11-24-2013

Learning styles and gendered traits

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Recommended Citation
Learning styles and gendered traits

Abstract
The present study examines male and female learning style preferences, as identified by the Learning Style Inventory Version 2 (LSI-2), as well as gender role expression, as identified by the Bem Sex Role Inventory Short Form (BSRI-SF). Psychologists and sociologists alike study what are believed to be sex-based differences in human behaviors and traits. However, a major confounding factor in research may be gender role expression. If gender role expression were a confounding factor, then male versus female research findings would not apply to people unless they are congruent with sex-based stereotypes.

One of the objectives of the present study (female N = 44, male N = 42) was to observe whether gender expression related to learning style preferences. The second objective was to examine whether sex related to learning style preferences. The final goal was to examine whether gender expression accounted for more of variance observed in learning style preferences than did sex. We observed that female participants were significantly more likely to be categorized as assimilative, that participants who were gender undifferentiated were disproportionately less likely to endorse assimilative learning style preferences, and finally, that gendered traits did account for more of the observed variance in learning style than did biological sex.

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LEARNING STYLES AND GENDERED TRAITS

A DISSERTATION

SUBMITTED TO THE FACULTY

OF

THE SCHOOL OF PROFESSIONAL PSYCHOLOGY

AT PACIFIC UNIVERSITY

HILLSBORO, OREGON

BY

K. JEANNE WEST

IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE

OF

DOCTOR OF CLINICAL PSYCHOLOGY

NOVEMBER 24, 2013
Learning Styles and Gendered Traits

The present study examines male and female learning style preferences, as identified by the Learning Style Inventory Version 2 (LSI-2), as well as gender role expression, as identified by the Bem Sex Role Inventory Short Form (BSRI-SF). Psychologists and sociologists alike study what are believed to be sex-based differences in human behaviors and traits. However, a major confounding factor in research may be gender role expression. If gender role expression were a confounding factor, then male versus female research findings would not apply to people unless they are congruent with sex-based stereotypes.

One of the objectives of the present study (female N = 44, male N = 42) was to observe whether gender expression related to learning style preferences. The second objective was to examine whether sex related to learning style preferences. The final goal was to examine whether gender expression accounted for more of variance observed in learning style preferences than did sex. We observed that female participants were significantly more likely to be categorized as assimilative, that participants who were gender undifferentiated were disproportionately less likely to endorse assimilative learning style preferences, and finally, that gendered traits did account for more of the observed variance in learning style than did biological sex.
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Introduction

The following is a review of literature on learning styles, gendered traits, and what is known about the interaction between gender schema endorsement and learning style in adult men and women.

Preferred learning styles differ between individuals. Therefore, an environment that is conducive to efficient learning for one person may be an ineffective environment for another person (Kolb, 2000). A person’s preferred learning style is influenced by a variety of factors. For example, an individual’s biological sex and gendered traits are potentially influential factors.

“Sex” refers to whether a person is anatomically male or female. Gender, on the other hand, is a socially-constructed set of traits. Words like “masculine” and “feminine” are used to describe gender. For example, in current United States culture, pink is seen as a feminine color and its use and presentation are often socially gendered. Although sex and gender are different characteristics, researchers have sometimes concluded that sex may be correlated with sets of gendered traits (Di-Dio, Saragovi, Koestner & Aube, 1996; Saurer & Eisler, 1990; Stafford & Dainton, 2000).

Male versus female differences in preferred learning style have been the topic of numerous previous studies, however, the relationship between an individual’s learning style and socially gendered traits remains largely unexamined. Research that examines the relationships between gendered traits and learning styles is essential because there is indication that gendered traits are in fact more influential on learning style than is a person’s sex (Severiens & Ten Dam, 1997).
Literature Review

The BSRI (Bem Sex Role Inventory Short Form) is commonly used to measure gender; it does so by measuring rates of femininity and masculinity. The traits that have traditionally been called “feminine,” may alternatively called “expressive,” and the traits that have traditionally been called “masculine” may be alternatively called “instrumental” in both the literature and in this review.

This relatively recent shift in terminology is a collective attempt to acknowledge that socially gendered traits should not be equated to male/female differences. The sets of traits that will be discussed have traditionally been referred to as “feminine” and “masculine” because these traits were identified as socially desirable based on the sexual anatomy (sex) of the person who expressed the traits. Although females are often encouraged to display and endorse expressive traits, and males are often encouraged to display and endorse instrumental traits, each group of traits could be personified within an individual who is male or by a person who is female. Therefore, biological sex is conceptually and functionally different from gender expression.

Recognizing Culturally Gendered Traits

Researcher Sandra Bem developed the BSRI, which is one of the most widely utilized instruments for measuring gendered traits (Canary & Hause, 1993). Bem (1981) viewed gender categories as nonlinear, and as two independent sets of traits: “masculine” (instrumental) traits, and “feminine” (expressive) traits. The BSRI was developed to measure each set of traits.

Since these sets of socially gendered traits are nonlinear, it is possible for a person to score as both instrumental and expressive, and it is possible for a person to score as neither instrumental nor expressive. People who are masculine (instrumental) as well as feminine (expressive) are categorized as androgynous on the BSRI, as demonstrated in the Figure 1 below, which is a replication of Bem’s
figure (1981, p. 16). People could also be categorized as feminine, masculine, or undifferentiated (having below median rates of both masculine and feminine traits).

Figure 1. BSRI categories based on participant scores for masculinity and femininity (Bem, 1981, p. 16).

