PRESENTATION DESIGN AND RETENTION

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ABSTRACT

Organizations often utilize presentations at meetings to disseminate standardized knowledge that organizations desire for their employees to retain. Thus, the way that these presentations are designed is likely to be important, in that they should be designed in such a way to maximize the retention of information. The current research explored three different presentation designs often used for formal information dissemination intended to distribute standardized knowledge in organizations: Infographics, concise PowerPoint, and extensive PowerPoint. An ANOVA indicated a slight but not statistically significant difference in the retention of information across the different presentation designs. It was concluded that using a visual presentation helps with the retention of information, regardless of the design of presentation.

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Introduction

Organizations communicate information to their employees in several ways, and for several purposes. Organizations may use informal information dissemination tactics, such as emails and simple conversations. For formal information dissemination, organizations often utilize presentations at meetings. Such communication is usually intended to disseminate standardized knowledge that organizations desire for their employees to retain. Thus, the way that these presentations are designed is likely to be important, in that they should be designed in such a way to maximize retention of information. Such presentations can be designed using any number of principles, and one popular presentation design principle is Infographics. There are many ways an organization can use Infographics to portray information. Infographics are equally effective when used for external communication in the business world, as well as when used to enhance internal communication (Smiciklas, 2012).

One of the main purposes of internal communication in organizations is training and development. Training within an organization is defined as a "systematic acquisition of skills, rules, concepts, or attitudes that result in improved performance in another environment" (Goldstein & Ford, 2002, p.1). Although many different types of training exist, the present study was performed in the context of new employee orientation. This vital form of training utilizes 2% of most training budgets and makes up 8% of the time organizations spend training their employees (Bassi & Van Buren, 1998).

Employee training can be performed in many ways, including classroom instruction with a lecture and discussion, like the learning environment commonly used for university

students. Although trainers may desire that the employees will retain all the information provided in the training session, most employees retain less than 30% of the information (Goldstein & Ford, 2002). To increase retention of information many trainers use similar approaches to classroom style, with lecture and visual aids. Moreno and Mayer (2002) found that the use of auditory information accompanied with a visual presentation significantly helped students comprehend and explain the information. Similarly, Blokzijl and Andeweg (2005) found that the use of PowerPoint in a learning environment significantly helped students retain information.

Because of the importance of ensuring that employees retain and understand as much information from training sessions as possible, the purpose of the current study is to examine different presentation styles such as PowerPoint and Infographics on retention of information.

Infographics

The use of Infographics to portray information in trainings, advertising, and education has increased in popularity. From the year 2010 to 2012 searches on how to create and use Infographics on web-based search engines has increased by 800% (Mazereeuw, 2015).

The design of Infographics uses principles of information design. The term information design refers to the visual format used to represent information; this may include visualizing data, processes, hierarchy, anatomy, chronology, and other facets (Lankow, Ritchie, & Crooks, 2012). In addition to Infographics, information design is used to design presentations for communicating information and data. Information visualization refers to the use of visuals aids, such as a picture or graph, to communicate specific knowledge. Examples

of information visualization include data visualization and visual cues to illustrate, differentiate, or to show hierarchy of information. Data visualization is a visual representation of data that is often used to portray a relationship in the data. Some of the more common forms of data visualization used are pie charts, bar graphs, and line graphs (Lankow, Ritchie, & Crooks, 2012).

Finally, one other form of information design consists of information graphics, also commonly referred to as an Infographic. Infographics are defined as visual cues used to communicate information. Most Infographics are multifaceted and contain explanations or insightful descriptions; for this reason, a chart is considered an Infographic. One concept often associated with the term Infographic is a specific type of Infographic called an Editorial Infographic. Editorial Infographics are often "characterized by illustration, large typography, and long, vertical orientation displaying an assortment of facts" (Lankow, Ritchie, & Crooks, 2012, p. 20). Thus, an Infographic does not have to "contain a certain amount of data, or possess a certain complexity, or present a certain-level of analysis… they can be as simple as a road sign … or as complex as a visual analysis of the global economy" (Lankow, Ritchie, & Crooks, 2012, p. 20). See appendix F, for an example of an infographic.

In organizations, Infographics may be used for demonstrating nine different types of information including: statistics, processes, ideas, chronology, geography, anatomy, hierarchy, relationships, and personality (Smiciklas, 2012). Several benefits for trainers to utilize an Infographic in their training have been outlined by Pappas (2016), including that Infographics offer a visual step-by-step task guide and can simplify complex concepts or ideas for the employees. Another benefit is an increase of information retained from the

training, and that Infographics can engage distracted corporate learners. Infographics and visual designs are great for catching a person's attention, which is necessary to learn and store information. Bateman et.al. (2010), found that a more illustrative approach to presentation design benefits information recall significantly. This study measured the participants' immediate recall and long-term recall of information when the information was presented in a visual design versus Infographics. Participants experienced notable improvements in the information they could recall in the long-term recall when the information was presented as an Infographic instead of as a visual design. Nigel Holmes (1984) is widely known for adding visual imagery to help convey a specific message, and making information more memorable by displaying the information in a unique and distinctive way. An Infographic would be considered distinctive and therefore would help the retrieval of information due to the distinctiveness effect. The distinctiveness effect states that a person will remember things that are unique or distinctive, which could affect the encoding of the information, which would overall aid in the retrieval of the information (Waddill & McDaniel, 1998).

