 14 sophomores, 9 juniors, and 4 seniors.

Materials and Procedure

In this study, all participants were asked to complete a short survey concerning the participants' time management skills outside of regular classes. The survey and all other related material was given to the participant in a packet form. The participants were first given two consent forms. The first consent form was to simply verify that the participants were 18 years old and that the purpose of the study (Appendices A). The second consent form was to be signed if the participants agreed to have the registrar's office release their official cumulative GPA anonymously for the study (Appendices B). The second consent form was unique because it had to be kept confidential to protect the participants' information. Each participant was assigned a number by the researcher to use when entering data. Once participants agreed to release their GPA, they were asked to provide their student identification number and name so the registrar's office at Lindenwood University could access their GPA. The registrar's office then stripped the name and student ID number and replaced it with the assigned number provided by the researchers. Fortunately, all participants choose to release their cumulative grade point average. However, six participants GPAs could not be obtained due to error in identification.

Next, the participants were given a short survey (seven questions) asking their sex, class rank, if they were involved in any extra-curricular activities and if they worked outside of school. We asked participants to estimate their cumulative GPA to see if they overestimated or underestimated their GPA (Appendix C). Then participants were given a schedule labeled from 12:00AM through 11:00PM, Monday through Friday to indicate how many hours' participants reported working and time devoted to extra-curricular activities. The schedule had blank spaces for each time so that the participants could fill out their daily routine (Appendix D). Finally, after completing the study participants were given a feedback letter explaining our research, and

contact information for the experimenters were provided if the participants had any questions regarding the study (Appendix E). All data were kept securely in a locked box and kept in experimenters' personal living spaces. Once the study was complete all GPA consent forms were destroyed.

Results

There were more women than men in our study: 36 women to 15 men. Twenty percent of participants were not involved in extra-curricular activities outside of Lindenwood University while eighty percent were involved in extra-curricular activities. Furthermore, six people were involved in volleyball and four people were involved in wrestling. These were the most represented extra-curricular activities reported in our study out of 34 different activities that were represented. Most of the participants did not work outside of the university; 32 participants did not work while 19 participants did work.

The researchers hypothesized that the participants would overestimate their GPA. The correlation between estimated cumulative GPA and the participants actual cumulative GPA proved to be a strong positive relationship; $r(51) = .856, p < .01$

Furthermore, the hypothesis stated there would be a strong relationship between participants actual cumulative GPA and the number of hours he or she studies. The correlation between actual cumulative GPA and the number of hours the participants studied was a weak positive relationship; $r(51) = .193, p > .05$

The researchers looked at actual cumulative GPA and extra-curricular activities. They hypothesized if a person was involved in extra-curricular activities their actual cumulative GPA would be lower, however in our findings this was not the case. The correlation between the participants actual cumulative GPA and their involvement in extra-curricular activities was a

weak positive relationship; $r(51) = .164, p > .05$. This suggests that a participants' involvement in extra-curricular activities does not appear to be strongly related to their actual cumulative GPA.

The researchers then looked at the number of hours a participant worked and his or her actual cumulative GPA. They hypothesized there would be a strong positive relationship between the number of hours a participant worked and their GPA. Again, our findings did not support this hypothesis. The relationship between GPA and the number of hours worked was a moderately strong negative relationship; $r(51) = -.369, p < .05$. These findings suggest there is not a strong positive relationship between hours worked and GPA.

Discussion

The experiment conducted was a between participants design. The researchers hypothesized the students who are actively involved outside of the classroom have less free time. These students may spend less time studying and may have a lower GPA compared to students who have more free time and use that time to study. The findings did not support our hypothesis. The researchers first looked at the number of hours a student spent studying and the student's actual GPA. Then the researchers correlated, using Pearson's correlation, and found a weak positive relationship between the two suggesting there may still be a relationship however it is not a strong one. Next, the experimenters looked at whether the participant was involved in extra-curricular activities and the participants actual cumulative GPA. After correlating these two, it was also found that there was a weak positive relationship and suggests that there was not a strong relationship between the number of hours the participants worked or if they were involved in extra-curricular activities. Both of these findings do not support the stated hypothesis.

The researchers were also interested in participants' responses when asked about their estimated GPA, provided on the survey, and actual cumulative GPA, provided by the registrar's office. The researchers hypothesized that students would overestimate their GPA when asked on the survey. However, the results found that students were accurate in estimating their cumulative GPA. Using the Pearson's Correlation, the researchers correlated actual cumulative GPA with the participants estimated cumulative GPA and found there was a very strong positive relationship. These findings supported the second hypothesis and suggested that students were close to being accurate in reporting their estimated GPA.

There were limitations encountered in this study. The number of participants surveyed was small. The current study had many participants with a high GPA, which lead the researchers to wonder if the experiment description had deterred people with a lower GPA. The experiment description stated the current study dealt with GPA. It is possible that people with a low GPA would not feel comfortable signing up for our experiment because it had to do with releasing their cumulative GPA. Another limitation encountered was participants did not give their accurate information when asked to release their name and student identification number. A final limitation encountered was participants not correctly filling out the schedule part of the survey.

For future researchers in replicating the current study, the researchers suggest a more creative title that would not deter people with a low GPA from participating in the study. Furthermore, try to recruit participants as soon as possible to maximize number of participants and avoid measurement error by making sure all identification is correct. The researchers feel that even though the sample size was small and only one hypothesis was supported, the current research is a step in the right direction. More students are working while going to school because times are tough; therefore, future studies should look at the growing population of working

students and maybe even working student-athletes. On the flip side, future research should also be dedicating to those students who are not involved in any extra-curricular activities and/or work.

References

- Fox, C. K., Barr-Anderson, D., Neumark-Sztainer, D., & Wall, M. (2010). Physical activity and sports team participation: Associations with academic outcomes in middle school and high school students. *Journal of School Health, 80*(1), 31-37.
- Horton, D. Jr. (2009). Class and cleats: Community college student athletes and academic success. *New Directions for Community Colleges, 147*, 15-27.
- Storch, J., & Ohlson, M. (2009). Student services and student athletes in community colleges. *New Directions for Community Colleges, 147*, 75-84.
- Yin, D., & Lei, S. A. (2007). Involvement on hospitality student achievement and satisfaction. *Education, 128*(2), 282-293.
- Zarick, L. M., & Stonebraker, R. (2009). I'll do it tomorrow. *College Teaching, 57*(4), 211-215.

Appendix A

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short survey regarding my involvement in extra-curricular activities or work (outside of Lindenwood University). I understand that I should be able to complete this project within 10 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the LPP office, a completed parental consent form that allows me to give consent as a minor.

 (Signature of participant) Date: _____

 (Signature of researcher obtaining consent) Date: _____

Student Researchers' Names and Numbers:
 Paige Martin 636 866 9813
 Jennifer Ellen Burdick 217 565 0077

Supervisor:
 Dr. Michiko Nohara-LeClair
 Course Instructor
 (636)-949-4371
 mnohara-leclair@lindenwood.edu

Appendix B

ARM ID (provided by researcher) _____

GPA Informed Consent Form

I, _____ (print name) give permission to the researchers in this study to access my cumulative GPA in order to conduct this study. I do not have to fill out this form if I feel uncomfortable and I will not be penalized or not be able to take the experiment. My Lindenwood Student ID number is _____ and I am also aware that my GPA will be released by the registrar's office and stripped of any identifying information so that the researchers have no way of identifying which GPA belongs to whom.

_____ Date: _____

(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

Student Researchers' Names and Numbers:

Supervisor:

Paige Martin 636 866 9813

Dr. Michiko Nohara-LeClair

Jennifer Ellen Burdick 217 565 0077

Course Instructor

(636)-949-4371

mnohara-leclair@lindenwood.edu

Appendix C

ARM ID (provided by researcher) _____

Instructions: Please fill out the following survey. Participants may skip any questions they do not wish to respond to.

SURVEY

- 1) Are you: MALE FEMALE
- 2) Class Rank: FRESHMAN SOPHOMORE JUNIOR SENIOR OTHER
- 3) Are you involved in extra-curricular activities (extra-curricular activities include: Lindenwood University sponsored sports or clubs)? YES NO
- 4) If yes to question 3, please list the extra-curricular activities your involved in (extra-curricular activities include: Lindenwood University sponsored sports or clubs): _____

- 5) What is your cumulative GPA? _____
- 6) Do you work outside of Lindenwood University (this does not include work and learn)?
 YES NO
- 7) If you answered yes to question 6, how many hours do you usually tend to work a week (Monday-Friday)? _____

Survey (continued)

Directions: Please fill out the chart with your daily schedule. This consists of how much time you spend at work, extra-curricular activities, and studying. Please indicate throughout the table which one is which. For Example, if you are usually studying from 12 a.m. to 3 a.m. on a Monday indicate that on the chart by putting studying on 12:00 a.m. box and drawing an arrow down to 3:00 a.m.

	Monday	Tuesday	Wednesday	Thursday	Friday
12:00a.m.					
1:00 a.m.					
2:00 a.m.					
3:00 a.m.					
4:00 a.m.					
5:00 a.m.					
6:00 a.m.					
7:00 a.m.					
8:00 a.m.					
9:00 a.m.					
10:00a.m.					
11:00a.m.					
12:00p.m.					
1:00 p.m.					
2:00 p.m.					
3:00 p.m.					
4:00 p.m.					
5:00 p.m.					
6:00 p.m.					
7:00 p.m.					
8:00 p.m.					
9:00 p.m.					
10:00p.m.					
11:00p.m.					

Appendix E

Feedback Letter

Thank you for participating in our study. The survey was used to discover that people that spend more time involved in extra-curricular activities or work, outside of Lindenwood University, will devote less time to studying and have a lower cumulative GPA. This is beneficial because we believe that in completing our study our results could be found beneficial to students who may or may not view their time as being well managed as a student. By finding out the results students can then assess their own habits in regards to how or if GPA is affected by how much they are involved in life outside of the classroom.

Please note that we are not interested in your individual results; rather, we are only interested in the results of a large group of consumers, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. Our contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact us and we will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigators:

Paige Martin 636-866-9813

Jennifer Ellen Burdick 217-565-0077

Supervisor:

Dr. Michiko Nohara-LeClair (636)-949-4371 (mnohara-leclair@lindenwood.edu)

Perceived Racial Expectations of Children

Jessica R. Roesslein⁶

This is a proposed research study concerning the presence of prejudice among children, especially concerning ambiguous everyday situations. Racism can be a source of chronic stress, mental health issues, and physical health issues for those involved, and everyday acts of prejudice can be even more harmful than overt acts of racism. These acts can cause health problems as serious as cardiovascular disease. Therefore this study aims to identify racial preferences among children, in the form of everyday ambiguous situations by having them identify what is occurring in a picture involving ambiguous interactions between white and black children on a playground. These interactions include a child passing candy to another, children playing tag, and a child picking up books with another child on looking. The participant responses would be recorded and coded by a blind judge to reveal race preferences in children. Identifying racism early in life could help combat the cumulative stress effects that racism has on individual. By reducing this stress, you can in turn decrease the frequency of mental and physical health issues amongst adults. Identification of prejudice could perhaps lead to future research to provide solutions for racism among school children in the future. By bringing to light the prejudices that may still exist in schools today, students, parents, and educators may be made more aware of their actions and in turn may take steps to decrease prejudicial acts. Since the curriculum in schools is highly structured, implementing a program to reduce racism is a realistic goal for the future.

⁶Jessica R. Roesslein, Department of Psychology, Lindenwood University.
Correspondence concerning this project should be directed to Jessica R. Roesslein,
jrr626@lionmail.lindenwood.edu

This proposed study aims to explore when and in what context prejudice occurs in children. Although it is a well versed norm that outright discrimination is not acceptable, there is question about the influence of racism in ambiguous situations (Marino, Negy, Hammons, McKinney & Asberg, 2007). Therefore, the proposed study will be conducted in order to examine these ambiguous, everyday situations.

Discrimination is no doubt a common part of society. In one study of racial discrimination, 100% of African Americans reported some instance of racial discrimination in their lifetime. Of these African Americans, 99.4% reported stress as a result of discrimination (Kessler, 1999; Klonoff as cited in Negy, Hammons, McKinney & Asberg, 2007). Kessler, Mickelson, and Williams (1999) also found that experiences of perceived discrimination are significantly related to mental health issues in adulthood. Not only are overt racist acts harmful, but so are everyday encounters with racism, such as exclusion and rejection. These common interactions can occur so frequently that they become a source of chronic stress (Broudy, et al., 2006). The frequency of these discriminatory acts can change the way one interprets certain encounters, in such a way that intensifies future feelings of discrimination. The longer the discrimination occurs, the harder it becomes to cope with, and the more exhausted the use of coping strategies becomes. This exhaustion of coping resources can overall lead to an increase in stress related health problems such as cardiovascular disease (Broudy, et al., 2006). Therefore, catching discrimination early on is vital to helping relieve stress and improve mental and physical health among individuals in the school system and elsewhere.

Previous studies on racial prejudice in children have often yielded very different results. In a well known study by Clark and Clark, black children and white children both were found to show a greater preference for the white doll over the black doll (Clark & Clark, as cited in Hraba

& Grant, 1969). A second study done over two decades later by Hraba and Grant (1969) set out to retest Clark and Clark's, 1947, research and they found some contradicting results. In this study they tested children age 3 to 8 and found that the children, both white and black, preferred to play with the doll of their own race. They also found that the preference to play with the doll of their own race increased as their age increased (Hraba & Grant, 1969). In both of these studies, the social climate of race was very different from that of today. In fact, Hraba and Grant(1969), state that during the time of their study, a black pride campaign had been occurring for the past two years in the town in which they tested, which could have caused more positive identification with the African American race. Undeniably, racial prejudices still exist in society today, but the outright racial discrimination and segregation is no longer at the forefront.

In present day, racial issues tend to take a submissive role over other issues. In yet another, later version of the Clark and Clark (1947) study by Jordan and Hernandez-Reif (2009), racial prejudice was examined using computer based sketches instead of dolls and four skin tones were used in one part of the study, and only two were used in another. Jordan and Hernandez-Reif (2009) found that there were no skin tone preferences when children were presented with four different skin tones, but that when asked to choose only between a black or white drawing, white children preferred the white drawing while black children were divided in preference for the white or black drawing. These results suggest that prejudices still exist in children today, and the variation of the results of the three previous studies show that repeated research is needed to confirm findings of racism. Since the social climate is ever changing regarding race, and racism can cause stress and harm, continuing to study race in children is a worthy endeavor.