The BSRI has twenty expressive traits, twenty instrumental traits, and twenty neutral traits. The twenty neutral traits were originally added to determine if test-takers were answering based on social desirability. However, there was dispute over whether the neutral traits functioned as they were intended to function, so those neutral traits are now considered redundant. A shorter form of the BSRI utilized in the current study does not include these neutral traits. BSRI test-takers are asked to score each trait on a scale of one to seven, one being “Never or almost never true,” and seven being “Always or almost always true” (Bem, 1981, p. 4).

According to Bem (1981), one of the reasons that the BSRI is unique is that it was designed to dually measure “femininity” and “masculinity” based on cultural definitions of what are desirable traits for women and men respectively. To determine which traits should be used by the BSRI, a list
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of hundreds of traits was presented to undergraduate students at Stanford University. Half of the student participants were asked to rate society’s desire for men to have each trait on a scale of one to seven, and the other half were asked to rate society’s desire for women to have the traits, instead of for men. Each group of raters included an equal number of males and females and the students rated traits as individual participants, not as a group. It is interesting to note that the original Stanford University undergraduate students who participated in the research by rating desirability of traits for males and females were in fact reporting their own perceptions of society’s desire for each trait. Traits that scored strongly as socially desirable for a specific sex were considered for use on the BSRI for determining masculinity and femininity levels (Bem, 1981).

As previously noted, an additional, shorter version of the BSRI was released a few years after the original, but all of the traits used on the shorter inventory were taken from the original version. Besides this, no alterations have ever been made to the BSRI since its creation. Bem (1981) does not seem to believe that rigid gender roles are healthy, and offers evidence that they are not. She also contends that “the BSRI appears to tap relatively enduring definitions of femininity and masculinity, culturally defined standards of sex-appropriate behavior that have not given way even in the face of a strong feminist critique in the society at large” (p. 23). Bem supports this statement with a study by Walkup and Abbott (1978) that replicated Bem’s trait selection procedures at a different university and found very similar results. However, more recent research indicates cultural definitions of which traits are desirable for men and for women seem to be changing and may be becoming more similar. In two later studies (Auster & Ohm, 2000; Holt & Ellis, 1998) the process of determining trait consistency of the BSRI was replicated, and in each study, fewer traits met the original qualifications for being culturally gendered.
That is, fewer of the BSRI’s traits still met the qualifications for being categorized as being significantly more socially desirable for a female or for a male to have. Holt and Ellis’s research (1998) on biases regarding traits that are desired for men and women demonstrated that the traits “childlike” and “loyal” no longer showed significant differences in mean desirability for men and women. All of the other traits, however, still met Bem’s original qualification criteria. Holt and Ellis concluded that the instrument maintained satisfactory validity. On the other hand, Auster and Ohm (2000) demonstrated that only eight of the 20 masculine traits still met original criteria for being considered masculine, while 18 of the 20 feminine traits still met criteria. The authors noted that their findings were inconclusive, and discussed how responses were different than they had been decades ago, yet the patterns in responses were consistent with traditional gender typing.

**Biological Sex and Gendered Traits**

Steiner-Pappalardo and Gurung (2002) tested to see if expressiveness was related to biological sex, and found no significant relationship between a participant’s sex and their level of expressive traits, as measured by the BSRI. Steiner-Pappalardo and Gurung’s study is one of the most recent on this topic, but it conflicts with some findings within the previous literature. While numerous researchers agree that biological sex does not correlate certain sets of gendered traits (Antill, 1983; Kurdek & Schmitt, 1986; Steiner-Pappalardo & Gurung, 2002), other literature does indicate a relationship between biological sex and certain sets of gendered traits (Di-Dio, Saragovi, Koestner, & Aube, 1996; Saurer & Eisler 1990, Stafford & Dainton, 2000). These studies, however, were conducted utilizing different samples, which may help account for the differences in the findings.

One popular theory in the field regarding gender expression is that the participants’ socialization is a major determining factor regarding each person’s gender schema (Bronstein, 2006; Leaper & Friedman, 2007). According to Socialization Theory, as infants and children, people are
shown distorted, gendering images and behaviors that they internalize and replicate, thus perpetuating the cycle of gendering the sexes. Gender-based socialization is present across various settings during a child’s development, including in educational settings, and could therefore determine how people must adapt to their learning environments.

**Trait Conformity, Attainment, and Use**

An additional factor is whether or not people conform to cultural ideals surrounding gender roles. Studies show that females who are highly sex-typed as measured by the BSRI have numerous disadvantages to females who are androgynous. Expressive females who are not androgynous are: less likely to be able to relate to and interact well with instrumental men (Ickes & Barnes, 1978), less likely to have higher educational aspirations, less likely to place a high value on being competent at work (Allgeier, 1975), and, clearly, less likely to perform instrumental activities.

Abrahams, Feldman and Nash (1978) analyzed data from 120 adult male and female participants, and concluded that participants’ levels of expressiveness and instrumentality was adjusted depending upon situational needs; When people were in roles which the required traits fit a particular gender prototype, they were more likely to endorse traits consistent with that gender than their peers.

**Learning Style Categories**

Researcher David Kolb (1984) proposed four different learning styles: Accommodating, Diverging, Converging and Assimilating. Although Kolb hypothesized that people tend to have a learning style preference, he also said that they are capable of learning using styles that they do not prefer. As displayed in Figure 2 (an adaptation of a figure from Martino (2012), which was similar to that conceptualized by Kolb), Kolb proposed two dimensions of learning. One dimension conveys how people involve themselves in order to learn. This dimension is comprised of Reflective
Observation and Active Experimentation. The other dimension conveys how people transform their experience in order to internalize information. This dimension is comprised of Concrete Experience and Abstract Conceptualization. Based on peoples’ preferred methods of learning between these intersecting dimensions, their dominant learning style can be identified (Kolb & Kolb, 2008).