PowerPoint

While Infographics have been found to aid in recall, other research suggests that a simpler style of communication may be more effective. Edward Tufte (2003) and Steven Few (2011) found that "chartjunk" or the use of unnecessary graphic elements that do not actually contribute information was more distracting than useful. Edward Tufte (2003) found it would be best to use a concise visual aid, if using one at all. One example of a concise way to present information is the "6x6 rule". In a presentation designed using the 6x6 rule, each

slide contains no more than 6 rows of information with only 6 words in each row. The recommendation for using the number 6 is based on the idea that humans are limited in the amount of information they can receive, process, and remember. Edward Tufte (2003) and Steven Few (2011) created the 6x6 rule based on the idea proposed by Miller (1956), that the capacity of human information processing is seven pieces of information, plus or minus two.

Research examining the effectiveness of the 6x6 rule (Blokzijl & Andeweg, 2005) found that the 6x6 PowerPoint presentations were not as effective as more extensive text slides. In their study, the extensive text slides contained text that was word-for-word what the lecturer was saying. Thus, these slides contained more words and the presentation required more slides than the 6x6 PowerPoint, which just consists of the 6 bullet points and has fewer slides. Blokzijl and Andeweg (2006) suggested that text slides were more effective because visualizations may obstruct learning by overloading the short-term memory.

Because of the equivocal findings in the research literature, the present study is designed to compare two different presentation designs: a 6x6 design and an Infographic, against a control group, to determine if presentation design affects retention of information. Thus, the following research question was explored:

> RQ: Does the visual design of a presentation impact the retention of information?

Personality

Personality could also provide an explanation for any possible difference in retention of information during the presentation of information, in that people with certain personality

traits might respond better to certain presentation design styles. While there is no research directly examining the role of personality and retention based on visual design, the research on learning styles may inform this area. In research examining students in medical school, researchers Ferguson, James, and Madeley (2003) found that personality and learning styles were positively correlated with academic success. Additionally, Farsides and Woodfield (2003) found that openness to experience and learning styles were positively correlated with academic success. Alternatively, Busato, Prins, Elshout, and Hamaker (2000) found a significant correlation with only conscientiousness and openness to experiences and academic success. Futhermore, research conducted on undergraduate students indicated personality was responsible for 14% of variance in the grade point average (Komarraju, Karau, Schmeck, & Avdic, 2011). Based on the previous research examining personality and learning styles, personality was measured in the present study to determine if it is related to differences in retention, based on presentation design. It was hypothesized that:

> H: Personality will moderate the relationship between retention of information and presentation design.

METHODS

Participants

The participants in this study consisted of 115 undergraduate students at Angelo State University. The participants voluntarily completed the survey for extra course credit. Of the 115 participants 104 were females, 10 were males, and 1 choose not to disclose that information. The participants' ages ranged between 18-35 years old, the mean age was 20.38 with a standard deviation of 3.36. The participants were asked to self-identify their ethnicity; 71 self-identified as Caucasian or white, 31 self-identified as Latino/ Hispanic, 1 self-identified as Asian/ Pacific Islander, 9 self-identified as Black/ African American, 2 self-identified as Native American. Then the participants were asked to indicated their classification, in which 38 were freshmen, 28 were sophomores, 32 were juniors, and 16 were seniors. The participants were then asked to indicate their declared major, 89 were Education majors, 12 were psychology majors, 4 were nursing majors, 1 was an Exercise Science major, 1 was undeclared, 5 were Interdisciplinary Studies, and 1 was a History major. The participants either received the word-for-word presentation (48), the 6x6 presentation (30), or the infographic presentation (37).

Procedure

Participants were in a group classroom setting (the smallest class had 24 students and the largest class had 40 students) all the students in the classroom received one of the

following presentation design conditions: word for word PowerPoint presentation, 6x6 design PowerPoint presentation, or an Infographic. The participants were first given an

informed consent form and told that by signing the consent form they understood and agreed to allow their answers and information to be used in this study. If the participant agreed to participate then they were asked to sign the consent form and were then given a packet on which they wrote their unique student ID number. Inside the packet were a demographics questionnaire to collect information regarding their age, ethnicity, gender, university major, university minor, and previous education environment. After participants completed the demographic sheet, they were asked to fill in the provided fill-in-the-blank note sheet throughout the presentation.

Next, the researcher gave the presentation, which included all the information from the note sheet, while participants watched the presentation and completed the note sheet. Completing the note sheet served as an opportunity for participants to rehearse the information before completing the quiz. After the presentation was complete, the participants were given time to ask any questions about the provided stimuli and could review the information briefly before the packets were collected. Then the packets were collected and another packet with a page for the participant's unique student ID number, and a quiz over the information in the presentation was administered.