Often small ambiguous situations regarding racism can cause more profound physical and mental health consequences than that of overt acts of racism (Bennett, Merritt, Edwards, &

Sollers, 2004). Therefore the proposed study will be conducted in order to examine ambiguous acts of prejudice in children. In the proposed study, three ambiguous focus areas will be presented to the children in a drawing. These focus areas will contain one Caucasian child and one African American child interacting with one another. The participants will then be asked to describe what is happening in the focus areas. It will then be noted if the participants attribute positive or negative comments to those of their own race or to a race other than their own.

The results of Habra and Grant's study (1969) indicated that the children's preference for their own race increased with age. Since the children that will be tested in the proposed study have a higher median age (6-12 years) than those in their study (3-7 years), the children in the proposed study are likely to show the same trend of increased preference for their own race. In regard to the results of the Jordan and Hernandez-Reif (2009) study, they found that whites tended to prefer their own race, while black students were split in their decision. This may also be due to the lower median age of their participants (3-7 years). In the proposed study, children age 6-12 will be tested, increasing the likelihood that the participants will attribute more positive qualities to their own race. The later dates of these studies are more relevant to today's society than Clark and Clark's (1947) study of race and therefore more relevant to the study proposed.

In a study by Nesdale (1999), it is suggested that during the ages from 7 years on, racism and prejudices emerge and become concrete. Since the participants in this study fall close within this age range, the current proposal should yield results containing prejudices.

Based on the results of these studies, the proposed hypothesis is that children will show a greater preference for their own race by interpreting the focus areas of the study in a way that is more favorable to the member of their own race.

Method

Participants

Participants will be recruited through many schools throughout many school districts, with a wide range of ethnic diversity. Students age 6- 12 will be eligible to be recruited for this study and will be given permission forms to be signed by their parents. One hundred participants will be recruited. All students, participating or not, will receive a sticker as compensation from the researcher. Analysis of the sex of the participants will be presented as a frequency count. The race of the sample will be percentages, providing the reader with the composition of the sample.

Materials

The study will take place within the private school at which the participants will be recruited. The interviews will be conducted in an empty classroom area used for afterschool care. The interviews will be done at a small table with two chairs. This room will have adequate lighting. There will be two drawings used in this study (see Appendix A and B). The drawings have three focus areas; the children passing candy to one another, the children playing tag, and the child picking up books. Everything that the child says will be recorded with pen and paper by the researcher. Results will be coded by the researcher and a blind judge to ensure consistency of the coding. The responses that the children give will be coded as either positive or negative. There will be a short, three question survey to be filled out by the parent (see Appendix C). There will also be a permission form for parents to allow their child to participate (see Appendix D), a letter of explanation and consent from the Director or Principle of the school (see Appendix E), a feedback letter to the individual teachers of the classes that participated (see Appendix F), and a feedback letter to the parents of the children who participated (see Appendix G).

Procedure

A letter of explanation and consent will be sent to the director of the school. Once this has been read and signed, participants will begin to be recruited. The researcher will send out permission forms to the parents of all eligible students. Students with signed parent permission slips on file with the researcher will be called individually out of the classroom and randomly assigned to either drawing A or drawing B. The participant will be reassured that if at any time they do not wish to continue they may return to the classroom without prejudice. The child will then be seated at the table next to the researcher and the drawing will be placed in front of them. The child will then be prompted to tell the researcher what is happening in the picture.

As the participant describes the picture, everything he/she says will be recorded with pen and paper. If the child fails to describe any of the focus areas of the drawing they will be prompted, "And what are these children doing?" as the researcher points to the focus area the participant failed to describe. If he/she does not give a description they will not be prompted further. The student will be asked if they were previously informed about what the study was about and this information will be recorded. The student will then be debriefed and escorted back to he/she classroom by the researcher. At this time the researcher will call the next student down to be interviewed.

The procedure above will then be repeated until all participants that received permission are interviewed. After the completion of the interviews, all students in the classrooms will receive a sticker, whether they were able to participate or not. All participants in the study will have an envelope with a feedback letter sent home with them at the end of the day by their teacher; this will be addressed to their parents. A feedback letter will also be given to the individual classroom teachers who allowed their students to participate.

The mean and standard deviation of the participants' age will be provided, along with the range. The statistical analysis performed will be a 2(Child's race) X 2 (child in picture favored) factorial design.

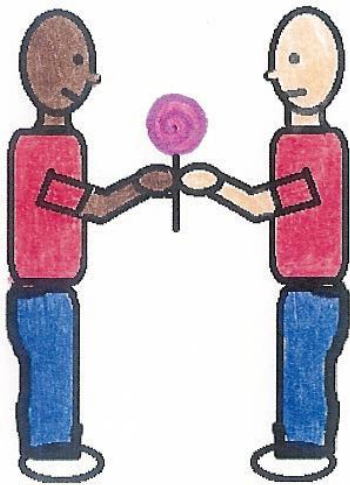
The implications for this proposed study are far reaching. If the results of this proposed study conclude that there are slight prejudices among actual childhood situations, not just against a single object, such as a doll, future research could then identify ways to decrease these prejudices and in turn, decrease the mental and physical health consequences of ongoing racism. This will also help bring attention to the prejudice that exists in early childhood and therefore open up discussion on how prejudice and discrimination can be helped in the school system, which in turn will reduce stress and anxiety over the victims of racism in schools. Since the school system is such a controlled curriculum, it would be easy to implement systems to help reduce racism in school. Participation in this proposed study could bring awareness to children, parents, and educators about their unknown prejudices. Making them aware of this could open up discussion in school and home, and could cause people to more clearly evaluate their thoughts on race.

References

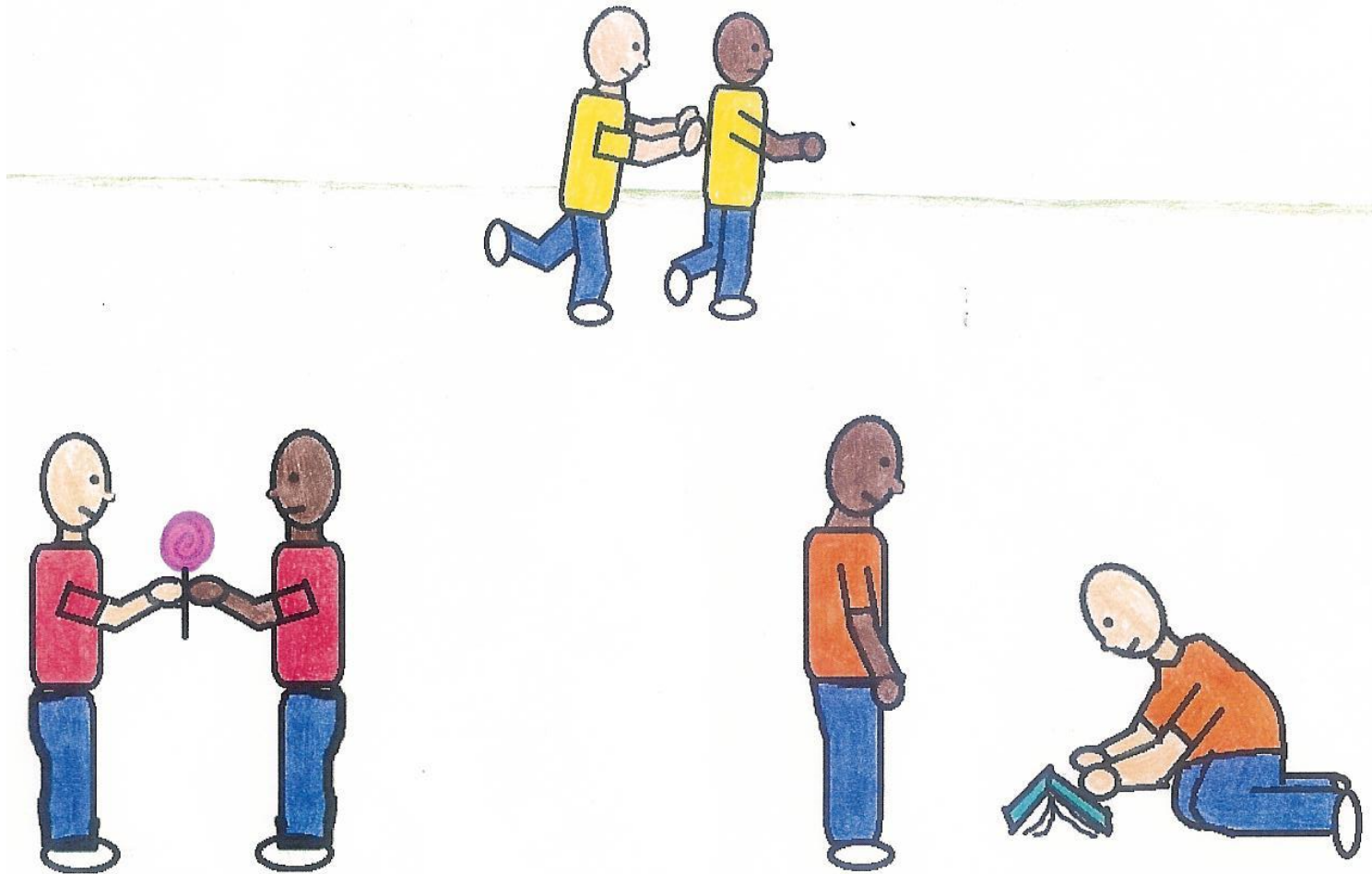
- Bennett, G. G., Merritt, M. M., Edwards, C. L., & Stollers, J. J. (2004). Perceived racism and affective responses to ambiguous interpersonal interactions among African American men. *American Behavioral Scientist, 47*, 7.
- Broudy, R., Rondolo, E., Coakley V., Brady, N., Cassells, A., Tobin, J. N., & Sweeney, M. (2006). Perceived ethnic discrimination in relation to daily moods and negative social interactions. *Journal of Behavioral Medicine, 30*, 1

- Clark, K. B., & Clark M. K.(1947). Racial identification and preference in Negro children. In T. Newcomb & E. Hartley (Eds.), *Readings in social psychology*. New York
- Jordan, P. E., & Hernandez-Reif, M. (2009). Re-examination of young children's racial attitudes and skin tone preferences. *Journal of Black Psychology*.
- Kessler, R. C., Mickelson, K. D., & Williams, D. R. (1999). The prevalence, distribution, and mental health correlates of perceived discrimination in the United States. *Journal of Health & Social Behavior*, 40, 208-230.
- Landrine, H., & Klonoff, E. A. (1996). The schedule of racist events: A measure of racial discrimination and a study of its negative physical and mental health consequences. *Journal of Black Psychology*, 22, 144-168.
- Marino T. L., Negy C., Hammons M. E., McKinney C., & Asberg K. (2007). Perceptions of ambiguously unpleasant interracial interactions: A structural equation modeling Approach. *The Journal of Psychology*, 141, 637-63.
- Nesdale, D. (1999). Social identity and ethnic prejudice in children. *Psychology and Society*.

Appendix A



Appendix B



Appendix C

Please complete this short survey regarding your child, participant number_____.

Thank you!

Survey

Sex _____

Age _____

Race _____

Appendix D

Invitation to Participate in a Study of Perceived Racial Expectations of Children

Description of the Study:

Your child is being invited to participate in a study about racial expectations they may have involving everyday situations. The goal of this study is to learn what slight preferences children might have with respect to different races in the context of everyday life. Please read this form and ask any questions you may have before you agree to your child being in the study.

If you decide to let your child take part in this study he/she will be asked to look at a scene with various children of different races at play with one another. In this picture there will be ambiguous situations such as a child passing candy to one another. Your child will be asked to tell the researcher what is happening in the picture and your child's responses will be recorded with paper and pencil. This will take about 15 minutes.

Risks and Benefits of Being in the Study:

Though there does not appear to be any risks or discomforts to your child the researcher will let the child know that he/she may withdraw for the study at anytime without any penalties.

Your child may benefit from the curiosity of the experiment process and the feeling of being involved. He/she will also receive a sticker for participation in the study.

Confidentiality:

I will protect your child's confidentiality by coding his/her information with a number so no one can trace the answers to his/her name. All the findings will be combined and no

identifying information will be used. All the information from the study will be kept confidential and shredded after 1 year.

Voluntary Nature of the Study:

Your decision to allow your child to take part in the study is voluntary. Your child is free to choose not to take part in the study or to stop taking part at any time without any penalty.

Contacts and Questions:

If you have questions or concerns you may contact the researcher or Faculty Supervisor at the contact information listed below.

Researcher:

Jessica Roesslein

(314)-712-1069

Jrr626@lionmail.lindenwood.edu

Supervisor:

Dr. Michiko Nohara-LeClair

(636)-949-4371

mnohara-leclair@lindenwood.edu

Statement of Consent:

I understand the procedures described above. My questions have been answered to my satisfaction, and I agree allow my child _____ to

participate in this study.

Print your child's name

Print Parent/Guardian Name

Signature of Parent or Guardian

Date

Appendix E

Name of Director/Principal

Name of School

Address of School

As we discussed, I will be doing my research through Lindenwood University under the supervision of Dr. Michiko Nohara-LeClair. The research cannot take place until it has been passed through an ethics board at Lindenwood University to ensure the well being of the children who participate. The children at Campbell Montessori are being asked to participate in a study about racial expectations they may have involving everyday situations. The goal of this study is to learn what slight preferences children might have to their own race or other races in the context of everyday life. The students will be pulled out of class and individually be asked to look at a scene with various children of different races at play with one another. In this picture there will be ambiguous situations such as a child passing candy to one another. The student will then be asked to tell me what is happening in the picture and the child's responses will be recorded with paper and pencil. This will take about 15 minutes. The students who chose to participate must turn in a signed parental consent form that I will supply. If at anytime they choose not to continue they can stop and return to class without prejudice. Although I do not anticipate any major risks to the students, if they appear uncomfortable at anytime during the study I will reassure them that they do not have to participate. All of the children will receive a sticker after the study, whether they participated in the study or not.

If you have questions or concerns you may contact the researcher or Faculty Supervisor at the contact information listed below. Thank you so much for your time!

Researcher:

Jessica Roesslein

(314)-712-1069

Jrr626@lionmail.lindenwood.edu

Supervisor:

Dr. Michiko Nohara-LeClair

(636)-949-4371

mnohara-leclair@lindenwood.edu**Statement of Consent:**

I understand the procedures described above. My questions have been answered to my satisfaction, and I agree allow this study to take place at my facility, Campbell Montessori School.

Signature and Date

Appendix F

Dear _____ :

Thank you for allowing me to take time out of your schedule to invite willing students with parent permission to take part in my study. Your students are being asked to participate in a study about racial expectations they may have involving everyday situations. The goal of this study is to learn what slight preferences children might have to their own race or other races in the context of everyday life.