As previously noted, Kolb (1984) proposed four different learning styles: Accommodating, Diverging, Converging, and Assimilating, which are comprised of dimensional differences between Reflective Observation / Active Experimentation and Concrete Experience / Abstract Conceptualization. Kolb and Kolb (2005, p. 42) give an example of what each of these dimensions looked like in a course on sonnet writing. An example of Reflective Observation was when students
altered “their perspective from poet to critic and describe the connections between the form and content of their sonnets.” Active Experimentation took place when students “attempt[ed] to create something unfamiliar and determine the intended effect of their sonnet.” Concrete Experience was utilized when “students were invited to draw upon their own personal stories, attitudes, and emotions to compose their sonnets.” Abstract Conceptualization took place if students were able “to grasp the precise metrical and rhythmic pattern of the sonnets through the systematic planning and manipulation of symbols.”

Based on peoples’ preferred methods of learning on each of the two intersecting dimensions, their dominant learning style can be identified (Kolb & Kolb, 2008). Synthesized profiles for each of the four styles of learners, which were written by Kolb, Boyatzis, and Mainemelis, (1999) are below:

Diverging … People with this learning style are best at viewing concrete situations from many different points of view. … A person with it performs better in situations that call for generation of ideas, such as a “brainstorming” session. People with a Diverging learning style have broad cultural interests and like to gather information. Research shows that they are interested in people, tend to be imaginative and emotional, have broad cultural interests, and tend to specialize in the arts. In formal learning situations, people with the Diverging style prefer to work in groups, listening with an open mind and receiving personalized feedback.

Assimilating … People with this learning style are best at understanding a wide range of information and putting into concise, logical form. Individuals with an Assimilating style are less focused on people and more interested in ideas and abstract concepts. Generally, people with this style find it more important that a theory have logical soundness than practical value. … In formal learning situations, people with this style prefer readings, lectures, exploring analytical models, and having time to think things through.
Converging … People with this learning style are best at finding practical uses for ideas and theories. They have the ability to solve problems and make decisions based on finding solutions to questions or problems. Individuals with a Converging learning style prefer to deal with technical tasks and problems rather than with social issues and interpersonal issues. ... In formal learning situations, people with this style prefer to experiment with new ideas, simulations, laboratory assignments, and practical applications.

Accommodating … People with this learning style have the ability to learn from primarily “hand-on” experience. They enjoy carrying out plans and involving themselves in new and challenging experiences. Their tendency may be to act on “gut” feelings rather than on logical analysis. In solving problems, individuals with an Accommodating learning style rely more heavily on people for information than on their own technical analysis. ... In formal learning situations, people with the Accommodating learning style prefer to work with others to get assignments done, to set goals, to do field work, and to test out different approaches to completing a project. (pp. 5-7)

Learning Styles, Sex, and Gendered Traits

There is contention within the field regarding the construct validity of the LSI-2. Moreover, previous literature regarding differences in learning style between men and women is conflicting. Philbin, Meier, Huffman, and Boverie (1995), performed research on 70 (64% female) undergraduate college students who took the LSI-2. Their results indicated that females are more likely to be classified as divergent learners.

Brew (2002) performed research on 393 (61% female) Australian first-year students majoring in Biology who took the LSI-2. Brew’s study found that “ Frequencies of learning style preference were not significantly different by [sex]… to a statistically significant degree” (p. 381). However,
Brew also hypothesized that the LSI-2 is sensitive to sex based on a difference in the way that men and women interpret the instrument’s questions.

Demirbas and Demirkan (2007) conducted a study in part to determine if there was a relationship between sex and learning style. The study participants were 173 freshman-level adults studying design and architecture. The authors found no indication of significant male versus female differences in learning style.

Cavas (2010) collected data utilizing a translated version of the LSI with 616 (388 female, 218 male) Turkish people in teacher education programs and found that females are more likely to prefer Active Experimentation (AE). In sum, research on learning style and sex has provided inconsistent data.

Severiens and Ten Dam (1997), however, performed research in the Netherlands on 432 adult students, who completed the Dutch Sex Role Inventory, and the Inventory of Learning Styles. The research findings demonstrated that socially gendered traits were related to learning styles. Severiens and Ten Dam also found that gendered traits related to learning style more than sex did. There is currently no research available on the Kolb learning styles and BSRI gender schema typologies, however, Severiens and Ten Dam’s research suggests that gender may account for more of the differences observed in learning style than does biological sex.

**Necessity of the Study and Psychological Significance**

A limited amount of research is available on the relationship between gendered traits and adult learning styles, and there is no study that shows the association between each gendered trait and learning style, as measured by Bem’s (1984) Sex Role Inventory Short Form (BSRI-SF) and the Kolb’s (1985) Learning Style Inventory Version 2 (LSI-2).
The primary purpose of this study was to reveal how each gendered trait relates to each learning style, so that we are better able to recognize traits that relate to preferences in learning styles, and so that we may glean a better understanding of this subject. More information about how people learn may help increase efficiency in education, as well as contribute to peoples’ ability to both teach and learn in adept ways.

People are socially encouraged to conform to sex-congruent gender roles and to reject gendered traits that are not congruent with their sex (Saurer & Eisler 1990). This, however, is problematic because there is evidence that people who are capable of endorsing both expressive and instrumental traits are better able to function in a variety of life areas. The aim of the present study is to provide information on how learning style can be influenced by gender conformity and gender nonconformity.