After one month, the researcher returned to the same classrooms and had the participants complete a quiz over the information again. Then the participants were asked to complete the Big Five Inventory personality assessment. Upon completion of the survey, the participants were debriefed and thanked, and their information was matched to their original information collected and then the information was recoded and their unique student ID numbers were shredded.

Materials

Presentation Stimuli. The presentation stimuli consisted of 3 different visual design presentations about a hypothetical organization. The hypothetical organization was “Heart of Medical Consulting”. Participants assumed the role of a new employee at this organization, and the presentation was described as their new-employee orientation upon joining the organization. The information provided in the presentation included a mission statement, vision statement, history of the organization, the status of the organization, and an organizational chart. All 3 presentations included the same basic information, but they used three different design principles, as described below. Participants in all groups received a note-taking sheet in which they could fill in the blanks of important information from the presentation.

The control group received the information using an extensive PowerPoint presentation with one of the recommended blue, black and white designs provided by Microsoft. The PowerPoint presentation in the control group had the information from the fill-in-the-blank handout sheet word-for-word on the PowerPoint. See Appendix D for example slides from this presentation.

The 6x6 group (concise PowerPoint design) received the information using the same recommended blue, black and white designs provided by Microsoft as the control group. The PowerPoint presentation in the 6x6 group had the same information from the fill-in-the-blank handout sheet in the same order as the control group, although participants only received the information in a summarized form with only 6 words per row and only 6 rows per slide. See Appendix E for example slides from this presentation.

The Infographic group only viewed 1 Infographic which contained all the information from the fill-in-the-blank handout sheet. The Infographic was designed with the same colors as the control group and 6x6 groups (blue, black, and white). The Infographic included a heartbeat with a heart in the middle. On the left side of the heart, the heart beat was used to demonstrate the timeline of the organization. On the right side of the heart, the heart beat was used to demonstrate the organizational structure. The title of the organization and the acronym of the organization were placed in the middle of the heart. The top of the Infographic included the organizations mission statement and vision statement. See Appendix F for the Infographic.

Participants in all groups were given the fill-in-the-blank notes page to utilize throughout the presentation. The participants were given a quiz directly after receiving the stimuli and then again after one month to check recall and recognition memory over the information provided during the presentation.

Personality. To measure personality participants received the Big Five Inventory. The Big Five Factors include five different dimensions of personality originally designed by Goldberg (1993). The five factors of personality include: extroversion, agreeableness, openness to experience, conscientiousness, and neuroticism. The Big Five Inventory that was utilized in the current study is a modified version consisting of 44 items (John & Srivastava, 1999). The questionnaire requires participants to answer questions on how they view themselves using a 5 point Likert scale that is anchored with 1 representing strongly disagree and 5 representing strongly agree. The following are examples of the questions used to measure the different factors of personality in the Big Five Inventory: an example of

extroversion is “I see myself as someone who is talkative,” an example of agreeableness is “I see myself as someone who is helpful and unselfish with others,” an example of openness to experience is “I see myself as someone who is curious about many different things,” an example of neuroticism is “I see myself as someone who gets nervous easily,” an example of conscientiousness is “I see myself as someone who does a thorough job.”

RESULTS

Pilot Study

To ensure the quiz was accurately testing the participants' retention of the information provided during the orientation, a pilot test was performed in which (6) participants took the test without receiving any of the information provided in the orientation. All of the information used in this study was created and designed for the study and was not based on any factual information. Thus, this pilot study was not measuring retention; it was only measuring how people responded to the quiz questions if they had not received the stimulus information. This analysis revealed the likelihood of guessing correct answers by chance. The questions used in the study included 5 multiple choice questions, 2 fill in the blank questions, and 5 true or false questions. The orientation quizzes with the actual questions used in the study are located in Appendix G.

For the pilot study, each type of question was analyzed separately to look at the likelihood of receiving a correct answer for each question type (multiple choice, fill-in-the-blank, and true or false questions), in addition to examining performance on the quiz in its entirety. The results for the pilot test revealed that the number of correct answers with all 12 questions was M= 3.33. The true and false questions had the highest number of correct answers M=2.0, but when the results were analyzed without the true and false questions, the number of correct answers was M= 1.33. To assess the differences between the means of the number of correct answers with the true and false questions and of the number of correct answers without the true and false questions the means were converted into percentages. The

percentage of correct answers with all 12 questions was M = 27.78%. The percentage of correct answers without the true and false questions was M = 19.05%. A table with the results for each question is in appendix A.

Presentation Design

In order to determine the interrelationships among the study variables, a bivariate correlation analysis was performed (See Table 1). None of the personality variables were significantly related to the dependent variable, thus the study's hypothesis was not supported. Therefore, personality was not included in further analyses as a covariate, and it was determined that the analysis for testing the research question would be an analysis of variance (ANOVA), rather than an analysis of covariance (ANCOVA).