Your students will be pulled out of class individually for about 15 minutes each and be asked to look at a scene with various children of different races at play with one another. In this picture there will be ambiguous situations such as a child passing candy to one another. Your students will be asked to tell me what is happening in the picture and his/her responses will be recorded with paper and pencil.

If you are interested in the aggregate of this study it will be made available for you to look at after the completion of the study upon your request. If you have any questions or concerns please contact me at the information listed below.

Thank you!

Jessica Roesslein

(314)-712-1069

Jrr626@lionmail.lindenwood.edu

Special Feature

Senior Research Project Papers

*The following papers were written by the students who completed
PSY420: Senior Research Project in the Spring of 2010*

What Fits the Crime: Does Factors Influence in a Person's Judgment?

Amanda Vance⁷

The purpose and rationale for this experiment is to distinguish if factors such as race, prior offences, type of crime, level of seriousness of the crimes plays a role in a person's judgment based on the type and severity of punishment. For this study participants were to state the type of punishment that the criminal were to be given for committing a certain crime. There were two independent variables used for the study, the independent variables were the race of the criminal was changed and if the criminal had prior offenses or were a first time offender. The hypothesis was partially supported based on the responses the participant reported. The only independent variable that tended to show some statistical significance was if the criminal had prior offenses or was a first time offender.

In American society race, ethnicity, and crime all bind together. When talking about these issues in the criminal justice system that include about policing, sentencing, the death penalty, or employment all are effected with the concepts of race and ethnicity. Even the perception of crime and justice are connected in some ways with the issues of race and ethnicity (Walker, Spohn, & Delone, 2007). These concepts are everywhere in this field so if these are common aspects a person may encounter does these effect there judgment in how they may treat the perpetrator.

⁷ Amanda Vance, Psychology Department, Lindenwood University. Correspondence concerning this project should be directed to Amanda Vance, av419@lionmail.lindenwood.edu.

Statistics have confirmed that racial minorities are more likely than Caucasians to be serving time in jail or prison. It was found that in 2004 about 12.6% of African American males, 3.6 % of Hispanic males, and 1.7 % of Caucasian males there were all in their later 20s were either in jail or prison. The racial disparity in incarceration rates could also be explained based on the racial difference in offending patterns and the difference in prior criminal records. According to the National Academy of Science Panel, racial discrimination in the sentencing process could have been due to the jurisdiction the crime was committed and also for the certain type of crime it may have been (Walker et al., 2007).

There are two main reasons that Walker et al., (2007) discussed that can contribute to the racial disparity in the sentencing process. The first reason is based on the national statistics, on prison admissions and prison population. For example in 2004 4,919 of every 100,000 African American men, 1,717 of every 100,000 Hispanic men, and 717 of every 100,000 Caucasian men were incarcerated in either a state or federal prison. The second factor was based on studies conducted about judges' sentencing decisions. The studies revealed that African Americans and Hispanics were more than likely than Caucasians to be sentenced to prison. Furthermore, those who were sentenced to prison ended up receiving a longer term than the Caucasians there were sentenced to prison (Walker et al, 2007). One studied that Walker et al, (2007) discussed and researched that in 2002 about 58% of African Americans convicted of violent crimes were sentenced to prison were compared to only 47% of Caucasians convicted violent crimes were sent to prison.

Walker et al, (2007) came up with four explanations as to why there might be racial disparities in sentencing of convicted criminals. The first reason is because African Americans and Hispanics commit more serious crimes and have more serious offenses on their records than Caucasians. The second reason is because of economic discrimination which means for example, that poor defendants are less likely than middle and upper class defendants to have a private attorney or even get released before their trial. The third reason could be based on direct racial discrimination on the judge's part. That is, the judges might take in the race of the criminal when deciding the type of sentence to give the criminal. The fourth reason could reflect the equal treatment and discrimination based on certain factors. These factors were based on the nature of the crime, the racial composite based on the offender and victim relationship, the jurisdiction the crime was committed at, and the age and gender of the criminal (Walker et al, 2007). These explanations suggested by Walker et al, could play a major role in how the sentencing process is brought about but the leading judgment is based on the jury or judge to decide if the perpetrator is guilty or innocent. But once found convicted of the crime the judge's directions is the deciding factor on the type of punishment the criminal will receive. Therefore if someone's fate is up to only one person that happens to be right behind the podium. There is a great possibility that the outcome of the punishment might be based on their opinion. This could be based about what they may think of criminal for many reasons which could consists of the opposite race or ethnicity, the type of crime and how serious the crime committed was and if the criminal was a first time offender or if the criminal were a repeated offender. These types of conditions that a judge would take in are very essential to an individual that is to decide based on their own judgment what the

criminal should receive. They are taught to be fair when deciding this outcome but what if our own judgment can kick in unconsciously and so we do not know that our decision is not just equal at all.

There was a study about rumor that was first administered by the researchers Allport and Postman in 1945 and 1947 which was cited in the research by Treadway and McCloskey (1989). This study was conducted to find out how rumors are first started and spread, and they wanted to learn how the information in the rumor can change from person to person. They would show participants a photo where the white man was holding the weapon and confronting the taller black man. Next they told the participant to tell someone about the photo they saw. After some time, the researchers found that by a certain number of people that were told about the photo the weapon changed from the white man holding the weapon to the black man holding the weapon (Boon & Davies, 1987). Allport and Postman as cited in Treadway and McCloskey (1989) found that after the description of the picture was told to a certain number of people the position of the weapon and the actual situation that was happening in the picture had changed. In the original photograph the white man was whom that was confronting the black man. For most of the participants they stated that the black man was the one confronting the white man. Treadway and McCloskey were both very interested in this study by Allport and Postman. Treadway and McCloskey (1989) administered the same study that Allport and Postman in 1945 but with some changes to the original photo. Treadway and McCloskey (1989) showed the participants the same photo that was used in Allport and Postman's study but the weapon was enlarged. Treadway and McCloskey (1989) had two groups of participants, one group was shown the photo for five seconds and the other

group was shown the photo for thirty seconds. When the participants that saw the photograph for five seconds, the participant did not state any shift in the weapon. Most of the participants that were in this group did not even report that there was a weapon in the photograph. But when the participants were shown the picture for thirty seconds there was no shift of the weapon and they all described the scene correctly (Treadway, & McCloskey, 1989).

The present experiment was conducted in order to determine whether people's judgment is influenced by certain concepts for sentencing a person for a crime. Do the factors of race, prior offences, the type of crime and the level of seriousness of the crime play a role in the person's judgment on what kind of punishment he/she would give to the person that committed a crime? Which, if any of these factors play a bigger role in a person's decision? The purpose for this experiment is to find out which factors may influence a person's judgment in the type and the severity of punishment they may decide on. These factors include race, prior offences, type of crime, and level of seriousness of the crimes.

The rationale for the experiment is to find out if the participant's judgment is affected the race or ethnicity of the criminal. Will this influence the type of punishment they may decide on for that person? Like if the participant was to be given background information about the criminal that may have committed a crime. For example, if the criminal has been a repeat offender, which they have committed multiple offenses in their life. Another example is, if the criminal was a first time offender, which this is their first offence. With this information given to the participant will it contribute in the participant's judgment on what type and how serious the punishment would be? Do the

type of crime and the level of seriousness of the crime that is presented to the participant interfere with their judgment? The experimenter hypothesized that the participant based their decision on how severely they punish the perpetrator that committed the crime depending on if the criminal had prior offenses, the race of the perpetrator, and the type and the level of seriousness of the crime committed. It is predicted that the offender with prior offences and of the darker skin will receive the harshest punishment out of the all the other offenders.

Method

Participants

Participants that were included in the experiment were undergraduate students from Lindenwood University. All undergraduate students were either recruited from the Lindenwood Participant Pool or from Professor Marhanka's criminology class.

Participants that were not from Lindenwood University were adults at least 18 years of age or older from the greater St. Charles community. In the experiment, there were a total of 114 participants included. The experiment was conducted on the Lindenwood University campus in the psychology labs in the basement of Young Hall, a classroom on campus. If the participant was not on campus the experiment was conducted in a separate room that was off campus where the lighting was good and the noise level was at a minimum. The participants either took the experiment alone or with a group.

The study had 114 participants which none were excluded in the results. There were a told of 38 men and 76 women that participated. The age range for the participants' population was between 18 to 29 years old. The mode for the age was 19 to 20 and which made up about 57.9% o the participants. The highest level of education for

the participants was at least 1 year of undergraduate studies, with a mean of 1.76 years, and the standard deviation of 1.016 years.

There were two ways the participants were recruited for the experiment. The experimenter placed a description sheet and a sign-up sheet on the Lindenwood Participant Pool (LPP) board to recruit participants from the Lindenwood Participant Pool (see Appendix A). Then the experimenter asked other professors if they could have either one or more of their classes participate in the experiment. The professor was present while the experiment was being administered but all the students were given the option to decline on taking the experiment at anytime. There was only one classroom used to administer the experiment. The class that was used was Professor Marhanka's lower level criminology class that way it was not just students that were majoring in criminal justice. They did not receive any type of compensation for participating in the experiment it was strictly only volunteers.

Materials and Procedure

The experiment was administered the same in all condition that the participants were recruited by. Except for in the classroom, the experimenter came during the class and administered the packet with the inform consent forms, instructions, questionnaire, the criminal sheet that was used to place that type of punishment they decided that criminal would receive also the sheet it described if the perpetrator had prior offences or was a first time offender along with their criminal was either Caucasian or African American, and feedback letter to the class (see Appendix B for the classroom script)

During the experiment the participants were given two informed consent forms to read over. The informed consent form was also briefly read to all the participants (see

Appendix C). The participants were told they can terminate the experiment at anytime while the experiment is being administered. The participants were asked to sign both the informed consent forms and were given one of the informed consent forms to keep. Participants were then given an instruction sheet to read over, along with the experimenter also explaining what they were going to do.

There were two sets of instructions depending on which group the participant was placed. In the instructions only stating that the criminal did have prior offences or if this was their first time offence. Once the participants finished reading over the instructions, they were told they could ask questions about the experiment any time if they did not understand something about the experiment (see Appendix D and E).

Next, the participants were asked to fill out the short questionnaire (see Appendix F). Some of the questions that were presented on the questionnaire were about sex, age, highest level of education, major and race. Other questions that were asked were about how much media the participant is associated with that is primarily about crime. Also the participant was asked about how much information about the criminal justice system they may know about, that pertained to the type of punishments that are given.

Then, the participants were given one of the criminal sheets and depending on which group they were placed in the criminal sheet described if the perpetrator had prior offences or if they were a first time offender and the criminal picture was printed on this sheet. The criminal was either Caucasian or African American that was created by the experimenter using a computer program called FACES (FACES 4.0 EDU for Education). The faces used for the sheet that was given to the participant only differed in their type of hair and the color of skin. The participants were placed randomly in one of the four

groups since there were four different criminal sheets. One group was given a photo of a light skin criminal with no prior offences (see Appendix G). The next group had a dark skinned criminal with no prior offences (see Appendix H). The third group had a photo of a light skinned criminal that had prior offences that they were convicted and served time for when they were younger (see Appendix I). The last group had a dark skinned criminal that had the same prior offences and information as the light skinned criminal that had prior offences (see Appendix J).

The participants were asked to state what type of punishment the criminal should receive for committing that type of crime. The types of crimes that the criminal committed were burglary, an assault, rape and murder. Once the experiment was completed the participants were given a feedback letter with the experimenter's number and email to contact if they have any follow-up questions or if they want to know the results of the experiment when it is completed (see Appendix K). Only participants that were recruited through the LPP received extra credit for participating in the experiment. The questionnaires had a participant number that matched with the same participant number on the criminal sheet that the participant used to determine that type of punishment the criminal should receive. However, these numbers were not traceable to any particular participant, thereby protecting the identity of the respondents.

The participants were tested in the basement of Young hall in lab 105 B. These rooms were equipped with two tables/desks with about 6 chairs. The room had good lighting and was very quiet so the participant was not distracted or could not see the papers. These rooms were used for the participants that were recruited from the LPP.

Participants that were not from the LPP were tested either in a well lit and quiet classroom or in the nearest room that had the same type of atmosphere.

Results

To test the hypothesis that that prior offenses and the race of the criminal could influence that participants judgment on deciding the type of punishment they should receive. A 2 (PRIOR) X 2 (RACE) Analysis Variance (ANOVA) was conducted on the severity of punishment for each classification for each crime.

The participants' responses were all coded into four different responses which consisted of Incarceration, Fine, Supervision, and Life or Death. For each of these categories there were sub-categories which were the ranking order of punishment based on how severe the punishment was. This can be found on Appendix M below.

The results were based on that there were four groups included in the experiment. The color of skin and background information that the participant received were the changing variables but all received the same information on the type of crime that perpetrator may have committed and was found guilty for committing these crimes.

For each crime they were all analyzed individually to see the level of seriousness and the type of crime had an influence on the participants decision making. For crime one which were about a robbery, first the priors were analyzed for the type incarceration the computed f-value was $F(1,88)=8.977$, $p<.05$, the computed f-value for the type of fine was $F(1,25)=1.061$, $p>.05$, for the type of supervision the computed f-value was $F(1,42)=1.044$, $p>.05$. For crime one next the race of the criminal was just analyzed for the type incarceration the computed f-value was $F(1,88)=.856$, $p>.05$, the computed f-value for the type of fine was $F(1,25)=.118$, $p>.05$, for the type of supervision the

computed f-value was $F(1,42)=2.273$, $p>.05$. Then for crime one next the race and priors of the criminal was just analyzed for the type incarceration the computed f-value was $F(1,88)=.942$, $p>.05$, the computed f-value for the type of fine was $F(1,25)=.118$, $p>.05$, for the type of supervision the computed f-value was $F(1,42)=.042$, $p>.05$.

For crime two which were about an assault, first the priors were analyzed for the type incarceration the computed f-value was $F(1,104)=5.361$, $p<.05$, for the type of supervision the computed f-value was $F(1,28)=.137$, $p>.05$. For crime two next the race of the criminal was just analyzed for the type incarceration the computed f-value was $F(1,104)=.183$, $p>.05$, for the type of supervision the computed f-value was $F(1,28)=.003$, $p>.05$. Then for crime two next the race and priors of the criminal was just analyzed for the type incarceration the computed f-value was $F(1,104)=.556$, $p>.05$, for the type of supervision the computed f-value was $F(1,28)=.1475$, $p>.05$.