Prior to the study, we contended that if gendered traits that are more significantly related to learning style -rather than biological sex- the broader implications would be major; this could signify that when researchers believe that they are researching sex-based psychological differences, they are truly studying differences based on conformity to sex-congruent male and female social roles.

Do self-endorsed gendered schemas relate to preferred learning styles? Would these gender and learning style correlations look the same regardless of sex? The study herein takes a step toward answering these questions. We have also examined whether the presence of sets of gendered traits is more correlated with learning style than is sex.

**Hypotheses**

Within this study, three hypotheses were proposed:

H1: Males and females would differ in their learning style preferences, as identified by the
LEARNING STYLES

LSI-2.

H2: There would be significant differences in preferred learning style between masculine, feminine, androgynous and undifferentiated gender role presentations, as measured by the BSRI.

H3: Gender category classification would account for variance seen in learning style preference, beyond an individual’s sex alone.

Methods

Participants and Recruitment

The participants were 42 male and 44 female individuals. To be eligible to participate, individuals were required to be at least 18 years of age at the time of the survey. The ages of participants ranged from 21 to 56, and the mean age was 30. Below is a list of the learning styles and gender categories, accompanied by the percentage of participants belonging to each.

Table 1

_Distribution of Participants’ BSRI Gender Category_

<table>
<thead>
<tr>
<th>Gender Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Androgynous</td>
<td>35.4%</td>
</tr>
<tr>
<td>Feminine</td>
<td>21.5%</td>
</tr>
<tr>
<td>Masculine</td>
<td>24.1%</td>
</tr>
<tr>
<td>Undifferentiated</td>
<td>19.0%</td>
</tr>
</tbody>
</table>

Table 2

_Learning Style Distribution of Participants_

<table>
<thead>
<tr>
<th>Learning Style</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodating</td>
<td>25.3%</td>
</tr>
</tbody>
</table>
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Assimilating 24.1%
Converging 3.8%
Diverging 46.8%

A recruitment message (Appendix C) was distributed online through social networking sites and through national research recruitment websites (e.g., irbapproved.studyshare.blogspot.com). This message included a link directing potential participants to a website wherein they could participate if they so wished.

Materials and Measures

The following materials were utilized in the study:

Informed Consent Document (Appendix A)
Demographic Questionnaire (Appendix B)
Recruitment Message (Appendix C)

Additionally, three assessment instruments were utilized. Below is an overview of each of these three instruments:

*The Media Exposure Questionnaire* (MEQ) (Appendix D) is a measure constructed by the faculty advisor of the principle investigator to assess the frequency and qualitative nature of exposure to various forms of media.

*The Kolb Learning Style Inventory, Version 2* (LSI2) (Appendix E) is used to measure peoples’ preferred learning styles across four categories: Accommodating, Diverging, Converging, and Assimilating. Within this measure, individuals respond to 12 questions in a multiple-choice response format (Kolb, 1985).

*The Short-Form Bem Sex-Role Inventory* (BSRI) (Appendix F) was designed to measure the social constructs of psychological femininity and masculinity. This inventory also provides a score
and feminine-minus-masculinity differences (an androgyny score). Test takers are presented with 30 traits and asked to provide their degree of adherence to each on a 1 to 7 Likert scale (Bem, 1981).

**Methodology and Procedures**

Surveys were conducted through SurveyMonkey.com, a secure Internet-based survey program. The SurveyMonkey.com account that was utilized in this study is owned and operated exclusively by Dr. Shawn Davis. Individuals who were not associated with this project did not have access to the resulting study data. All data was housed on a password-protected computer located at the School of Professional Psychology, Pacific University College of Health Professions campus, Building II, Suite 286.

Upon entering the secure research site, participants were presented with, and asked to review, the informed consent document (Appendix A). Those individuals who provided consent were then presented with, and asked to complete, the demographics questionnaire (Appendix B), the Media Exposure Questionnaire (Appendix D), the Kolb Learning Style Inventory Version 2 (Appendix E), and the Short-Form Bem Sex Role Inventory (Appendix F).

After completion of these inventories, participants were thanked for their contribution and encouraged to share the recruitment message with other individuals within their social network (i.e., a snowball recruitment methodology). Upon completion of the study, participants were offered the opportunity to be entered in a drawing for a $100.00 Amazon gift card. If they indicated that they would like to be entered in the drawing, they were directed to a second secure SurveyMonkey site wherein they provided their contact information (e.g., Name and e-mail address). Due to use of a second site, there was no means of associating participant study responses with their contact information. Total participation time is expected was approximately 20 minutes.
Results

The first hypothesis was that males and females would differ in their learning style preferences, as identified by the LSI-2. In order to analyze this hypothesis, we conducted a chi square analysis comparing differences between males and females on each learning style preference. Significant differences between males and females were found ($\chi^2(3)=8.47$, $p=.037$). Specifically, through examination of the standardized residuals within cells it was found that the observed count for males was significantly less than expected within the assimilative learning style category. Additionally, the observed count for females was significantly more than expected within the assimilative learning style category.

Our second hypothesis was that there would be significant differences in preferred learning style between masculine, feminine, androgynous, and undifferentiated gender role presentations, as measured by the BSRI. In order to analyze this hypothesis, chi square goodness of fit assessment was conducted. Significant differences between BEM categories were found ($\chi^2(9)=21.45$, $p=.011$). Specifically, through examination of the standardized residuals within cells, it was found that the observed count for people categorized as androgynous was significantly more likely than expected, and these participants were likely to be categorized as preferring assimilative styles of learning. Additionally, people categorized as undifferentiated were significantly less likely than statistically expected to prefer assimilative styles of learning.

