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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

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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.

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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:

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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.