For crime three which were about a rape, first the priors were analyzed for the type incarceration the computed f-value was $F(1,109)=1.181$, $p>.05$. For crime three next the race of the criminal was just analyzed for the type incarceration the computed f-value was $F(1,109)=2.597$, $p>.05$. Then for crime three next the race and priors of the criminal was just analyzed for the type incarceration the computed f-value was $F(1,109)=.010$, $p>.05$.

For crime four which were about a murder, first the priors were analyzed for the type of picking life or death, the computed f-value was $F(1,106)=1.056$, $p>.05$. For crime four next the race of the criminal was just analyzed for the picking of life or death the computed f-value was $F(1,106)=.182$, $p>.05$. Then for crime four next the race and priors

of the criminal was just analyzed for the picking of life or death computed f-value was $F(1,106)=.084, p>.05$.

The results showed that the hypothesis stated above was partially supported because the only variable that had significances was if the criminal had prior offenses or if the criminal was a first time offender. This was only true for the first and second crime when picking the type of incarceration for the criminal. But the race of the criminal seemed do no effect on the judgment for determining the type of punishment. When the two variables, race and priors, were analyzed together there were not significances in their computed f-values for all the different crimes and for the categories of each crime. So it concludes that the null hypothesis was not rejected since there were not full significances but on the offenses and race category combined.

Discussion

From analyzing the results it was concluded that with having a perpetrator of a different race but with the same background information such as a Caucasian and African American that were a first time offender would receive different punishment for the same type of crime. These implications, as stated above, it also true for the other group that received either a Caucasian or African American perpetrator that had prior offences. But the only variable that seemed to influence the participants' judgment was if the offender was a repeated offender of a first time offender. Even though the background information and crimes are the same it did show that the color of skin can play a role in a person's perception and judgment on what type of consequence the perpetrator should receive. But it did not show in the results that there was significance for this though.

There was some other interesting information about the means for each crime. For crime one about robbery the main type of incarceration answered was to be in prison for about one to three years. But when looking at the means between the races and the prior it was found that the African American criminal with prior offenses was found to be incarcerated to go to jail at least a year or less. This was also true based on looking at the mean score for both races with prior offenses. The type of fines that were given the most for this crime was to pay at least \$1000 or more to the family. The type of supervision that most people stated they would give the criminals was some form of community service.

For crime two which was about an assault the majority of participants stated that the criminal should receive at least one to three years in prison. When looking at the meaning between the type of race and if there was no priors and having priors participants stated that the African American criminal with no priors have more responses on that he should be imprisoned for at least four to six years in prison. For the type of supervision that was suggest more often was also some form of community service. But when looking at the means between each race and the priors it was found that African American criminals with no prior offenses and Caucasian criminals with prior offenses were to be places on parole. One other interesting suggestion that many of the participants' stated, was that the criminal should go to some form of anger management program.

For crime three which was about a rape most of the participants treated this as a very harsh crime. There were many responses of putting the criminal, no matter about the race or priors, in prison for life or even giving them the death sentence. The most

widely reported sentence for this crime was to be imprisoned for at least 7 to 10 years. It was found that African American criminals with and without prior offenses had the greatest mean for this type of sentence. One other finding about this crime was that the participants' reported that they should pay for the victim's therapy. Most of the participants stated that the victim was always a female that the criminal committed a rape offense towards.

For crime four which was the murder offense the most widely reported sentence for this criminal was to be put in prison for life. When looking at the means between race and priors it was found that Caucasians had a greater response for being sentenced to life on prison. As for the African Americans they had more responses for being sentenced to the death penalty. One other supposition that was reported by many of the participants were that this criminal should get some form of psychological help.

Some other findings from this study were that some of the participants reported the race of the criminal incorrectly. They would say the Caucasian criminal could have been Hispanic, mixed-interracial, or African American at times. Some reported that the African American criminal was could have also been Hispanic or mixed-interracial. Some of the participants stated that if more information about the crimes were reported they might have given the criminal a different type of punishment. This is because they would know more about the crime instead of the minimize information that was provided.

This type of study it can help with understanding why the incarceration rates are so high for another group and low for others. The results of this study could help explain the actions of punishment towards others that could be subconscious to the participant. This study could increase a self-awareness regarding the prejudicial attitudes and

stereotyping behavior that happens with giving a criminal their prison sentence. Also the participant may become aware that from their experiences of how much they do see crime they could be basing their judgments from this information they see and hear.

Some benefits that this experiment can give to society are it can create awareness on that a judge's own judgment can be based on their opinion. With the judge's opinion playing a role in the sentence decision, it can play could explain why some criminals may get a lesser sentence. Even though the participants in this study are not judges they are just like the typical jury member that would sit in court and determine if the criminal is guilty or innocent. Therefore the jury members are the ones that are using their judgment on if the criminal is guilty or innocent for committing the crime. Also this study shows how other factors can play a role of what type of punishment and how harsh the punishment the criminal may get sentenced with. It is beneficial knowing this type of information because it can give one reason to why some races are in prison more often than the others. Another beneficial finding that this study can help with is determining if the media has an influence on the participants' judgment when distinguishing the type of crime the criminal should receive.

Some limitations for the study were that there was a small sample size. Even though there were well over 100 participants that were in the study it does not cover all ages, ethnicity, and races of people. So if there were more participants the results could have been different. Since they were all tested in a group setting this could have created reverse racism. This is where the participant did not truthfully answer the question, because of the fear that the other person next to them could have seen their answer. Therefore, they could have changed their answer to more of a culturally moral answer.

Given that there was a wide range of responses and the responses had to be condensed down into categories could have changed the results. Since the experimenter was the one decoding the answers it may have been decoded wrong where the participant meant one thing but actually was recorded wrong. Another limitation that happened during the study was that the participants did not see the criminal's race as the race that was trying to be presented to the participant. Also some of the participant did not understand the instructions, so they did not know what they were to report.

Some future directions for the study is looking at the results based on using the response the participants gave on the race they thought the criminal was. This could change the results of using what the experimenter was trying to show with the pictures. See if genders have different responses on the type of punishment they would give someone. Since some of the participants stated that if more information was provided then they would give them a different punishment. Test to see if there is a difference in the responses based on the information about the crime is provided to the participant. Instead of using an open-ended response use more of a close-ended response where the participant picks out of the different categories what they would get the criminal. Next time using photos state the race of the criminal instead of not telling the participant the race of the criminal and thinking they would see the same race. Use different photos that are more similar to the type of race the experimenter was trying to get across towards the participant. If the use of different prior offenses, such as more serious offenses, would influence the participant to choose a different type of punishment. Would there be significance in letting the participant determining if the criminal was guilty or innocent for that crime. This would be just like if they were sitting in as a jury member for a court

hearing. Finally would there be a difference in the victim and offender relationship on determining the punishment.

References

- Ask, K. & Granhag, P. A. (2005). Motivational sources of confirmation bias in criminal investigations: The need for cognitive closure. *Journal of Investigative Psychology and Offender Profiling*, 2, 43-63.
- Boon & Davies. (1987). Eyewitness memory plus schemas plus source memory. <http://people.vanderbilt.edu/jonathan.r.folstein/psy326/recon-c.htm>.
- Hurwitz, J. & Peffley, M. (1997). Public perceptions of race and crime: The role of racial stereotypes. *American Journal of Political Sciences*, 41, 375-401.
- James, L. M., Scott, J., Pratt, D., Leding, J. K. & Arnal, J. D. (2007). 'Good, you identified the suspect... but please ignore this feedback': Can warning eliminate the effects of post-identification feedback. *Applied Cognitive Psychology*, 21, 1037-1056.
- Nijhok, K. S., de Kemp, R. A. T., Engels, R. C. M. E. & Wientjes, J. A. M. (2008). Short-term criminal pathways: Type and seriousness of offense and recidivism. *The Journal of Genetic Psychology*, 169, 345-359.
- Treadway, M. & McCloskey, M. (1989). Effects of racial stereotypes on eyewitness performance: Implications of the real and the rumoured Allport and Postman studies. *Applied Cognitive Psychology*, 3, 53-63.
- Walker, S., Sphon, C. & DeLone. (2007). *The color of justice: Race, ethnicity, and crime in america* (4th ed.). Belmont, CA: Thomson Higher Education.

Appendix A

Participant Recruitment Description for LPP Board

For this experiment you will be given a short questionnaire to complete. Next you will be reading about one criminal that has committed certain crimes. You will be addressing the type of punishment the criminal should receive for committing that kind of crime. This experiment should take about 15 minutes to complete.

Appendix B

Classroom recruitment script

My name is Amanda Vance and I am conducting an experiment for my senior research project for psychology. I am here today to ask for you to participate in my experiment. This should take no more than 15 minutes to complete. It is your choice to participate or not. If you choose to not participate it will not affect your grade in the class and extra credit will not be given if you do participate. For this experiment you will be given a short questionnaire to complete. Next you will be reading about one criminal that has committed certain crimes. You will be addressing the type of punishment the criminal should receive for committing that kind of crime. I will be given you a packet that contains two informed consent forms, instructions, feedback letter, questionnaire, information about the criminal. Once you get the packet please read over the informed consent forms and sign both. Please keep the informed consent form that is signed by the experimenter and hand back the other one signed. Next fill out the questionnaire and once you finished you may go on to reading the criminal. Once you have read about the background of the criminal there will be four different types of crimes they committed you will decide what type of punishment they will receive such as one year in jail or a year or more they will be sent to prison, receive a fine or put on parole etc. Once you have finished please tear off the informed consent form, feedback letter and those are yours to keep and bring up the rest of the packet to me. Thanks very much for participating in my experiment I greatly appreciate it. If you have any questions you may ask at any time during the experiment. If you would like to know the results for the experiment when the experiment is finished my contact information is on the informed consent form and feedback letter.

Appendix C

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short questionnaire asking about how much exposure I have to stories about crime and what I may know about the criminal justice system. Following this questionnaire, I understand that I will be reading one fictional criminal that may have committed four different types of crimes and based on my own judgment I will decide what type of punishment this criminal should receive. I understand that this experiment contains crimes that deal with burglary, assault, rape, and murder. I understand that I will not experience a level of discomfort beyond what is normally encountered in everyday life or when watching the news coverage about similar crimes. I understand that I should be able to complete this project within 15 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I understand that my ethnic background may be used in the results of the experiment. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the LPP office, a completed parental consent form that allows me to give consent as a minor.

 (Signature of participant) Date: _____

 (Signature of researcher obtaining consent) Date: _____

Student Researcher's Names and contact information:

Amanda Vance: (314) 520-7687 av419@lionmail.lindenwood.edu

Supervisor's name and contact information:

M. Nohara-LeClair (636) 949-4371 mnohara-leclair@lindenwood.edu

Appendix D

Instructions for Group A

Instructions

You will first be asked to fill out a short survey. You may choose not to answer some questions. You will be given one information sheet that has a fictional criminal on the sheet that is waiting to receive that type of punishment that they will be given for committing that type of crime. You are the person that is deciding what type of punishment this criminal should receive. He was already tried and was found guilty for the crime. The sheet contains the photo of the criminal and this person does not have any other prior offences, therefore this is their first time offence.

There are four different crimes on the criminal sheet read the first crime and then write down what type of offence this person should receive. Next go to the second crime but disregard the information about the first crime and state what you would give this person if they committed this type of crime as their first offence. You will do the same for the next two crimes also.

If you feel like not finishing this experiment you are allowed to stop at any time. Also you are allowed to ask questions throughout the experiment while it is being administered if you do not understand something.

Some examples you can write down for punishment and be a year in jail, or more than a year in prison, so many years in prison and then parole, a fine of so much, community service or ever harsher punishment etc.

Appendix E

Instructions for Group B

Instructions

You will first be asked to fill out a short survey. You may choose not to answer some questions. You will be given one information sheet that has a fictional criminal on the sheet. They are waiting to receive the type of punishment that they will be given for committing that type of crime. You are the person that is deciding what type of punishment this criminal should receive. He was already tried and were found guilty for the crime. The sheet contains the photo of the criminal and this person does have other prior offences that they committed years before. This information is stated under the criminal's picture.

There are four different crimes on the criminal sheet read the first crime and then write down what type of offence this person should receive. Next go to the second crime but disregard the information about the first crime and state what you would give this person if they committed this type of crime instead of the first crime. You will do the same for the next two crimes also.

If you feel like not finishing this experiment you are allowed to stop at any time. Also you are allowed to ask questions throughout the experiment while it is being administered if you do not understand something.

Some examples you can write down for punishment and be a year in jail, or more than a year in prison, so many years in prison and then parole, a fine of so much, community service or ever harsher punishment etc.

Appendix F

QUESTIONNAIRE

1. Are you MALE FEMALE?
2. What is your age? _____ Years old
3. What ethnic background are you?
Asian or Pacific Islander Black, Non-Hispanic Hispanic
American Indian or Native Alaskan White, Non-Hispanic
Non-resident Alien or Other
4. Highest level of educational background completed?
High school Or _____ years of college undergraduate and beyond
5. What is your major if you went to college?

6. Do you watch the news often to find out what crimes are committed?
 YES NO
7. Do you read the newspaper/internet journals to see what crimes have been committed?
 YES NO
8. Are you more interested in watching a certain show that is based on a certain subject that deals with crime? (such as serial killers, lifetime shows cops, CIS, Criminal minds etc.)
 YES NO

if so please write below all programs you watch to that deals with a specific crime(s).

9. Do you know much about the criminal justice system?
 YES NO
10. Do you know any information about what type of punishments a perpetrator would receive for committing a certain crime?

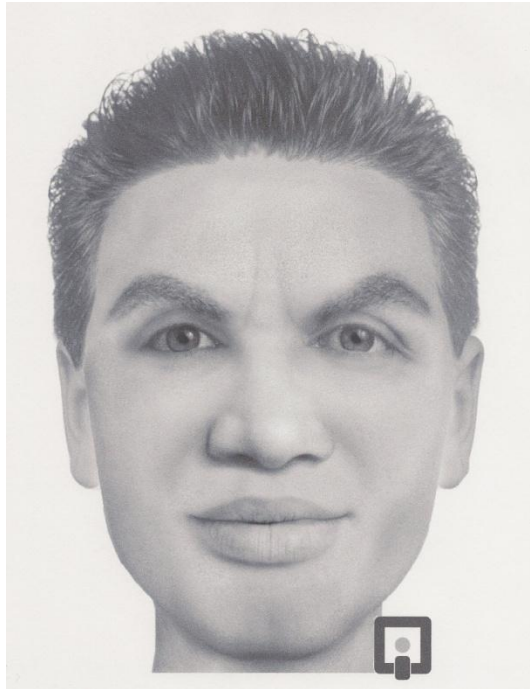
YES

NO

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

Appendix G

Group A1



This man pictured above has never committed a crime, therefore this is his first time offence. Treat each crime below as if he were to commit that offense only for the first time.