Our third hypothesis was that gender category classification would account for significant variance seen in learning style preference, beyond an individual’s sex alone. To analyze this
hypothesis, a multinomial logistic regression was conducted. A multinomial logistic regression can be used to predict group membership based on independent variables. The independent variables each had a predictive value associated with them that is on a zero to one scale, with one being the strongest ability to predict group membership.

We found that BEM categories were a significant predictor of learning style preference ($\chi^2(9)=16.97, p=.049$). Moreover, sex was not found to be a significant predictor of learning style preference ($\chi^2(3)=1.82, \text{n.s.}$).
Discussion

Within this study, three hypotheses were proposed. The following is a discussion of each of our three hypotheses, the related findings rendered from our research, and how findings from our study relate to the previous literature.

The first hypothesis was that males and females would differ in their learning style preferences, as identified by the LSI-2. We found that regarding learning style, females were disproportionately more likely to be categorized as assimilative, than were males.

Previous literature regarding differences in learning style between men and women is conflicting. Viewing Figure 2 may help you conceptualize the following findings. Philbin, Meier, Huffman, and Boverie (1995) found that females are more likely to be classified as divergent learners. Neither Brew (2002) nor Demirbas and Demirkan (2007) found any significant differences in learning style preferences for males compared to females. Finally, Cavas (2010) found that females are more likely to prefer active experimentation. Preferences for active experimentation are conducive to accommodating or converging learning style preference. Our study, on the other hand, found that females are more likely to be assimilative learners, which means that they prefer abstract conceptualization and reflective observation. Because Philbin, Meier, Huffman, and Boverie (1995) found that females were more likely to be classified as divergent learners, their findings are partially congruent with ours, since females in both studies were likely than males to endorse preferences for reflective observation. It is difficult to make meaning from such varied findings. Since each study sampled different subsections of the population, as noted previously, it is possible that differences in culture contribute to the inconsistent findings in the literature.

The second hypothesis was that there would be significant differences in preferred learning style between masculine, feminine, androgynous and undifferentiated gender role presentations, as
measured by the BSRI. We observed that participants who were categorized as androgynous disproportionately endorsed assimilative learning style preferences. We also found that participants who were categorized as undifferentiated were disproportionately less likely to endorse assimilative learning style preferences.

There is no available research that has studied the association between each gendered trait and learning style, as measured by Bem’s (1984) Sex Role Inventory Short Form (BSRI-SF) and the Kolb’s (1985) Learning Style Inventory Version 2 (LSI-2). However, in the Netherlands, Severiens and Ten Dam (1997) found that gendered traits were related to learning styles, when measured by the Dutch Sex Role Inventory, and the Inventory of Learning Styles. Our study’s findings indicate that the presence of major feminine and masculine traits appears to be related to preferences for reflective observation and abstract conceptualization.

The third hypothesis was that gender category classification would account for variance seen in learning style preference, beyond an individual’s sex alone. Gendered traits accounted for more of the observed variance in learning style than did biological sex. Importantly, BSRI category was significantly correlated with learning style, and sex was not. Researchers Severiens and Ten Dam (1997) used different instruments and studied a different population, and still found that gendered traits related to learning style more than did sex, as our research indicated.

The broader implications of these findings could be major. This could signify that when we believe that we are researching sex-based psychological differences, we are truly studying differences based on the assumption of conformity to sex-congruent male and female stereotypes. In research, an examination of male and female differences is inadequate because it relies on stereotypes, but researchers should perhaps look at gender expression instead, because a different story is told. A
LEARNING STYLES

simple dichotomy of male and female perhaps carries too great of an assumption of within-group homogeneity.

Limitations and Conclusion

One of the limitations of our research included our recruitment methods. Because people were recruited solely via Internet-related methods, there is a possibility that our sample does not represent the general population. People who use the Internet often were more likely to be recruited for participation compared to those who use it infrequently, or who do not use it at all. Moreover, because recruitment messages were displayed on social networking websites and social online forums, there was further possibility for a skewed sample. Perhaps people who engage in these online forums are more likely to endorse certain learning style preferences or gendered traits.

Another possible limitation is statistical in nature and relates to our use of a multinomial logistic regression analysis. The effect size is addressed through the odds ratio, which is 1.5. This is at the high end of the acceptable range. A more stringent odds ratio of 1.3 would have lead to an impractical sample size. The selected ratio symbolizes a 60% occurrence rate (and 40% non-occurrence rate). This is the change in probability of being classified as being in a certain category when a predictor variable increases by one. Alpha level was set at .05, which is a common standard. The probability of a Type I error has been set at .8 (power), then beta (the chance of a Type II error is .2). Normality, linearity, and homoscedasticity are not assumptions of logistic regression. However, multinomial logistic regression does assume that expected frequencies are greater than five, and a chi-square test is required for this. Logistic regressions are also sensitive to multicollinearity.

Further research is needed. Data from a subset of the population not recruited online may yield different results. Moreover, while our sample was demographically well proportioned, an even larger sample would be conducive to a more stringent odds ratio for future statistical findings.
Researchers have yet to determine the apparent reasons for the conflicting research findings regarding differences between men and women’s preferred learning style, which could be cultural in nature. Future research is also needed to determine if other past psychological research findings in which sex-based differences were believed have been found could in fact be better accounted for by the expression of socially gendered traits.