Table 1

Bivariate Pearson's Correlations among the Main Variables of the Study

		1	2	3	4	5	6
1	Correct Answers	.096					
2	Extraversion	.050	.034				
3	Agreeableness	.026	-.026	.056			
4	Conscientiousness	-.125	.022	.077	.377**		
5	Neuroticism	.112	-.167	-.198*	-.349**	-.492**	
6	Openness	.017	.023	.228*	.063	-.068	-.082

After performing a preliminary data screening to determine that the variables were normally distributed, with no extreme outliers, a one-way analysis of variance (ANOVA)

was conducted in order to assess whether the design of the presentation influenced the amount of information retained (see Table 2). Presentation design (Infographic, 6x6, or Control) was used as the independent variable. The dependent variable was the number of correct answers in the test provided over the information in the presentation after one month. The main effect for presentation design was not significant, $F(2, 112) = .627$, $p > .05$. See Table 3 for group means and standard deviations.

Table 2

One-way ANOVA Table for the Number of Correct Answers on the Orientation Quiz

Presentation Design	*df*	*SS*	*MS*	*F*	*p*
Between groups	2	4.72	2.36	.627	.536
Within Groups	112	421.46	3.763		
Total	114	426.17			

Table 3

Means and Standard Deviations for the Number of Correct Answers on the Orientation Quiz

Presentation Design	*N*	*M*	*SD*
Extensive PowerPoint	48	6.50	1.66
Concise PowerPoint	30	6.90	2.11
Infographic	37	6.92	2.13
Total	115	6.74	1.93

DISCUSSION

The current research examined whether there were differences in the retention of information based on the presentation design. The results of this study indicated that presentation design did not have a statistically significant effect on the amount of information retained.

Although not statistically significant, results from the present study indicated slightly higher retention for participants who viewed the Infographic, followed by participants in the concise PowerPoint group, with the extensive PowerPoint group scoring the lowest in retention. Research by Savoy & Salvendy (2009) found that the information is not "chartjunk" if the pictures and words pertained to the information being presented. Previous research that determined that too many visuals interfered with information retention (Tufte, E., 2003; Few, S., 2011; Blokzijl & Andeweg, 2005) may have used pictures or visual designs that were somewhat unrelated to the information presented. If those unrelated graphics were then compared to slides that only contained words related to the information, then the lack of association between the visual design or the picture with the information being presented may explain why those studies failed to indicate that visual designs helped in the retention of information.

Furthermore, the results found in Bateman et.al. (2010) indicated significantly higher recall when asked to identify the information in Infographic than the recall for the visual design. The results found in that study could be explained in several ways, including

encoding specificity. Bateman (2010) conducted the study testing long-term retention of information by asking the participants to retrieve the information in the same way the information had been encoded, such that participants encoded the information based on an Infographic, and then when they were asked to recall the information, they labeled missing information on an Infographic form. Thus, the higher recall for Infographics in the Bateman 2010 study could be could be related to what Tulving and Thomson (1973) referred to as the encoding specificity principle. The encoding specificity principle states that the information studied is better recalled in the same context in which the information was encoded.

The Bateman et.al. (2010) study indicated a higher long-term recall for information presented via Infographics, while the results from the present study demonstrated similar retention of information among the three groups. For the present study, the retention of participants who viewed the Infographic was measured using a paper-and-pencil quiz that was not graphic in nature. Thus, when the information was retrieved, it was in a different form. This implies that an Infographic may be more useful if the training asks the participant to retrieve information the same way the information was encoded.

Teacher expectation theory might be another potential explanation for the presence of statistically significant differences in the retention of information in previous studies, whereas the present study did not obtain significant results. Teacher expectation theory states that students/participants will perform around the level that the teacher/experimenter expects them to perform. So, perhaps the researchers of the previous studies were more enthusiastic and expected the participants to perform at a certain level, and then the participants performed near that expected level due to the Pygmalion effect. The Pygmalion effect was a

term coined by Rosenthal & Jacobson (1968) in which they found that the students' performance was directly affected by the teachers' expectations. This leads to a confirmation bias, which is an error that can occur when a researcher has formed a hypothesis or expectations about results and then behaves in a way during the research process (often unconsciously), such that the hypotheses are confirmed.

Limitations

The results of the current study suggest the visual design of the information does not have much of an impact on the retention of information in a new employee orientation setting. While the current study may have important implications for how presentations are designed, several limitations should be noted. First, the study used a small sample of college students from Angelo State University, potentially limiting the amount of statistical significance. Furthermore, the sample used in the study was a convenience sample, and over 90% of the participants were female. The number of female participants in the study may allow for other potential moderators including: women may respond differently to a female presenter, and women may respond differently to different visual designs. Future research should consider using a larger sample size and consider collecting a more diverse participant pool.