1. The person pictured was found guilty on the account of committing a burglary; they stole the family's computer, 52' T.V., all their valuable jewelry and anything that was electronic. Based on the information above and that this is their first time offence what type of punishment should they receive?

2. The person pictured was found guilty on the account of committing an assault, the criminal was at the bar one night and a fight broke out between the criminal and victim. The criminal ended up stabbing the victim which wounded the victim, therefore the victim pressed charges against the criminal. Based on the information above and that this is their first time offence what type of punishment should they receive?

3. The person pictured was found guilty on the account of committing a rape; the victim did not know the criminal in anyway. The criminal happened to be stalking the victim and so one night the criminal broke into the victim's house and raped the victim. Based on the information above and that this is their first time offence what type of punishment should they receive?

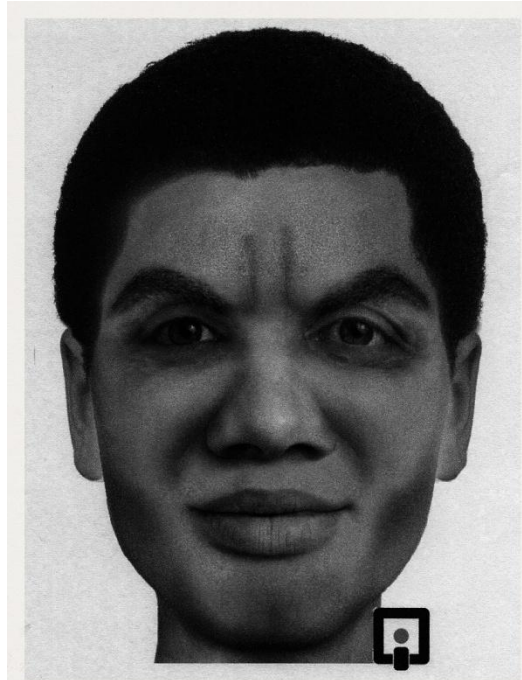
4. The person pictured was found guilty on the account of committing a murder; the victim was found stabbed multiple times by the perpetrator in the victim's home. There was no motive to why the perpetrator committed this murder. Based on the information above and that this is their first time offence what type of punishment should they receive?

Can you please report the race of the criminal that is picture above?

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

Appendix H

Group B1



This man pictured above has never committed a crime, therefore this is his first time offence. Treat each crime below as if he were to commit that offense only for the first time.

1. The person pictured was found guilty on the account of committing a burglary; they stole the family's computer, 52' T.V., all their valuable jewelry and anything that was electronic. Based on the information above and that this is their first time offence what type of punishment should they receive?

2. The person pictured was found guilty on the account of committing an assault, the criminal was at the bar one night and a fight broke out between the criminal and victim. The criminal ended up stabbing the victim which wounded the victim, therefore the victim pressed charges against the criminal. Based on the information above and that this is their first time offence what type of punishment should they receive?

3. The person pictured was found guilty on the account of committing a rape; the victim did not know the criminal in anyway. The criminal happened to be stalking the victim and so one night the criminal broke into the victim's house and raped the victim. Based on the information above and that this is their first time offence what type of punishment should they receive?

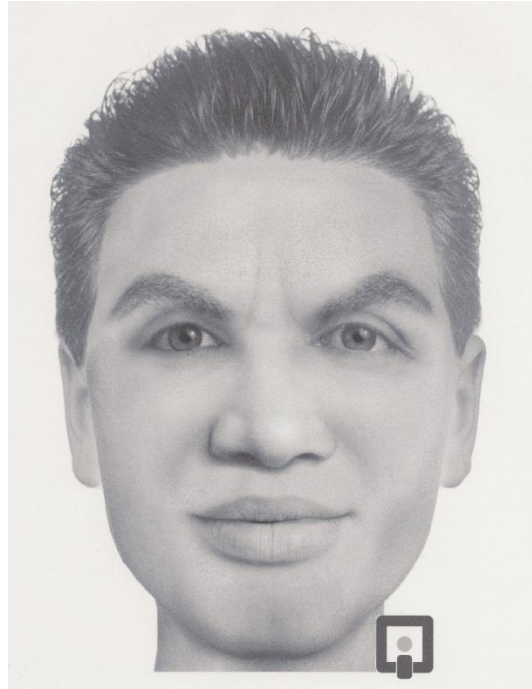
4. The person pictured was found guilty on the account of committing a murder; the victim was found stabbed multiple times by the perpetrator in the victim's home. There was no motive to why the perpetrator committed this murder. Based on the information above and that this is their first time offence what type of punishment should they receive?

Can you please report the race of the criminal that is picture above?

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

Appendix I

Group A2



The person picture here has committed past crimes in their childhood and teenage years.

The type of crimes they committed and served time for was 4 counts of robbery, 2 counts of assault, and just served for committing identify theft.

1. The person pictured was found guilty on the account of committing a burglary; they stole the family's computer, 52' T.V., all their valuable jewelry and anything that was electronic. Based on the information above and their past criminal record what type of punishment should they receive?

2. The person pictured was found guilty on the account of committing an assault, the criminal was at the bar one night and a fight broke out between the criminal and victim. The criminal ended up stabbing the victim which wounded the victim, therefore the victim pressed charges against the criminal. Based on the information above and their past criminal record what type of punishment should they receive?

3. The person pictured was found guilty on the account of committing a rape; the victim did not know the criminal in anyway. The criminal happened to be stalking the victim and so one night the criminal broke into the victim's house and raped the victim. Based on the information above and their past criminal record what type of punishment should they receive?

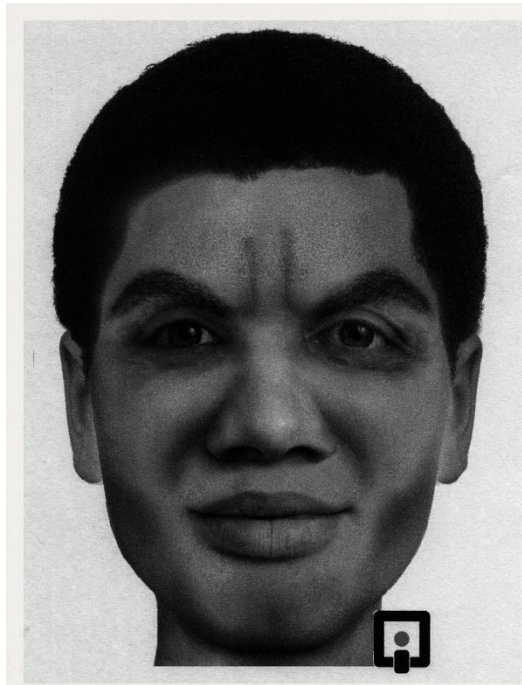
4. The person pictured was found guilty on the account of committing a murder; the victim was found stabbed multiple times by the perpetrator in the victim's home. There was no motive to why the perpetrator committed this murder. Based on the information above and their past criminal record what type of punishment should they receive?

Can you please report the race of the criminal that is picture above?

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

Appendix J

Group B2



The person picture here has committed past crimes in their childhood and teenage years.

The type of crimes they committed and served time for was 4 counts of robbery, 2 counts of assault, and just served for committing identify theft.

1. The person pictured was found guilty on the account of committing a burglary; they stole the family's computer, 52' T.V., all their valuable jewelry and anything that was electronic. Based on the information above and their past criminal record what type of punishment should they receive?

2. The person pictured was found guilty on the account of committing an assault, the criminal was at the bar one night and a fight broke out between the criminal and victim. The criminal ended up stabbing the victim which wounded the victim, therefore the victim pressed charges against the criminal. Based on the information above and their past criminal record what type of punishment should they receive?

3. The person pictured was found guilty on the account of committing a rape; the victim did not know the criminal in anyway. The criminal happened to be stalking the victim and so one night the criminal broke into the victim's house and raped the victim. Based on the information above and their past criminal record what type of punishment should they receive?

4. The person pictured was found guilty on the account of committing a murder; the victim was found stabbed multiple times by the perpetrator in the victim's home. There was no motive to why the perpetrator committed this murder. Based on the information above and their past criminal record what type of punishment should they receive?

Can you please report the race of the criminal that is picture above?

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

Appendix K

Feedback letter

Thank you for participating in my study. The questionnaire was used in order to determine the base of experience people is exposed to crime information and how much information people do know about the criminal justice system. I am interested in finding out weather a person's judgment plays a role in the type of punishment a criminal would receive based on two factors. These factors that I am interested in looking at are the race of the criminal and if the criminal had prior offences or was a first time offender. There were a total of four groups in the experiment which you were randomly placed in. The only difference in each group was the race of the criminal and if they also had prior offences. I predict that the criminal with the darker skin and prior offences will be punished harsher than the other criminals. This is important information to study to see if factors can contribute to the prison rates of minorities.

Please note that I am not interested in your individual results; rather, I am only interested in the results of a large group of consumers, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. My contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact me and I will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Sincerely,

Amanda Vance

Cell phone: (314) 520-7687 Email: Av419@lionmail.lindenwood.edu

Supervisor:

Dr. Michiko Nohara-LeClair 636-949-4371 (mnohara-leclair@lindenwood.edu)

Appendix M

Value Sets for Results

Incarceration

- 1- 1- Jail a year or less
- 2- Prison a 1 to 3 years
- 3- Prison 4 to 6 years
- 4- Prison 7 to 10 years
- 5- Prison 11 and more years

Supervision

- 1- Community Service
- 2- Parole
- 3- Probation

Fine

- 1- Fine \$100-399
- 2- Fine \$400-699
- 3- Fine \$700- 999
- 4- Fine \$1000 and more

Life or Death

- 1- Life
- 2- Death

The Prevalence of Technology

Greg Townsend

The current study at hand administered a survey to determine the prevalence of technology and Internet usage in undergraduate college students. The results of a survey administered to 66 participants revealed that just about two-thirds of the students may have or had an excessive problem, which could be related to several aspects such as age, gender, class status, country of origin, and so on. The results did allow the research to support the hypothesis that stated if someone in college were given a technology and Internet addiction survey, then he/she would report that he/she is in fact addicted to the Internet.

As old technologies are left behind and new technology is being discovered, the usage of it is drastically on the rise. With such a high usage, one must ask where to draw the line between a hobby and an addiction. This research survey is to discover if people are in fact addicted to technology, more specifically, the Internet. When looking at college students, it would be interesting to actually see how much effort and time is being guided to the use of the Internet. Therefore, the hypothesis for this study is if someone in college were given a technology and Internet addiction survey, then he/she will report that he/she is in fact addicted to technology and the Internet.

Some say that there is a negative effect on relationships from the over usage of the Internet. In fact, researchers have found significant differences between relationships formed through computer-mediated communication (on the Internet) and the relationships that are formed off-line (Chan & Cheng, 2004). Chan and Cheng (2004)

stated that a difference, which existed, was that less depth characterized an Internet-based relationship, meaning that online relationships will not be very strong, even though there are more of them.

In an additional study, Bryant, Sanders-Jackson, and Smallwood (2006), it was found that when on Instant Messaging, adolescents and teenagers spent their time as follows: keep in touch with friends, 92.0%; Make plans with friends, 88.0%; Play games with IM software, 61.5%; Play a trick on someone, 60.0%; Ask someone out, 44.0%; Write something you wouldn't say in person, 42.0%; Send non-text information, 38.5%; Break up with someone, 24.0%. At the same time, over 65% of those participants were using text messaging as well. What one can see from the results of the Bryant, et al. (2006) study is that users of technology use more than just one form, i.e., instant messaging and text messaging.

To better understand what constitutes an Internet addiction, Young (1996) gathered 400 case studies in order to provide some common Internet addiction warning signs: (1) compulsively checking e-mail's, (2) always anticipating the next Internet session, (3) other's complaining that one spends too much time on the Internet, and (4) other's complaining that one spends too much money on the Internet. As 1996 was 14 years ago, one can only imagine how these four warning signs may have changed. Let's say that someone is seeing a therapist or someone in the helping profession about his or her Internet addiction, how might what evaluate his or her patient? During a clinical interview, the therapist must interview for the following pieces of information to get a handle on the supposed addiction: affect, anxiety, ambivalence, cognition, and reality orientation (Legan, 1998). When looking at affect, one is looking at moods and the

patient's expressions of emotions, all while looking for signs of anxiety, or signs of interference with the patient's ability to function. Ambivalence deals with the patients' indecisiveness, doubt, fear of directness, and may indicate self-esteem and dependency problems. The cognition of such addict patients would show that disassociation is occurring, which may interfere with the patient's ability to be logical, clear, and relevant. Also looking at language acquisition of the patient falls under cognitive. Finally, during a clinical interview, the clinician is looking that the patients reality orientation. In Internet addiction, the most prevalent aspect of reality orientation would be the misunderstanding of time. However, other aspects would include knowing where one is (places) and understanding one's surroundings (Legan, 1998). The above pieces of information are all useful for those trying to determine if one does have an addiction, more specifically, an Internet addiction.

Internet addiction is not going to have the same impacts as addiction to alcohol or drugs, such as liver cirrhosis (alcoholism) or increase in stroke risk (cocaine usage). However, some of the side effects of Internet addiction include time (lack thereof), late nights (3 or 4 AM) and sleep deprivation (Young, 1996). On a more physical side, excessive use can lead to carpal tunnel syndrome, back strain, or even eyestrain (Young 1996). When looking at the negative effect of Internet addiction, one should really consider familial, academic, and occupational problems. Young (1996) found that 53% of couples where one spouse was addicted to the Internet reported relationship problems. Over time, relationships with the family slowly decrease in order to make more time for being in front of the computer. The most affected familial aspect would be marriages. The spouse with the Internet addiction neglects to do household chores and even neglects

to take care of the children. As time goes on, this “phase” turns into an addiction and turns into arguments and fights about how the spouse is spending his/her time (Young, 1996).

Quittner (1997) even says that lawyers dealing with marital affairs have seen a rise in divorce due to cyber affairs. The next major effect is on academics, or schooling. The issue that is apparent here is that the Internet is such a useful and prominent tool for those enrolled in school. Due to excessive Internet usage, Young (1996) found that 58% of students reported a decrease in their study habits. This is one of the major issues of concern in the study at hand. Another academic aspect that comes into question is literacy. Research on text messaging and instant messaging is attempting to discover if there are any positive or negative correlations. As no conclusive results have been found, it has been found that text messages and instant messages to people who are not close friends or is about something serious turn from the abbreviated versions to a more conventional way (Baggott, 2007).