In conclusion, we accepted our original hypotheses due to our findings that females and androgynous people were disproportionately more likely to be categorized as assimilative than males were, and that gendered traits, rather than sex, accounted for the differences observed in learning style preferences. These findings may be helpful when considering the development of strategies for overcoming barriers to academic success. Moreover, our research findings demonstrate the possibility that research directed at detecting sex-based psychological differences may be misdirected due an assumption of within-group homogeneity, and may not be accurate for individuals who do not rigidly conform to socialized gender roles.
References


Appendix A

INSTITUTIONAL REVIEW BOARD
FWA: 00007392 | IRB: 0004173
2043 College Way | UC Box A-133 | Forest Grove, OR 97116
P. 503-352-1478 | F. 503-352-1447 | www.pacificu.edu/research/irb
Proposal to Conduct Human Subjects Research
Autonomous, Non-Protected Population – Informed Consent

1. Study title

Self-Directed Media Exposure: Learning Style and Gender Considerations

2. Study personnel

<table>
<thead>
<tr>
<th>Name</th>
<th>Principle Investigator</th>
<th>Student Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution</td>
<td>Shawn Davis, Ph.D.</td>
<td>Jeanne West, MA.</td>
</tr>
<tr>
<td>Program</td>
<td>Pacific University</td>
<td>Pacific University</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:Davissh@PacificU.edu">Davissh@PacificU.edu</a></td>
<td><a href="mailto:West4016@PacificU.edu">West4016@PacificU.edu</a></td>
</tr>
<tr>
<td>Telephone</td>
<td>503-352-7319</td>
<td>503-352-7319</td>
</tr>
</tbody>
</table>

3. Study invitation, purpose, location, and dates

You are invited to participate in this study of factors believed to be related to individual’s choice and use of media. Specifically, your participation will better enable social scientists to understand the relationship between learning style, gender, and various forms of media exposure.

The study is expected to begin December 2011, and to be completed by July 2012. All study information will be collected via the Internet and stored on a computer located at the Pacific University School of Professional Psychology, Building II, Suite 286, within the College of Health Professions.

4. Participant characteristics and exclusionary criteria

To participate in this study, you must be at least 18 years of age. If you are below the age of 18, please exit this survey immediately by closing the browser window.

5. Study materials and procedures
In this study, you will be asked to complete a brief demographic survey. Once this is complete, you will be presented with several brief questionnaires with items regarding your learning style, exposure to media, and endorsement of socially gendered traits. It should only take about 20 minutes to complete your participation in the study.

Your participation is completely anonymous. There is no means of associating any information that you provide with you personally.

Upon completion of this research project, you will be provided the opportunity to be entered into a drawing for a $100.00 Amazon gift card.

### 6. Risks, risk reduction steps and clinical alternatives

**a. Unknown risks**

Your participation in this project involves no foreseeable risks.

**b. Anticipated risks and strategies to minimize/avoid**

Any risks involved in participation in this study are minimal and are not greater that those ordinarily experienced in daily life or during the performance of any routine computer operation.

All data collected will be strictly anonymous. While SurveyMonkey allows the survey administer to determine whether or not to collect IP addresses as part of the survey data, IP addresses will not be collected during any phase of this study.

**c. Advantageous clinical alternatives**

This study does not involve experimental clinical trials.

### 1. Adverse event handling and reporting plan

If you experience discomfort during the study procedure you should stop your participation immediately and Shawn Davis, Ph.D. at (503) 352-7319. In this situation, all data collected to that point will be erased and not used in any analyses. Further, all data will be erased (and not used in any analyses) for any individual that does not complete the entire study survey even if they do not contact the study investigators.

The Institutional Review Board office will be notified by Dr. Davis on or before the next normal business day if minor adverse events occur. Study investigators will consult with the IRB about changes that may need to be made to the protocol or other changes deemed necessary to minimize any minor adverse events.

The Institutional Review Board office will be notified by Dr. Davis within 24 hours if major adverse events occur. In such a situation, the study investigators will immediately discontinue recruitment and discuss with the IRB office the best solution in order to minimize any and all adverse events.

As the principle investigator for this research study is a mandated reporter in the State of Oregon, they have an obligation to report any information shared by a study participant that indicates that they intend...
to harm themselves or others. If this situation occurs, the study investigators will contact the appropriate authorities immediately as well as the IRB.

8. Direct benefits and/or payment to participants

a. Benefit(s)

There are no direct benefits to you for your participation in this study.

b. Payment(s) or reward(s)

You will not be paid for your participation in this study.

9. Promise of privacy

The records of this study will be kept private. Results from your participation will be available only to the researchers themselves. If a publication or other educational use results from this study and case reports are presented, all identifying material will be substantially modified so that your identity will be safeguarded.

Your participation in this project is strictly anonymous. If the results of this study are to be presented or published, we will not include any information that will make it possible to identify you as an individual.

Upon completion of the study, you will be offered the opportunity to be entered in a drawing for a $100.00 Amazon gift card. If you indicate that they would like to be entered in the drawing, you will be directed to a second secure website (maintained solely by Dr. Shawn Davis) wherein you will provide your contact information (e.g., Name and e-mail address). By using a second secure site, there will be no means of associating your study responses with your contact information.

10. Medical care and compensation in the event of accidental injury

During your participation in this project it is important to understand that you are not a Pacific University clinic patient or client, nor will you be receiving care or treatment of any kind as a result of your participation in this study. If you are injured during your participation in this study and it is not due to negligence by Pacific University, the researchers, or any organization associated with the research, you should not expect to receive compensation or medical care from Pacific University, the researchers, or any organization associated with the study.