Another, related limitation is that the participants may not have had the same level of motivation to retain the information provided in the new employee orientation presentation, which they would if they were hired at a new company. This lack of motivation could have impacted the amount of attention participants paid during the encoding of the information, leading to a lower ability to retrieve the information. Future research may want to consider

collecting data from training programs at real organizations where employees are motivated to learn the information being presented during the orientation. Future research may also want to consider using stimuli that require the participants' attention to the stimuli and exposure to the stimuli for a longer amount of time; to test if the amount of time delivering information using different types of visual design impacts the retention of the information. A third limitation of the present study is that it utilized a stimulus and measure that have not been previously tested or used before. The stimulus and measure were specifically created for this study to control the participants' amount of rehearsal and access to the information. The Orientation Quiz that was created to measure the retention of information from the stimulus presentation included several different types of questions to examine any amount of retention of information: multiple choice, fill-in-the-blank, and true/false. These different types of questions used in the Orientation Quiz use different memory processes (such as recognition vs. recall), and they have different probabilities of selecting the correct answer by chance (e.g., 1 in 4 for the multiple choice questions, as compared to 1 in 2 for the true/false questions). An exploratory analysis was conducted on the participants' performance on the different types of questions, and there were no significant differences between groups for any of the question types. Thus, ultimately the number of correct answers on the quiz was collapsed across all three different question types, in order simplify the description of the results of the study. Future research should focus on using just one type of question, and a more extensive set of questions, in order to control error variance in the dependent measure.

The fourth limitation in the current study is that it did not measure the participants' short-term retention of the information. Instead, the present study measured longer-term retention after one month. The decision to measure the retention of information after one month is based on the study conducted by Bateman et.al. (2010). The study conducted by Bateman et.al. (2010) did not find statistically significant results in the immediate retention of information, thus the immediate retention of information was not the primary focus of the current study. The study conducted by Bateman et.al. (2010) choose one month to be considered long-term retention to allow some decay of retention to occur. Thus, any differences in decay across the different presentation designs could be compared. Future research may want to examine the participants' retention of information after longer or shorter intervals in order to compare if the different presentation designs exhibited different test scores across the different time periods.

Concluding Remarks

The current research examined whether the presentation design had an impact on the retention of information using a hypothetical scenario of an employee orientation. The findings indicated a slightly higher retention of information for an infographic than for a concise or extensive PowerPoint. The concise PowerPoint had a slightly higher retention of information than the extensive PowerPoint, and the extensive PowerPoint had the least retention of information. Although, the difference in retention of information was not enough to be statistically significant. The findings in this study indicate it may be more important to focus on the information provided during the presentation and use a presentation design the presenter is comfortable with.

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LIST OF TABLES

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APPENDIX A

Means and Standard Deviations for the Number of Correct Answers on the Orientation Quiz with Pilot Study

		Pilot	Control	6x6	Infographic	Total
Question 1	Mean	0	.75	.87	.84	.81
	Standard Deviation	0	.44	.35	.37	.40
Question 2	Mean	.33	.67	.37	.54	.55
	Standard Deviation	.52	.48	.49	.505	.50
Question 3	Mean	.33	.88	.87	.95	.90
	Standard Deviation	.52	.33	.35	.23	.31
Question 4	Mean	.17	.15	.40	.24	.24
	Standard Deviation	.41	.36	.48	.50	.43
Question 5	Mean	.50	.63	.67	.59	.63
	Standard Deviation	.55	.49	.48	.50	.49
Question 6	Mean	.00	.23	.30	.35	.29
	Standard Deviation	.00	.43	.47	.48	.45
Question 7	Mean	.00	.48	.67	.73	.61
	Standard Deviation	.00	.51	.48	.45	.49
Question 8	Mean	.17	.31	.40	.35	.35
	Standard Deviation	.41	.47	.50	.48	.48
Question 9	Mean	.83	.83	.90	.92	.88
	Standard Deviation	.41	.38	.31	.28	.33
Question 10	Mean	.50	.56	.57	.46	.53
	Standard Deviation	.55	.50	.50	.50	.50
Question 11	Mean	.17	.81	.83	.78	.81
	Standard Deviation	.41	.39	.38	.42	.40
Question 12	Mean	.33	.21	.07	.16	.16
	Standard Deviation	.516	.41	.25	.37	.37
Correct (All)	Mean	3.33	6.50	6.90	6.92	6.74
	Standard Deviation	1.97	1.66	2.11	2.12	1.93
Correct (w/out T/F)	Mean	1.33	3.78	4.13	4.24	4.02
	Standard Deviation	1.03	1.24	1.50	1.46	1.39
% Correct (All)	Mean	27.78	54.17	57.50	57.66	56.16
	Standard Deviation	16.38	13.86	17.56	17.71	16.11
% Correct (w/out T/F)	Mean	19.05	53.87	59.05	60.61	57.39
	Standard Deviation	14.75	17.74	21.46	20.87	19.84

APPENDIX B

Demographics Sheet

DEMOGRAPHICS SHEET
PRESENTATION DESIGN AND RETENTION

Please **do not** write your name on this form! The information collected on this form will allow us to provide an accurate description of the sample.