Finally, the last area that can be negatively affected by Internet usage is in the occupation or job setting. When employees misuse the Internet at work, they can in fact lose their jobs (depending on how they misused it). Surveying the top 1,000 companies, Robert Half International (1996) discovered that 55% executives believed that when their employees misused work time to surf the Internet that the employees are undermining the company and decreasing their effectiveness. As 14 years have passed since this research, there are now monitoring devices and/or firewalls/blocks for executives to use on certain websites.

Now, the real question is whether or not Internet addiction (and other forms of technological addictions) should be considered for the *Diagnosics and Statistical Manual for Mental Disorders (DSM)*. In a previous issue of *American Journal of Psychiatry*, there is an editorial describing Internet addiction as “excessive gaming, sexual pre-occupations and e-mail/text messaging” as a compulsive disorder and should therefore be part of the DSM (Ottawa Citizen, 2008 as cited in Park, 2008).

With all of the issues and research revolving around technology and the Internet, I am very interested in studying these two aspects among college students.

Method

Participants

My experiment involved a total of 66 participants, 40 of them being women and 26 being men. The ages of these 66 participants ranged from 18 to 33 years old. All of the participants came from a college/university setting currently enrolled in undergraduate programs at Lindenwood University where 33 were freshman, 18 were sophomores, 8 juniors, and 7 total seniors. Also, all participants were recruited through the Lindenwood Participant Pool (LPP). The LPP is located on the fourth floor of Young Hall on Lindenwood University’s campus. Recruitment was done through the use of the LPP sign up sheets, which were put up on the LPP Board after approval. Participation was strictly voluntary, however, the participants through the LPP also received extra credit from their professors if they were enrolled in one or more of the following classes: Cultural Anthropology (ANT 112), Focus on Modern Asia (ANT 300), Principles of Psychology (PSY 100), Interactive Psychology (PSY 101), Basic Concepts of Sociology (SOC 102), Social Problems (SOC 220), Race and Ethnicity: A Global Perspective (SOC

318), Introduction to Athletic Training (AT 295), Foundations of Sports and Exercise Science (EXS 100).

Materials

The materials used in this study were fairly straightforward. Paper was the main material for this research. It was used for items such as the reSTART Internet Addiction Recovery Program (2010) 15-question survey (Appendix A), demographic survey (Appendix B), informed consent form (Appendix C), feedback letter (Appendix D), and participant receipts (Appendix E). Aside from the materials I prepared, the LPP also booked rooms (in the psychology lab in the bottom floor of Young Hall) for me that included chairs or tables/desks to administer the research. Ink pens were also provided in order for the participants to fill out all of the aforementioned documents. These were used to fill out everything that was handed to the participants. There were also a three 3-ring binders, which I utilized to keep all of the above materials organized and easily accessible.

Procedure

Since research was done through the LPP, all recruitment was done through sign up sheets that were placed on the LPP Board. Once participants signed up, they participants would arrive on the allotted time and day, sign in on the Experimenter's List of Participants (Appendix F), and choose a desk or spot where I placed three sheets of paper on the desks; Appendices E, C, B, and A (in that order). The experimenter then introduced himself and informed the participants to start to fill out the papers in order on their respective desks and for them to inform the experimenter when finished. Once all participants finished filling out the papers, the papers were collected and placed into one

of the 3-ring binders. Next, the experimenter debriefed the participants as to purpose and hypothesis of the experiment and a feedback letter was then passed out with the summary of the experiment and contact information for the experimenter if the participants needed to reach him for any reason at a later date.

Results

My hypothesis stated if someone in college were given a technology and Internet addiction survey, then he/she would report that he/she is in fact addicted technology and the Internet. I used scoring guide from the reSTART Internet Addiction Recovery Program (2010) survey that stated, three to four "yes" responses suggest you may be spending too much time using the Internet or interfacing with technology and five or more "yes" responses suggest you may have a problem with excessive Internet or technology use, or a possible addiction. After analyzing the data and conducting frequency tests, I found that about two-thirds of participants had three or more "yes" responses and may have or have an excessive technology or Internet addiction. I found that 40.9 % had no problem, 27.3 % may have a problem and 31.8% have an excessive problem, it is important to know what participants had these problems or lack thereof.

When comparing the data, it is important to know where and who the problems reside with. First, I compared the number of yes responses between participants from the United States of America with students from other countries. Please note that three students from the United States of America did not fully complete their surveys; only partially. On average, participants from the U.S.A circled 2.82 "yes" responses and participants from countries other than the U.S.A. circled 4.37 "yes" responses. When it came to grade levels, freshman would circle an average of 3.13 "yes" responses,

sophomores an average of 3.41 “yes” responses, where as juniors were lower with an the average circled “yes” responses at 2.13 and seniors with an average “yes” response at 5.00. Finally, when comparing the genders, men circled “yes” an average of 3.20 times whereas the women were little higher at 3.34 averaged circled yes’s.

In the demographic survey (Appendix B), the last question had participants choose what forms of technology he/she uses most. The top three (of 17 total to choose from) were cell phone usage at 80.3 %, social networking at 72.7 %, and music sharing and television both with 36.4 %.

Discussion

My hypothesis, which stated if someone in college were given a technology and Internet addiction survey, then he/she would report that they are in fact addicted to technology and the Internet, was in fact supported by the research and I can therefore accept my research hypothesis. With all of the different statistical analyses that were performed, what do they all mean? According to reSTART, “If you or someone you care about is using the Internet or technology excessively, and it is interfering with important aspects of daily living (e.g. health, family life, relationships, academic achievement, or work responsibilities) intervention may be merited.” (reSTART, 2010). For the 31.8 % that circled five or more “yes” responses in the present study, they may need to consider getting help. For the 27.3% that may have a problem, steps need to be taken to it does not further into excessive use.

Ideally, I would have been able to get many more participants, including evening out the men and women ratios as well as U.S. to non-U.S. country origins. If time permitted, contacting the company, which created the survey to get their results and

compare, would also be beneficial. If looking at the survey itself, I think there should be more questions that are more specific as technology is much more broad than the Internet, though they are both wide spread topics. As time goes on, it is apparent that technology and Internet usage is drastically on the rise and will continue, so the next steps are finding out ways to cope or handle any excessive problems.

References

- Baggott, K. (2006, December 21). Literacy and text messaging: How will the next generation read and write? *Technology Review*, Retrieved from <http://www.technologyreview.com/biztech/17927/>
- Bryant, J. A., Sanders-Jackson, A., & Smallwood, A. M. K. (2006). IMing, text messaging, and adolescent social networks. *Journal of Computer-Mediated Communication*, 11(2). <http://jcmc.indiana.edu/vol11/issue2/bryant.html>
- Chan, D., K.-S., & Cheng, G. H.-L. (2004). A comparison of offline and online friendship qualities at different stages of relationship development. *Journal of Social and Personal Relationships*, 21 (3), 305-320.
- Chou, C., Chou, J., & Tyan, N. (1998). An exploratory study of Internet addiction, usage and communication pleasure. Retrieved from ERIC database.
- Chou, C., Condrón, L., & Belland, J. (2005). A review of the research on Internet addiction. *Educational Psychology Review*, 17(4), 363-388. doi:10.1007/s10648-005-8138-1.
- Cosette, R. (2010). *Restart Internet addiction recovery program*. Retrieved from <http://www.netaddictionrecovery.com/the-problem/are-you-addicted.html>

- Legan, D. R. (1998). *Psychological assessment in the treatment of addictions*. Informally published manuscript, University of Illinois College of Medicine at Peoria, Peoria, Illinois. Retrieved from http://www.addictionrecov.org/paradigm/P_PR_S98/Legan_S98.html
- Park, W. (2008, March 18). Internet/email/text messaging addiction soon to be official. *IntoMobile*, Retrieved from <http://www.intomobile.com/2008/03/18/Internetemailtext-messaging-addiction-soon-to-be-official.html>
- Young, K. S. (1996). Internet addiction: Symptoms, evaluation, and treatment. *Innovations in Clinical Practice, 17*.
- Young, K. S. (1996). *Internet addiction: The emergence of a new clinical disorder*. Paper presented at the 104th Annual Meeting of the American Psychological Association, Toronto, Canada.

Appendix A

Survey

Participant ID: SRP-

Directions: Please choose the answer that best fits you for each question.

1. Do you feel you have a strong desire, or impulse, to use the Internet?

Yes

No

2. When attempting to limit or cease use of the Internet and/or other technology, do you find yourself feeling restless, irritable or anxious?

Yes

No

3. When limiting or ceasing use of your usual and preferred Internet activities, do you find that seeking out the use of other media sources (i.e., TV, handheld consoles, cell phones, etc.) relieves those feelings of restlessness, anxiety or irritability?

Yes

No

4. Do you find yourself continually having to increase the amount of Internet and/or digital technology use to reach your previous level of satisfaction?

Yes

No

5. Do you continue to use the Internet and/or other forms of digital technology in excess, regardless of its harmful effects (e.g., relationship problems, failing classes, missing work, poor hygiene, weight gain or loss, etc.)?

Yes

No

6. Have you been repeatedly unsuccessful in limiting the amount of time you spend on the Internet and/or digitally-based products?

Yes

No

7. As a result of your Internet use, are you spending little or no time in social, recreational or other activities that you used to enjoy?

Yes

No

8. Do you have difficulty controlling use (e.g. time and content) of your Internet and/or digital technology use?

Yes

No

9. Do you find that your Internet use is a way to escape problems or gain relief from negative feelings?

Yes

No

10. Do you deny or minimize your Internet use to parents, teachers, schoolmates, friends, or professionals (this includes time, content, money expenditures, etc.)?

Yes

No

11. Are you finding that everyday life and social functioning is impaired (e.g., relationships, education or employment) as a result of your Internet or technology use?

Yes

No

12. Are you experiencing chronic exhaustion due to lack of sleep, weight gain from lack of exercise, poor general health from poor nutrition, or other physical health problem due to excessive Internet use or video gaming?

Yes

No

13. Have you ever stolen, cheated, or lied in order to fulfill your online desires (e.g., parent's credit card to buy something for a game)?

Yes

No

14. Have you ever become violent or abusive when someone tried to limit your access to the Internet or video game?

Yes

No

Directions: Please circle the answer that best fits you.

15. Do you think you may have a problem with excessive use of the Internet and/or any other technology-based product(s)?

(Excessive: using some form of technology or Internet more than 5 times an hour (please do not include checking what time it is).

Yes, absolutely

Maybe a possibility

I don't think so

Absolutely not

Someone in my life thinks I do

Other (please specify):

Appendix B

Participant Demographic Survey

Participant ID: SRP-

1.) Please circle your schooling status:

Freshman Sophomore Junior Senior Other: _____

2.) Please indicate your age: _____ years

3.) Please circle your gender:

Female Male

4.) What country are you from? _____

5.) What Internet or technology-based activity do you enjoy the most (Please choose up to 3 choices by placing an X on the line in front of the description)?

- | | |
|---|---|
| <input type="checkbox"/> Blogging | <input type="checkbox"/> Online Gaming |
| <input type="checkbox"/> Cell Phone Use (Blackberry, iPhone) | <input type="checkbox"/> Online Pornography (online sex cruising) |
| <input type="checkbox"/> Forum Browsing | <input type="checkbox"/> Online Shopping |
| <input type="checkbox"/> Handheld Gaming Devices | <input type="checkbox"/> Social Networking (Facebook, Twitter etc) |
| <input type="checkbox"/> MMORPG (Massively multiplayer online role-playing games) | <input type="checkbox"/> Software Developer (programming, IT, etc.) |
| | <input type="checkbox"/> Surfing the Net |
| <input type="checkbox"/> Music Sharing | <input type="checkbox"/> Television (Hule, on/offline viewing) |
| <input type="checkbox"/> Online Auctioning | <input type="checkbox"/> Video Gaming (Microsoft Xbox Live, Nintendo Wii, Playstation, other) |
| <input type="checkbox"/> Online Gambling | |

Other (please specify):

Appendix C

Informed Consent Form (LPP Participants)

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a 15-question survey about Internet addiction that will take approximately 10 minutes to complete. I also understand that all questions must be answered. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice, as well as if I cannot complete the test. I understand that the information obtained from my participation will in no way be able to identify who I am and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be used strictly for research and educational purposes only. I understand that any questions I may have regarding the survey shall be answered by the researchers(s) to my satisfaction. Finally, I verify that I am 18 years of age and that I am legally able to give consent. Also, I verify that if I am under the age of 18 that I have on file, with the LPP Office, a completed parental consent from that allows me to give consent as a minor.

_____ Date: _____

(Signature of Participant)

_____ Date: _____

(Signature of Researcher Obtaining Consent)

Student Researcher's Name, E-mail, and Number:

Greg Townsend grt357@lionmail.lindenwood.edu (314) 605-9056

Supervisor:

Dr. Michiko Nohara-LeClair

Course Instructor

(636) 949-4371

mnohara-leclair@lindenwood.edu

Appendix D

Feedback Letter

Thank you for participating in my experiment. The survey that was just administered was about technology and Internet addiction. All participants received this survey. I am attempting to determine how many college students are in fact addicted to technology or Internet. If this is the case, it is apparent that human interaction is decreased by the time one spends on the Internet, which is mentally unhealthy. There were a few questions that may have been personal, but there will be no way for anyone to identify you and your answers.

If you have any questions and/or concerns regarding any portion of this study, please do not hesitate to bring them up in the future. Contact information can be found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study and a date later than you taking the test, please make an effort to contact a number at the bottom of the page and it will be available upon the completion of the experiment.

Thank you for your time and contribution to the study.

Sincerely,

Principal Investigator:

Greg Townsend (314) 605-9056 grt357@lionmail.lindenwood.edu

Supervisor:

Dr. Michiko Nohara-LeClair (636) 949-4371 mnohara-leclair@lindenwood.edu

Appendix E

<u>Participant's Receipt</u>	<u>Participant's Receipt</u>
x _____ (Participant's full name-printed)	x _____ (Participant's full name-printed)
x _____ (Signature)	x _____ (Signature)
x _____ (Student ID number) (Time of Class)	x _____ (Student ID number) (Time of Class)
x _____ (Teacher's name)	x _____ (Teacher's name)
_____ (Project Number)	_____ (Project Number)
_____ (Experimenter's name-printed)	_____ (Experimenter's name-printed)
_____ (Experimenter's Signature) (date)	_____ (Experimenter's Signature) (date)
Please return this form to Y407 to receive your extra credit	Please return this form to Y407 to receive your extra credit

Appendix F

EXPERIMENTER'S LIST OF PARTICIPANTS

Project #: _____ Experiment Name: _____

	Print Participant's Name	Date	Professor	Class Time	Student ID Number
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					

*Experimenter's Signature*_____
Date

Must be completed (this **doesn't** mean that all 20 slots have to be filled out) and turned into the LPP by **Friday evening 8:00 P.M.** or the experimenter responsible will be fined accordingly.