11. Voluntary nature of the study

Your decision whether or not to participate will not affect your current or future relations with Pacific University. There are no costs to you for your participation other than the time involved in completing the surveys. If you choose not to participate, you are free to withdraw at any time; withdrawal will not result in penalty. If you withdraw from the study at any point (by closing your browser window), your participation will be ended. In this situation, all data collected to that point will be erased and not used in any analyses. Further, all data will be erased (and not used in any analyses) for any individual that does not complete the entire study survey (defined as not reaching the final page of questions and answering any questions on that page).
Participation in this project is voluntary and the only other alternative to this project is non-participation. If you decide to participate, you are free to not answer any question or withdraw at any time without prejudice or negative consequences. If you decide, at any point, to discontinue participation, all data collected to that point will be erased and not used in any analyses.

12. Contacts and questions

The researcher(s) will be happy to answer any questions you may have at any time during the course of the study. If you are not satisfied with the answers you receive, please call Pacific University’s Institutional Review Board, at (503) 352-1478 to discuss your questions or concerns further. If you become injured in some way and feel it is related to your participation in this study, please contact the investigators and/or the IRB office. All concerns and questions will be kept in confidence.

13. Statement of consent

I have read and understand the above. All my questions have been answered. I am 18 years of age or over and agree to participate in the study. I have read and understand the description of my participation duties and have been offered a copy of this form to keep for my records. Since this is an on-line survey, signatures cannot be obtained. By clicking “NEXT” I understand I will be taken to the study and that my continued participation in the survey denotes my consent. If I choose not to participate or to withdraw from participation, I can close the web page at anytime.
Appendix B
Demographic Questionnaire

Please respond to each of the following…

Age: _____

Gender: _____

Ethnicity: ____________________

Are you currently a student? ____ Yes ____ No

What is the highest level of education completed?

_____ Less than High School

_____ Some High School

_____ High School Diploma

_____ Some College

_____ Technical or Trade school certificate or degree

_____ 2-year degree

_____ 4-year degree

_____ Some graduate-level training

_____ Graduate degree

What is your sexual orientation?

_____ Gay / Lesbian

_____ Straight

_____ Bisexual

_____ Other

_____ Prefer not to answer

What is your average annual income? ____________
Appendix C

Proposed Recruiting Message

My name is Jeanne West and I am a doctoral student at the School of Professional Psychology at Pacific University. I am conducting an IRB-approved study under the direction of Shawn Davis, Ph.D., an Associate Professor within the School of Professional Psychology at Pacific University. This study is an examination of the relationship between media exposure, learning style, and socially gendered traits.

I would like to invite you to participate in this study. If you agree to participate, you will be asked to respond to a series of questions presented online; the entire process will take about 20 minutes. Participation in this project is strictly anonymous. There will be no means of associating your responses with you personally.

To participate, you must be at least 18 years of age. If you choose to be a participant, your contribution to this research will aid in the development of scientific knowledge regarding media consumption, learning and socially constructed gender roles.

After participation is complete, you will be provided the opportunity to enter a drawing for an Amazon gift card worth $100.

If you would like to participate in the research study, please click the following link to begin:
http://www.surveymonkey.com/xxxxxxxxxxxx

Also, if you would like to contribute to this research by passing along this recruitment message, that would be greatly appreciated.

If you would like information regarding the outcome of this study (regardless of participation status) or have any other questions, please use the information provided below to contact me.

Thanking you,
Jeanne West, MA.

Doctoral Student
School of Professional Psychology
Pacific University
West4016@pacificu.edu

Shawn Davis, Ph.D.
Associate Professor
School of Professional Psychology
Pacific University
(503) 352-7319
davissh@pacificu.edu
Appendix D

Media Exposure Questionnaire – Individual Adult (MEQ-IA)

**Television**
Do you watch television? Yes _______ No _______

How many hours in a normal day do you spend watching television? _______

Indicate how often you watch the following types of television broadcast:

<table>
<thead>
<tr>
<th>Broadcast Type</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometime(s)</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiction / Drama</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comedy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifestyle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Movies</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Children and Family</td>
<td></td>
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<tr>
<td>Music</td>
<td></td>
<td></td>
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<tr>
<td>Sports</td>
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<tr>
<td>Reality Television</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Adult Content</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multicultural / International</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>News</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home Shopping</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious Broadcasts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Documentaries / Non-Fiction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Talk Shows</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
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<tr>
<td>_____________________________</td>
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</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

How many televisions do you regularly use in your household? _______

Indicate which room(s) of your house has a television:

- Living / Family Room _______
- Den/Study _______
- Bedroom _______
- Kitchen _______
- Other ___________________
LEARNING STYLES

Do you have the television turned on even when you are not actively watching?
Yes _______ No _______ 

If you suddenly didn’t have television, how would it affect you emotionally?

<table>
<thead>
<tr>
<th>Very Negative Affect</th>
<th>Slightly Negative Affect</th>
<th>Neutral / No Affect</th>
<th>Slightly Positive Affect</th>
<th>Very Positive Affect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

Internet
Do you ever access the Internet? Yes _______ No _______

How many hours in a normal day do you spend on the Internet? ___________

Indicate how often you visit the following types of websites:

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometime s</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>News / Politics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business / Finance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online Movies / Television</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sports</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fashion / Lifestyle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education / Research</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shopping</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jobs / Employment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Dating</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious and Inspirational</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Games</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult Content</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weather</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

How often do you engage in the following on the Internet?