For each of the following items, please select the *one* response that is most descriptive of you and fill in the blank area(s) as appropriate.

Gender:
□ Female □ Male

Age: _____

Ethnicity:
□ Asian or Pacific Islander
□ Asian Indian
□ Black/African American (non-Hispanic)
□ Caucasian/White
□ Native American
□ Latino/Hispanic
□ Puerto Rican
□ More than one race (specify): _____

Year in College:
□ Freshman □ Sophomore □ Junior □ Senior □ Post-Graduate

Major(s): _____

Minor(s): _____

Previous Education Environment:
□ Public School
□ Private School
□ Home School
□ Boarding School
□ Other _____

APPENDIX C

New Employee Orientation Notes Page

Heart Of Medical Consulting

New Employee Orientation

Notes page

Here at HMC it is our mission to provide *effective* and high quality individuals into critical positions that will assist in *quality*, efficiency and *risk* issues within the healthcare environment.

The History of HMC

Heart of Medical Consulting also known as *HMC* was founded by *Patricia Jordan* in 1998.

In *1998* Patricia Jordan decided to leave her nursing management position in order to pursue her vision to find the ideal healthcare professionals that would provide a *permanent positive change* within the *healthcare environment*. HMC originally consisted of only *4* employees, and over the next 6 years HMC grew exponentially consisting of *256* interim nurses placed within health care facilities in over 20 different states.

In *2008* HMC signed the company's first international placement contract in Wellington, *New Zealand.*

HMC Today

HMC now consist of over *700* employees that are located in healthcare facilities all over the United States and in *13* different countries. The HMC Headquarters is now located *Hilo, Hawaii*. There are now *25* satellite recruitment offices located across the *United States of America*.

Important People at HMC

The CEO at HMC is: *Patricia Jordan*

The Vice President of Administration at HMC is: *Dominic Rodriguez*

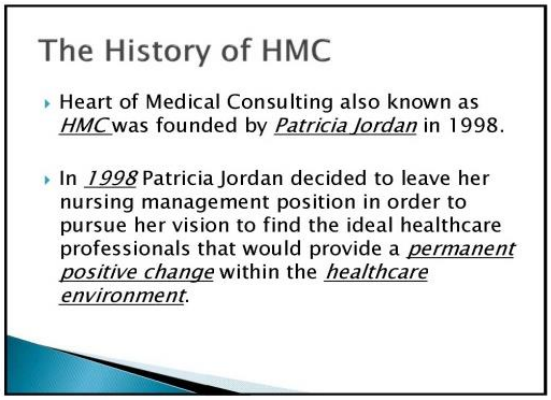
The Vice President of Operations at HMC is: *Elizabeth Davis*

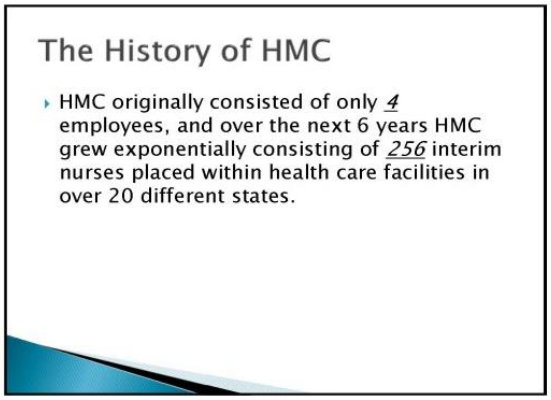
The Vice President of Marketing and Research at HMC is: *Brian Miller*

The Director of Human Resources at HMC is: *Simon Clark*

APPENDIX D

Extensive PowerPoint Presentation





The History of HMC

- In *2008* HMC signed the company's first international placement contract in Wellington, *New Zealand.*

HMC Today

- HMC now consist of over *700* employees that are located in healthcare facilities all over the United States and in *13* different countries. The HMC Headquarters is now located *Hilo, Hawaii*. There are now *25* satellite recruitment offices located across the *United States of America*.

Important People at HMC

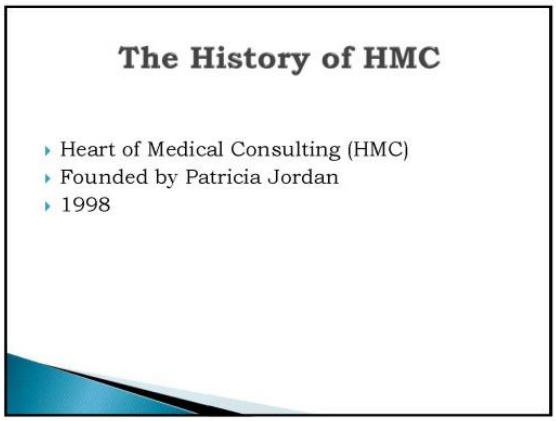
- The CEO at HMC is: *Patricia Jordan*
- The Vice President of Administration at HMC is: *Dominic Rodriguez*
- The Vice President of Operations at HMC is: *Elizabeth Davis*