Facing the Book of Reliance:**An Analysis of College Student's Dependency on Facebook**John R. Gatermann⁸

The principle of this study was to determine if college students have become dependent on the online social network, Facebook. It was hypothesized that college students have become dependent on Facebook in order to gain and maintain social connections; they have become reliant about the utilization of the online social network tool. Additionally, the terms, addiction and dependent were analyzed in order to discover participants' interpretation of their own behavior in relation to the online network. Participants were led to believe that Facebook had been temporarily terminated. By informing the participants that the website had a multitude of legal suits being brought against them. A fabricated newspaper article accompanied this deception in order to achieve credibility. Afterwards, the participants were given a survey which consisted of questions pertaining to dependency on Facebook. The participants were asked about their utilization of the network, how it has affected their relationships, how their behavior has changed upon entering college (in regards to the participants' frequency of using the site), and a demographics portion. All 59 participants in the study possessed a Facebook account. According to the addiction survey all but three participants showed signs of dependency. Furthermore, those participants who openly admitted to being addicted had a statistically significantly higher dependency score than those who did not.

⁸ John R. Gatermann, Psychology, Lindenwood University
JRG985@Lionmail.Lindenwood.edu

At the click of a button, the world is brought to an individual without leaving the sanctity of their very home. Americans have become enveloped by this astounding network of electrical connections that is the internet. Whether people stream the web for sport updates, new clothing, former presidents, or new love interests, the internet has revolutionized every aspect of Americans' lives. Social networks have become increasingly popular with today's youth and have begun impacting adults as well. In particular, there has been one social network that has seemed to dominant all others. Facebook has been rapidly growing amongst all generations and has become the leader of all social networks.

According to Holliday and Knoop (as cited in Smith, 2010) the increasing number of Facebook subscribers is astonishing. In six months preceding March 25, 2009, four million women and three million men utilized Facebook (Holliday & Knoop as cited in Smith, 2010). Holliday and Knopp (as cited in Smith, 2010) also tracked Facebook subscribers increase back to 2008 and discovered a remarkable enhancement; there were 34 million people subscribed to Facebook, internationally. In 2009, that number intensified to 95 million. However, today's findings are inconceivable. In 2010, the total number of Facebook subscribers soared to 400 million people globally (Holliday & Knoop as cited in Smith, 2010). In order to understand the significance of this factor, the United States population is 308,837,693 according to the United States Census Bureau (2010). This illustrates that there are 91,162,307 more subscribers to the online social network, Facebook, than there are people currently residing in the United States today.

Seemingly, Facebook has taken the industrial world by storm; however, how does this social network match-up against other online social networks? In the aspect of one

of its more substantiated rivals, MySpace, Facebook has overtaken this social network. According to Smith (2009), MySpace subscribers dropped by 2%, whereas, Facebook subscribers, in 2009, increased its members by 16.6 %. Other online social networks failed to match Facebook's impressive expansion during this time (Smith, 2009). On the contrary, the new incumbent, Twitter, to the social networks has to be analyzed as well. According to Ostrow (2010), Twitter has increased its member status from 12.1 million members in 2009 to 18.1 million members in 2010. This is a 10.8% increase over the past year and the projected members are suggested to increase dramatically over the next few years as this network matures (Ostrow, 2010). Even though this number of members is relatively low considering the number of members Facebook possesses, Hameed (2010) argues that future increases in Twitter will be remarkable. Among its active members, there were 35 million Tweets sent per day during 2009 (Hameed, 2010).

Although Twitter has become increasingly popular over the past few years, it is conceivably immature next to the magnitude of Facebook's popularity. Among its competitors, Facebook seems to stand triumphantly at the top of the online social networks. The sheer multitude of subscribers raises the question of why people are so engaged in utilizing this tool.

The dependency on the online social network is apparent. However, this newly discovered tool by the public has raised many concerns. In regards to school, Facebook seems to be problematic amongst students when attempting to manage Facebook utilization and school work. According to Brydolf (2007), students are becoming increasingly vulnerable to threatening material posted on these social networks. Subsequently, this material is transcending into the classroom and causing student's

learning environments to be impeded (Brydolf, 2007). Moreover, Brydolf (2007) noted a survey compiled by the National School Boards association that 36 % of students reported that material posted on the networks were conflicting with their learning environments. In relation to this problem, Fodeman and Monroe (2009) outlined that the potentiality of harassment on Facebook is very high. Under their investigation of this online social network, they discovered that “students post embarrassing, humiliating, denigrating and hurtful content in both text, photos, and videos” (Fodeman & Monroe, 2009). Also, they noted that students have a misconception of privacy when using the internet to maintain social connections (Fodeman & Monroe, 2009). In relation, this same belief is also shared by Brydolf (2009). As reported, educators are faced with the dilemma on how to control this public service without infringing on the students’ freedom of speech (Brydolf, 2007). The problem lies in regards to how much authority the school has on students’ personal lives. Consequently, social networks have conflicted school environments and concern about subjective material posted on these sites is a relevant issue.

Aside from the slander discovered on Facebook between students, concerns regarding relationships are also in question. Students and other people from the general public are resorting to using online social networks for making and maintaining social connections with others. However, this dependency on the service is a major concern. According to Fodeman and Monroe (2009), children have become accustomed to formulating their relationships online. This is a concern because real-life socialization may be impeded. Often, these students may make unsafe decisions in formulating

relationships, and may leave themselves exposed to becoming a victim of harassment or other crimes (Fodeman & Monroe, 2009).

By understanding the potential risk concerns revolving around Facebook utilization, the reasons for dependency on the network can be analyzed. According to a study conducted by Pempek, Yermolayeva, and Calvert (2009), 92 undergraduates were assessed on issues pertaining to their Facebook use. Reportedly, these students frequented the site for at least 30 minutes per day (Pempek, Yermolayeva & Calvert, 2009). During this time, it was reported that students utilized this tool in order to maintain connections between peers. They discovered that students were more often observing the content posted by others, rather than, posting their own material. In the aspect of maintenance of friend connections, students had a previous offline relationship with these people and used Facebook to preserve the bond (Pempek, Yermolayeva & Calvert, 2009).

On the contrary, does this maintenance of relationships facilitate dependency on the social network? According to Bedi (as cited in Pope, 2010), the addiction to the internet has become apparent across university campuses due to the fact that internet capabilities have been made easily accessible. Moreover, it is noted that Facebook provides intermittent reinforcement to its users (Bedi as cited in Pope, 2010). Specifically, people receive similar feelings to gambling highs when anticipating new notifications and messages on Facebook (Bedi as cited in Pope, 2010). They find it hard to restrain their urges to check Facebook for these new notifications that could be potentially awaiting them.

In relation to this addictive component to Facebook, Garbley (as cited in Herman, 2010) suggests that Facebook is not a physical addiction like drugs, but it is more of a psychological dependency. Additionally, he adds that the problem becomes apparent “when school work calls, when relationships demand your attention and you chose Facebook over those relationships” (Garbley as cited in Herman, 2010, p. 1). In relation, the theory about Facebook Addiction Disorder (FAD) has become a controversial issue in today’s society. In a report by Fenichel (2009), FAD is prevalent in society. With the increased dependency on the internet as a whole, Facebook has seemingly become a major concern. According to Fenichel (2009, p. 1), “Facebook Addiction Disorder (FAD) appears to have the most ingrained and self-reinforcing of all scenarios, reinforcing through immediacy, acclamation, intimacy, shared experience, shared creativity, and the ability to be the complete and total captain of the ship of one's Facebook home page”. Moreover, Fenichel (2009) discussed how this dependency is often undermined because of the vast majority of subscribers. According to him, Facebook has become such a commonplace due to the simple fact that it has taken on the perception of “everybody's doing it” (p. 1).

Facebook is a growing concern amongst all generations worldwide. The risks and concerns revolving around privacy matters and dependency amongst its users is potentially problematic. In this paper, it was hypothesized that college students have become dependent on Facebook in order to gain and maintain social connections. Additionally, they have become reliant about the utilization of the online social network tool. In order to assess this hypothesis, a resume was formulated in order to test the dependency of participants’ on Facebook. The survey included questions from a

previous nicotine addiction survey (adapted from Difranza's nicotine addiction test), as well as, other questions related to reliance. By interpreting these results, it was hoped that the risk factors of becoming dependent on Facebook would be brought into awareness, and that the severity of the issue is more pertinent than previous perceptions dictate.

Method

Participants

The participants in this study were recruited from the Lindenwood Participant Pool (LPP). The LPP is through Lindenwood University as is designed in order to pool participants for research in an ethical nature. Fifty-nine participants were recruited from the LPP. The participants ranged from various ethnic backgrounds in order to gain a consensus of the dependency of Facebook on people inhabiting different countries apart from the United States, and how Facebook has allowed for them to stay connected to peers and family. Participants obtained extra credit from the following undergraduate classes: ANT 112, ANT 300, PSY 100, PSY 101, SOC 102, SOC 220, AT 295, EXS 100, and SOC 318. All participants that partook in this study were at least 18 years or older.

Materials

The study included a survey that outlined questions related to dependency on Facebook (adapted from Difranza's nicotine addiction test) and demographic related questions (Appendices A & B). Moreover, additional materials were utilized during the process of the study: signup sheet B (which allows researchers to set specific times for participants to sign up), informed consent forms (two copies per participants which will allow for students to keep one for personal record, see Appendix C), a feedback letter

(depicting the nature of the study, its importance, and why deception was utilized, see Appendix D), a room to conduct the study (which always consisted of one chair and desk for the participant to complete the research), experimenters' list of participants (to obtain all individuals participating in the study), participants' receipts (which was provided to the participants by the researcher in order to ensure that credit was fully allotted to these individuals), and a mock document (Appendix E) stating the reasons for the online social network's termination (to ensure credibility of deception).

Procedure

In the beginning, the participants were informed that the social network, Facebook, has been terminated due to the fact that the site was pending cases due to inadequate privacy measures (see Appendix F for script). Moreover, this fabrication was associated with a synthetic document (Appendix E) that outlined the basis of the termination and the cautionary measures the government was utilizing in order to provide a secure social network.

After being erroneously informed of the temporary shutdown about Facebook, the participants were asked to fill out a survey on how their lives will be affected by this termination. In regards to the questions that were outlined on this survey, they included topics pertaining to how the social connections between friends were altered; they were asked to inquire how the online social network has altered their lives in general; they were asked how their usage of the network has changed from previously entering college; participants were assessed on how their school work is affected; finally, participants were assessed on demographics pertaining to their frequency of Facebook usage, and the gender differences in Facebook use (see Appendix B for entire list of questions).

After the study was completed, the participants submitted their surveys in a closed container, ensuring the privacy of the participant, and were debriefed about the essence of the study. Moreover, the participants were informed of the fraudulence in the beginning of the study. They were informed that Facebook has not been terminated and is fully active. Furthermore, participants were explained the nature of the deception. They were made conversant in the aspect that the deception was only used in order to simulate an environment where individuals are lead to believe the online social network has been actually terminated and to obtain candid answers.

After the debriefing, the participants were given a feedback letter outlining the circumstances of the experiment. Finally, they were asked to not inform any peers about the nature of the study in order to protect the anonymity of the study.

After concluding, the participant received a participant receipt in order for him/her to fill out and receive their bonus points for partaking in the study. They were informed to provide the receipt to the LPP office to ensure their extra credit was recorded.

Results

Analyses were focused on the participants' dependency on the online social network, Facebook. After analyzing the results of the questions related to the addiction survey (adapted from Difranza's nicotine addiction test), it was discovered that the average number of participants answering yes (indicating addiction) was 4.4 (SD = 2.50) with the most frequently occurring being 7. According to Difranza's (2002) interpretation of the analyses, 56 out of the 59 participants indicated signs of dependency on Facebook (94.92 %).

After comparing these results to the analyses of participants identifying themselves as being addicted, the results indicated that these participants who revealed their addiction had a statistically significantly higher dependency score than those who did not outwardly address their addiction, $t(59) = 2.16, p < .05$; however, those who indicated that they were not addicted to Facebook, still possessed a scale higher than one which indicates addiction according to Difranza (2002).

All in the present study possessed a Facebook account (100 %). Of these 59 participants, 12 participants indicated having the online social network Myspace in congruence with Facebook (20.3%). All other networks: Freindster, Twitter, Classmates, and LinkedIn, were possessed by less than 3.4 % of the participants. Participants also provided that only 32 of the 59 would choose another network if Facebook were terminated (54.2 %). In relation to Facebook, the participants acquired their memberships 2.68 (SD 2.06) years ago. Furthermore, it was revealed that of the 59 participants, 40 of them increased their activity after entering college (67.97%).

The majority of the participants indicated that they checked Facebook twice the day prior (19 of the 59), and only 4 of the 59 participants indicated that they do not check Facebook during homework (6.78 %), meaning, 93.22 % of the participants check Facebook occasionally while doing their homework.

Finally, 29 of the 59 participants indicated that they were addicted to Facebook (49.20 %); whereas, 22 of the 59 participants believed they were not dependent of the social network (37.30 %).

Discussion

As previously indicated, it was hypothesized that college students have become more dependent on the online social network Facebook. When participants were informed that the social network was being terminated due to legal proceedings, students indicated signs of dependency on Facebook. After being evaluated by an addiction survey, it was suggested that college students would be diagnosed as being addicted to Facebook (note, addiction and dependency reliance are utilized interchangeably and maintain the same definition). After conducting analyses, the results indicated that college students were addicted to Facebook. According to Difranza (2002), by answering yes to any of the ten questions pertaining to addiction, the participant elicits signs of dependency. As a result, 56 participants answered yes to at least one question on the addiction survey thereby revealing their reliance. Furthermore, it was shown that participants who admitted to their addiction revealed a statistically significantly higher dependency scale on Difranza's (2002) test.

Accordingly, Fenichel's (2009) argument in regards to Facebook addiction being diagnosed as a disorder may not be outlandish after all. In his report, he argued that Facebook has self-reinforcing qualities similar to other addictions. Comparably, it is like smoking cigarettes; it satisfies emotional cravings, it is immediate, and, it can pose as a social outlet. Even though nicotine is considered, biologically, the addictive aspect of smoking, all these others qualities can be suggestive of a dependency. Likewise, Fenichel (2009) argued that these are the aspects that have created this mass addiction to the online social network. Nevertheless, others like Bedi (as cited in Pope, 2010), have suggested that it was these same qualities about Facebook that made it addictive. She

compared the feelings that users receive from Facebook to the emotional highs that gamblers receive (Bedi as cited in Pope, 2010). Potentially, this is the reasoning why the results indicated such a vast majority of the participants being dependent on the network.