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometime s</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening to Podcasts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-Mail</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### LEARNING STYLES

<table>
<thead>
<tr>
<th>Social Networking (e.g., Facebook, Twitter, etc.)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Movies / Television</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playing Games Online</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online Shopping</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create / Manage Your Own Website</td>
<td></td>
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</tr>
<tr>
<td>Medical Advice</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Look up Information</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan / Arrange Travel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you suddenly didn’t have access to the Internet, how would it affect you emotionally?

<table>
<thead>
<tr>
<th>Very Negative Affect</th>
<th>Slightly Negative Affect</th>
<th>Neutral / No Affect</th>
<th>Slightly Positive Affect</th>
<th>Very Positive Affect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**Magazines / Books (Electronic or Print)**

Do you read magazines and/or books? Yes _______ No _______

How many hours in a normal week do you spend reading magazines and/or books? _______

Indicate how often you read the following types of magazines and/or books:

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fashion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>News / Politics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School / Textbooks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Fiction (e.g., Biographies)</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Fiction and Literature</td>
<td></td>
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</tr>
<tr>
<td>Cooking</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Religion and Inspiration</td>
<td></td>
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<tr>
<td>Sports</td>
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<tr>
<td>Self-Improvement</td>
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<tr>
<td>Other</td>
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</tr>
</tbody>
</table>

If you suddenly didn’t have access to magazines or books, how would it affect you emotionally?
LEARNING STYLES

<table>
<thead>
<tr>
<th>Very Negative Affect</th>
<th>Slightly Negative Affect</th>
<th>Neutral / No Affect</th>
<th>Slightly Positive Affect</th>
<th>Very Positive Affect</th>
</tr>
</thead>
</table>

**Newspapers (Electronic or Print)**

Do you read newspapers? Yes _______ No _______

How many hours in a normal week do you spend reading newspapers? _______

Indicate how often you read the following sections within the newspaper:

<table>
<thead>
<tr>
<th>Local News</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>National News</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International News</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entertainment</td>
<td></td>
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<tr>
<td>Sports</td>
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</tr>
<tr>
<td>Business</td>
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<tr>
<td>Fashion / Lifestyle</td>
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<td></td>
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<tr>
<td>Editorial / Opinion</td>
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<tr>
<td>Health</td>
<td></td>
<td></td>
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<tr>
<td>Science / Technology</td>
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<tr>
<td>Other</td>
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</tr>
</tbody>
</table>

Other ______________________

Other ______________________

If you suddenly didn’t have access to the newspaper, how would it affect you emotionally?

<table>
<thead>
<tr>
<th>Very Negative Affect</th>
<th>Slightly Negative Affect</th>
<th>Neutral / No Affect</th>
<th>Slightly Positive Affect</th>
<th>Very Positive Affect</th>
</tr>
</thead>
</table>

**Radio**

Do you listen to the radio? Yes _______ No _______

How many hours in a normal day do you spend listening to the radio? _______

Indicate how often you listen to the following types of radio broadcasts:

<table>
<thead>
<tr>
<th>Sports</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
</table>

Sports
### Learning Styles

<table>
<thead>
<tr>
<th>News / Politics / Talk</th>
<th>Public Radio</th>
<th>Religious Broadcasting</th>
<th>Music</th>
<th>Other ______________</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
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</tr>
</tbody>
</table>

If you suddenly didn’t have access to the radio, how would it affect you emotionally?

<table>
<thead>
<tr>
<th>Very Negative Affect</th>
<th>Slightly Negative Affect</th>
<th>Neutral / No Affect</th>
<th>Slightly Positive Affect</th>
<th>Very Positive Affect</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

### Cell Phone

Do you have access to a cell phone?   Yes _______ No _______

How many hours in a normal day do you spend on a cell phone?   _______

How often do you engage in the following on a cell phone?

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talking on the Phone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Texting / Instant Messaging</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listening to Music</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-Mail</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Social Networking (e.g., Facebook, Twitter, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Movies / Television</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playing Games</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Internet Use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taking / Looking at Pictures</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taking / Looking at Video</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
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<td></td>
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<tr>
<td>________________</td>
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</tbody>
</table>

If you suddenly didn’t have access to a cell phone, how would it affect you emotionally?

<table>
<thead>
<tr>
<th>Very Negative Affect</th>
<th>Slightly Negative Affect</th>
<th>Neutral / No Affect</th>
<th>Slightly Positive Affect</th>
<th>Very Positive Affect</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

What is your overall opinion of each of the following types of media?
## Learning Styles

<table>
<thead>
<tr>
<th></th>
<th>Very Negative</th>
<th>Slightly Negative</th>
<th>Neutral</th>
<th>Slightly Positive</th>
<th>Very Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Television</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Internet</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Magazines / Newspapers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Radio</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>Cell Phone</strong></td>
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</tr>
</tbody>
</table>

Please indicate your reason for using each of the following forms of media:

<table>
<thead>
<tr>
<th></th>
<th>Don’t use this form of media</th>
<th>Only because I have to (e.g., work)</th>
<th>Only because I want to</th>
<th>Because I both need and want to</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Television</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Internet</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Magazines / Newspapers</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
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</tr>
<tr>
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</tbody>
</table>

Please provide any additional information regarding your individual media exposure not addressed in the previous questions:

**
Appendix E

Kolb Learning Style Inventory, Version 2

[This measure has been redacted for online presentation of this paper]
Appendix F

Short-Form Bem Sex-Role Inventory

[This measure has been redacted for online presentation of this paper]