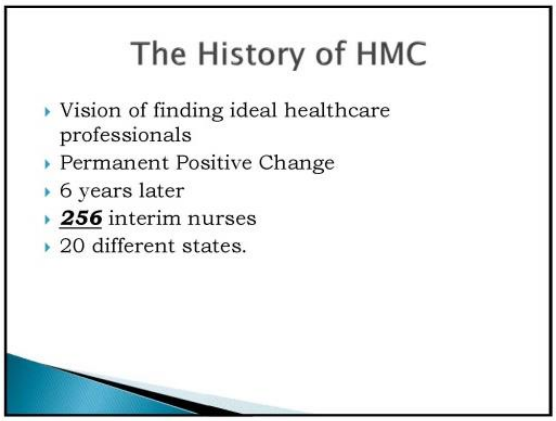
Important People at HMC

- The Vice President of Marketing and Research at HMC is: *Brian Miller*
- The Director of Human Resources at HMC is: *Simon Clark*

APPENDIX E

Concise PowerPoint Presentation





The History of HMC

- 2008
- International placement contract
- Wellington, New Zealand.

HMC Today

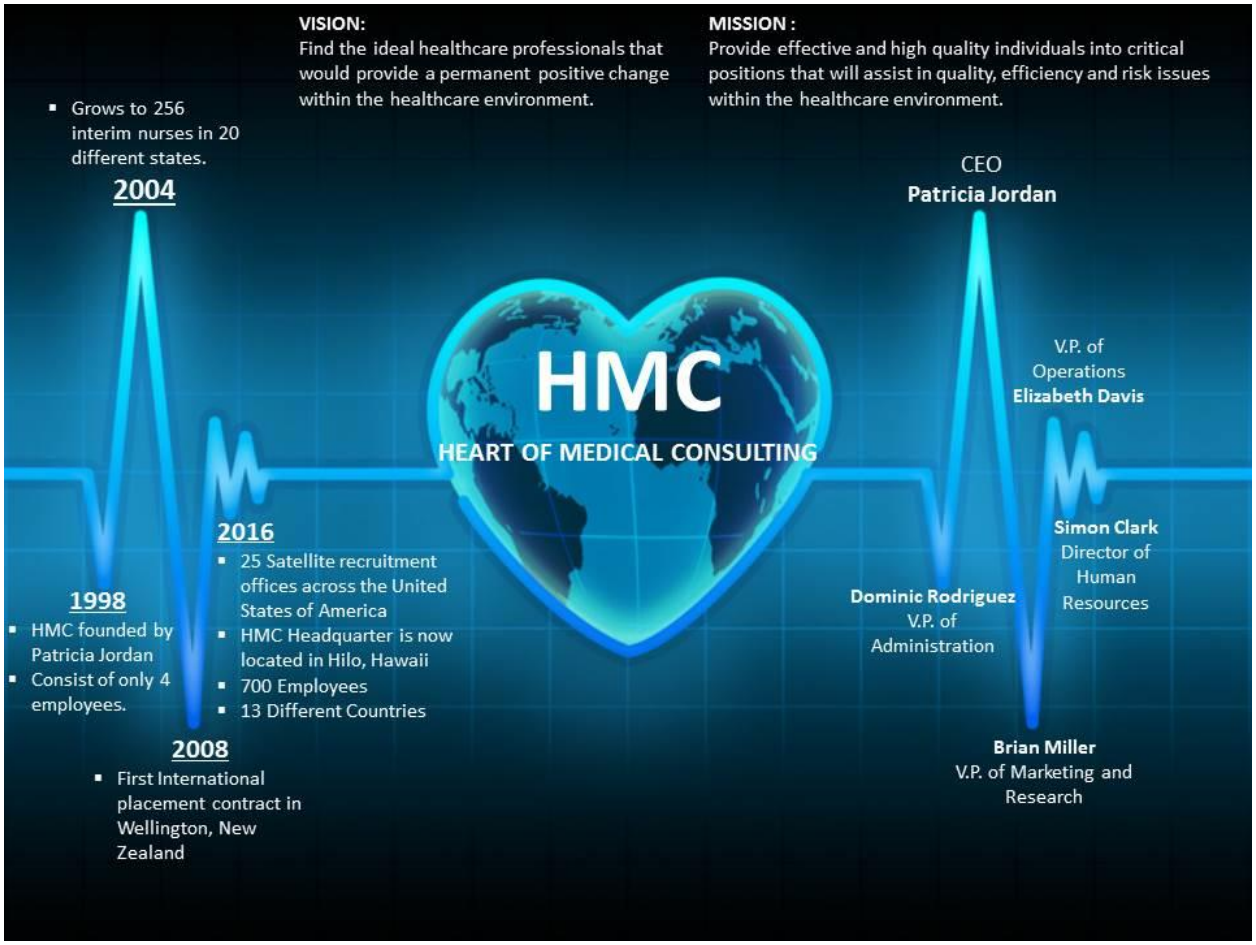
- 700 Employees
- 13 different countries
- Headquarters is now located Hilo, Hawaii
- 25 satellite recruitment offices