On the contrary, research conducted by Garbly (as cited in Herman, 2010) suggests that Facebook is not an addiction akin to drugs. He provides that Facebook addiction is more reminiscent of a psychological dependency. The problem becomes apparent when the need to access Facebook starts interfering with everyday life events (Garbly as cited in Herman, 2010).

Garbly's (as cited in Herman, 2010) research makes apparent the argument revolving around addiction and dependency and how each of these terms is interpreted. According to the results of this study, there was a discrepancy between addiction and dependency (29 indicating they were addicted and 22 indicating they were dependent). However, Difranza (2002) regarded the terms as being interchangeable and did not discriminate between them. In his test, he expressed that participants were dependent if they answered yes to any one of the ten items. Accordingly, there was an item on his test expressing the word "addiction" (Difranza, 2002). Nevertheless, the results indicate that there is some aspect of reliance on the network.

Aside from the results from Difranza's (2002) addiction survey, it was intriguing to discover that every participant possessed a Facebook account. Every participant who partook in this study maintained a Facebook profile with minimal influence of other social networks. Correspondingly, previous research conducted by Holliday and Knoop (as cited in Smith, 2010) indicated that Facebook was the fastest growing social network on the internet. Furthermore, the results of this study were congruent to Holliday and

Knoop's research(as cited in Smith 2010), on the basis that Myspace was a distant second. However, their research pointed that Twitter had increased dramatically and was projected to continue to increase over the next few years. According to the present study, however, study, Twitter had a remarkably low subscriber rate.

After interpreting these results in congruence with the prior research done on Facebook, some limitations were perceived pertaining to the study. In regards to the deception tactic utilized within the study, it can be argued that it was interpreted differently amongst each participant. Some participants may have been more susceptible to believing the deception than others; however, if it was not used the study could have potentially not been taken as earnestly. Suggestively, the deception created a sense of awareness in the participant that this study was serving a necessary cause and that genuine answers to the survey were needed. On the other hand, by not using deception, the possibility of making the participants feel uneasy is reduced and could yield different answers. It is possible that subjects felt inclined to answer in such a fashion that provided a higher reflection of dependency.

Apart from the deception, the high number of Facebook subscribers amongst the participants can be analyzed. Suggestively, the study may have yielded such a high number of Facebook users due to the fact that those who had a Facebook account were more inclined to participate in the study because they knew it pertained to Facebook. This could potentially skew the results because these people may already have a higher tendency to access Facebook more often due to their partiality to the network.

In relation to the participants themselves, most were female, 18 to 20 years of age, and white. This could bias the sample being that women fitting this profile access

Facebook more often and are more expressive about their activity with the network.

Possibly, men are not as involved on Facebook as women, or people from other parts of the world may use other means of interacting socially online.

Correspondingly, there were 24 participants who were absent from the study based on their failure to show up for the study. Having such a high number of participants not present at the study could be representative of diffusion of treatment. It is possible that the deception of the study was compromised by participants informing others of the nature of the study. Consequently, this could have caused participants to not be willing to partake in the study.

By understanding these limitations within the study, suggestions for future research can be outlined. Being that Facebook has become apparent in today's society, the risk factors related to the issue of dependency need to be analyzed. Because the internet has created a new breeding ground for potential criminal predators to strike, people need to be made aware how dependency on such a network like Facebook could be problematic. In the future, research could be regionalized in order to assess where these problems are most apparent. By targeting the geographic that are most dependent on Facebook, more awareness could be spread about how to safely use the network.

Moreover, gender research in regards to Facebook could be generated as well. Being that this study representative females being most addicted to Facebook, a new study could analyze how many of these women have been victimized due to their frequency on the network. Furthermore, research could be conducted on men in the aspect of how dependent they are on the network and if they have ever been victimized

due to their behavior on Facebook. On the other hand, research could be conducted to discover who the possible assailants are.

Aside from the prospect of criminality on Facebook, research can be conducted on its utilization as a marketing device. Vastly, companies have been quick to jump on board with utilizing Facebook as a marketing tool. Companies continue to dump money into new schemes to sell their products. Future research could be conducted in order to discover what strategies within Facebook work the best and how to maximize the market without jeopardizing the company. Additionally, new research could provide safeguards against certain crisis like the deception that was used in this study. A termination of Facebook could prove detrimental to many businesses, but with research, safeguards could be discovered to prevent such a crisis.

Overall, Facebook is a growing popularity and people have become heavily involved in utilizing the tool. Whether college students are maintaining contacts with peers residing in various parts of the world, businesses instituting new marketing schemes, or, criminals discovering new victims, Facebook has made its mark on society. It is a swelling epidemic that possesses an untold future. Continual research may be the only tool to be able to shed light on its mysterious forthcoming

References

- Brydolf, C. (2007). Minding Myspace: Balancing the benefits and risks of students' online social networks. *Education Digest*, 73, 4-8.
- Fenichel, M. *Facebook addiction disorder* [PDF document]. Retrieved from www.fenichel.com/facebook. 13 March 2010.

Fodeman, D., & Monroe, M. (2009). The impact of Facebook on our students. *Teacher Librarian*, 36, 36-40.

Hameed, B. (2010, February 22). Twitter users sending 50 million tweets a day. *Social Times*. Retrieved from <http://www.socialtimes.com/2010/02/twitter-users-sending-50-million-tweets-each-day>. 13 March 2010

Herman, C. (Producer). (2010, February 1). *Action news* [Television broadcast]. Philadelphia, PA: WPVI-TV.

Ostrow, A. (2010). How many people actually use Twitter. *The Social Media Guide*. Retrieved from <http://mashable.com/2009/04/28/twitter-active-users/>

Pempel, T.A., Yermolayeva, Y.A., & Calvert, S.A. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology*, 30, 227-238.

Pope, D. (2010). Potential Facebook addiction. *Addiction Alternative Information*. Retrieved by <http://www.addictioninfo.org/articles/2171/1/Potential-Facebook-addiction/Page1.html>. 14 March 2010.

Smith, D. (2009, March 29). Myspace shrinks, as Facebook, twitter, and Bebo grab its users. *The Observer*. Retrieved by <http://www.guardian.co.uk/technology/2009/mar/29/Myspace-Facebook-Bebo-Twitter>

Smith, J. (2010, March). The Facebook global monitor: Tracking Facebook in global markets. *Inside Facebook*. Retrieved by <http://www.insidefacebook.com/Facebook-global-market-monitor/>

(2010, March 11). U.S. & population clocks. U.S. Census Bureau. Retrieved from

<http://www.census.gov/main/www/popclock.html>

Appendix A

Nicotine Addiction's 10 Warning Signs
HONC - Hooked On Nicotine Checklist

1. Have you ever tried to quit but couldn't?
2. Do you smoke now because it is really hard to quit?
3. Have you ever felt like you were addicted to tobacco?
4. Do you ever have strong cravings to smoke?
5. Have you ever felt like you really needed a cigarette?
6. Is it hard to keep from smoking in places where you are not supposed to, like school?

In answering the last four questions, when you tried to stop smoking, or when you have not used tobacco for a while ...

7. Did you find it hard to concentrate?
8. Did you feel more irritable?
9. Did you feel a strong need or urge to smoke?
10. Did you feel nervous, restless or anxious because you couldn't smoke?

Answering " **yes** " to any **one** of the above ten questions indicates that you may already be hooked on nicotine and are chemically dependent. Your "yes" answer is your own honest self assessment that you have already lost the freedom and ability to simply and effortlessly walk away. Two-thirds of all teens who you see smoking regularly will spend their entire life as slaves to nicotine. If you HONC we'll help - WhyQuit.com

Source: HONC - (Hooked on Nicotine Checklist), Tobacco Control, Sept. 2002
Dr. JR Difranza, Development of symptoms of tobacco dependency in youths.
Reliability study of HONC factors - July 2002

Appendix B

1. Do you currently have an active Facebook profile?
 1. Yes 2. No

2. If you do not use Facebook, do you use other online social networks?
 1. My Space
 2. Friendster
 3. Twitter
 4. Classmates
 5. LinkedIn
 6. Other _____
 7. I don't use a social network

3. If you do, when did you open a Facebook profile (estimate)?
 1. 0-1 year ago
 2. 2-3 years ago
 3. 3-4 years ago
 4. 5-or more years ago

4. Since you have been in college, being away from friends and family, do you feel your activity on Facebook increased?
 1. Yes 2. No

5. If you do, how many times did you check your Facebook yesterday (estimate by circling one)?
 1. 0
 2. 1-2
 3. 3-4
 4. 5-6
 5. 7 or more

3. Normally, what do you use Facebook for (circle all that apply)?
 1. Keeping in touch with friends, old and new
 2. Viewing status' of others
 3. Looking at pictures
 4. Posting what I am doing or feeling at the moment
 5. Playing games
 6. Other _____

4. While on Facebook, do you find trouble concentrating on other tasks (i.e. homework)?
 1. Yes 2. No
5. Have you ever tried to limit your Facebook use?
 1. Yes 2. No
6. Have you ever felt like you may be addicted to checking Facebook?
 1. Yes 2. No
7. Do you ever have a strong desire to check Facebook?
 1. Yes 2. No
8. Have you ever felt like you really needed to check Facebook?
 1. Yes 2. No
9. Is it hard to keep from checking your Facebook when a computer is accessible like?
 1. Yes 2. No
10. Did you find it hard to concentrate when you haven't checked your Facebook?
 1. Yes 2. No
11. How often do you check Facebook while doing homework?
 1. Never
 2. 1-3 times
 3. 4-6 times
 4. It's running the whole time
12. Did you feel more irritable when you do not check your Facebook?
 1. Yes 2. No
13. If you tried to limit or stop using Facebook, did you feel an urge to use it?
 1. Yes 2. No

14. Have you ever felt restless or anxious because you couldn't access Facebook?
 1. Yes
 2. No

15. Would you consider yourself dependent on Facebook (meaning, needing to check it at least once a day)?
 1. Yes
 2. No

16. If you are from another country outside the United States, how would you describe the use of Facebook?
 1. People use it often (meaning at least 50% of the people you know have a profile)
 2. People seldom use it (meaning less than 50% of the people you know have a profile)
 3. I am from the United States

17. Do the people you know frequently (3-4 times daily) check Facebook (i.e. friends, roommates)
 1. Yes
 2. No

18. What is your sex?
 1. Male
 2. Female

19. What is your grade level?
 1. Freshman
 2. Sophomore
 3. Junior
 4. Senior

20. What is your ethnicity?
 1. Latino/Hispanic
 2. Asian
 3. Caucasian (white)
 4. African American
 5. Native American
 6. Other

Appendix C

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete a short questionnaire asking about involvement with the online social network, Facebook . I understand that I should be able to complete this project within 15 minutes. I am aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the LPP office, a completed parental consent form that allows me to give consent as a minor.

_____ Date: _____

(Signature of participant)

_____ Date: _____

(Signature of researcher obtaining consent)

Appendix D

Thank you for participating in my study. The questionnaire was used in order to determine people's dependency on the online social network, Facebook. The deception of informing participants that Facebook was being terminated by the government was used in order to produce an environment for the participant of how their livelihood would be altered due to the termination of such a popular online social network. Moreover, this deception allowed for the potential of obtaining truthful responses by the participant. The story told prior to the investigation, along with the governmental document, was completely false. They were only used in order to provide a sense that Facebook had actually been shut down.

Please note that I am not interested in your individual results; rather, I am only interested in the results of a large group of Facebook users, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. My contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact me and I will make it available to you at the completion of this project.

Thank you again for your valuable contribution to this study.

Principal Investigators:

John R. Gatermann (JRG985@lionmail.lindenwood.edu)

Supervisor:

Dr. Michiko Nohara-LeClair 636-949-4371 (mnohara-leclair@lindenwood.edu)

Appendix E

The New York Times

Thursday 11th March 2010

Government says Facebook must go!

Today, politicians passed a vote to terminate Facebook due to privacy infractions. Even though they would not go into detail on the basis for closing the social online network, they provided a statement claiming that Facebook has been temporarily shut down due to lack of privacy and security measures.

During this hiatus, the government will work with Facebook management to help improve security for Facebook users. Recent lawsuits brought against the network have led to the termination of the website and has caused governmental officials to step in.

In the midst of the sudden closure, publicists are questioning how the Facebook community is going to react to the news. Nevertheless, critics suggest that this sudden closure may influence people to retreat back to prior online social networks.

John Peters

Associated News & Press

2010

Appendix F

Researcher: “Thank you for coming to participate in this studying. During this session, I will be inquiring about the online social network, Facebook. Due to the recent closure of Facebook, I was trying to investigate how people’s lives would be affected.”

Participant: “Facebook shut down?”

Researcher: “Yes. The government temporarily terminated Facebook on the basis that their privacy and security measures are inadequate. They said that the recent lawsuits brought against the network have caused politicians to investigate the security of the network. So, I am leading an investigation to see how this may affect the lives of their subscribers. This brings me to the question in regards to if you have a profile established with Facebook?”

Participant: “Yes I do.”

Researcher: “Okay, well please fill out this inform consent form stating that you will partake in this survey study pertaining to the social network, Facebook. Remember, if at any moment you need to terminate this study, you may do so without prejudice. Furthermore, you will still be entitled to receive full credit for this study even if you fail to complete the survey. Do you have any questions?”

Participant: “No.”

Researcher: “Okay, then let’s begin.”

Participant takes the survey.

Researcher: “Okay, now that you are complete, please insert your survey into this closed container. Now, I would like to take a few minutes to discuss with you about the true nature of this study. First of all, the statement I made about Facebook being temporarily terminated was completely false along with the document I provided. I used this deception tactic in order to create an environment for the participant that made him/her question their true behavior on Facebook.

In all actuality, this study was conducted in order to gain a sense of how dependent people are on the social network. Furthermore, the questions on the survey were facilitated to test this aspect of dependency rather than question how lives would be changed if Facebook had been terminated.

Please be aware, that all names and other information pertaining to you as an individual are omitted from this study and your privacy will be handled with the upmost regard. Your answers to the survey questions will be calculated only as part of aggregate data.

Do you have any concerns or questions about the study or deception tactic used in this study?

No, okay well here is a feedback letter informing you of all the information I just mentioned to you.

Lastly, please do not inform any other student of the nature of this study because it may skew my results. It is very important that you protect the anonymity of the study in order to achieve valid results. Also, if you wish to know the results of the study, please email me and I will gladly make sure to inform you of the results.

Thank you for your time and participation.”