Important People at HMC

- CEO: Patricia Jordan
- V.P. of Administration: Dominic Rodriguez
- V.P. of Operations: Elizabeth Davis
- V.P. of Marketing and Research: Brian Miller
- Director of Human Resources: Simon Clark

APPENDIX F

Infographic



APPENDIX G

New Employee Orientation Quiz

Heart Of Medical Consulting

New Employee Orientation

Quiz

(Please circle the correct answer)

1. What does the acronym HMC stands for?

   A. Healthy Medical Consulting
   B. Heart of Medical Consulting
   C. Health in Medical Consulting
   D. Helping Medical Consulting

2. What year was HMC founded?

   A. 1998
   B. 1967
   C. 2001
   D. 2008

3. Where was the first international placement contract?

   A. London, England
   B. Wellington, New Zealand
   C. Tokyo, Japan
   D. Moscow, Russia

4. Who is the Vice President of Operations at HMC?

   A. Simon Clark
   B. Patricia Jordan
   C. Brian Miller
   D. Elizabeth Davis

5. HMC has healthcare facilities all over the United States and in _____ different countries?

   A. 8
   B. 25
   C. 13
   D. 40

(Please fill in the blank)

6. HMC started off with _____ employees. (4)

7. _____ is the founder and CEO at HMC. (Patricia Jordan)

Heart Of Medical Consulting

New Employee Orientation

Quiz

(Please circle either True or False)

8. True or **False**: HMC's mission is to provide efficient and high quality exercise programs within the healthcare environment.

9. **True** or False: The vision at HMC is to find the ideal healthcare professionals that would provide a permanent positive change within the healthcare environment

10. **True** or False: Simon Clark is the Director of Human Resources at HMC

11. **True** or False: The HMC headquarters are now located in Hilo, Hawaii.

12. True or **False**: HMC now consist of over 1,000 employees that are all over the United States of America.

APPENDIX H

Big Five Inventory

Scale:

The Big Five Inventory (BFI)

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree Strongly
1	2	3	4	5

I see Myself as Someone Who...

____1. Is talkative

____2. Tends to find fault with others

____3. Does a thorough job

____4. Is depressed, blue

____5. Is original, comes up with new ideas

____6. Is reserved

____7. Is helpful and unselfish with others

____8. Can be somewhat careless

____9. Is relaxed, handles stress well

____10. Is curious about many different things

____11. Is full of energy

____12. Starts quarrels with others

____13. Is a reliable worker

____14. Can be tense

____15. Is ingenious, a deep thinker

____16. Generates a lot of enthusiasm

____17. Has a forgiving nature

____18. Tends to be disorganized

____19. Worries a lot

____23. Tends to be lazy

____24. Is emotionally stable, not easily upset

____25. Is inventive

____26. Has an assertive personality

____27. Can be cold and aloof

____28. Perseveres until the task is finished

____29. Can be moody

____30. Values artistic, aesthetic experiences

____31. Is sometimes shy, inhibited

____32. Is considerate and kind to almost everyone

____33. Does things efficiently

____34. Remains calm in tense situations

____35. Prefers work that is routine

____36. Is outgoing, sociable

____37. Is sometimes rude to others

____38. Makes plans and follows through with them

____39. Gets nervous easily

____40. Likes to reflect, play with ideas

____41. Has few artistic interests

____20. Has an active imagination

____21. Tends to be quiet

____22. Is generally trusting

____42. Likes to cooperate with others

____43. Is easily distracted

____44. Is sophisticated in art, music, or literature

Scoring:

BFI scale scoring ("R" denotes reverse-scored items):

Extraversion: 1, 6R, 11, 16, 21R, 26, 31R, 36
Agreeableness: 2R, 7, 12R, 17, 22, 27R, 32, 37R, 42
Conscientiousness: 3, 8R, 13, 18R, 23R, 28, 33, 38, 43R
Neuroticism: 4, 9R, 14, 19, 24R, 29, 34R, 39
Openness: 5, 10, 15, 20, 25, 30, 35R, 40, 41R, 44

ANGELO STATE UNIVERSITY
College of Graduate Studies
Institutional Review Board

9/15/2016

Dr. Cheryl Stenmark
Dept. of Psychology, Sociology, & Social Work
Angelo State University
San Angelo, TX 76909

Dear Cheryl:

Your student, Cortney Parkhurst, proposed project titled, "Presentation Design and Retention" was reviewed by Angelo State University's Institutional Review Board for the Protection of Human Research Subjects in accordance with federal regulations 45 CFR 46.

This protocol was approved for one year effective September 15, 2016, and it expires one year from this date. If the study will continue beyond one year, you must submit a request for continuation before the current protocol expires.

The protocol number for your approved project is #STE-091516. Please include this number in the subject line of in all future communications with the IRB regarding the protocol.

Sincerely,

Teresa Hack, Ph.D.
Chair, Institutional Review Board