Gender and Types of Learning

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Gender and the Types of Learning

Lindsay Cecile

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Abstract

The present experiment looked at the preferred learning styles of 28 males and females. Western University students read or listened to a short story prior to completing a questionnaire about thus story. Previous studies indicated males and females have different ways of thinking, however this two by two study concluded that there is not a preferred learning style between the genders.

Keywords: Learning styles, Auditory, Visual, Gender.

In 2004, Sandmire and Boyce performed a study between students in health education that determined there is a correlation of learning interaction between concrete and abstract learners. Kolb’s learning styles were used in this experiment to divide students into the learning category best fit for them (McLeod, 2013). The study tested students for their desired learning strategy and how they worked with others on a case. It was found concrete and abstract learners work best in a mixed group (Sandmire et al., 2004).

A comparable study was conducted by Williams, Brown and Etherington (2012) that explored the learning style partialities of undergraduate students enrolled in an Australian social work program. It was concluded that there were a wide range of preferred learning styles in the classroom, and it was difficult to pinpoint just one that would benefit all of the students. It was determined however, that certain professions do seem to follow a pattern of similar desired learning techniques.

There have been multiple research studies done proving the brains of males and females are very different in terms of biology, chemistry and processing. Dr. Gregory Jantz describes the difference between the levels of grey and white matter in the brain as quite significant. Men
employ more grey matter while doing activities, which is seen in localized sections of the brain, causing men to be very task oriented (Jantz, 2014). Women on the other hand use substantially more white matter while performing – which is connected to all areas of the brain, giving possible reason to why it is assumed women are good at multitasking (Jantz).

In this study, males and females were tested in order to determine if there would be a preferred learning style between the genders. There will be a main effect found, determining males are preferred visual learners and females are auditory learners.

Method

Participants

The participants of the study were 28 students enrolled at Western University. Western is a public research school located in South Western Ontario. The students who were available in the University Community Centre on the days of data collection in April were approached and asked to participate. There was an equal division of males and females.

Materials

A short story was obtained from the online database, Booksie, by Robert Kasch and was typed out in Arial size 13-font (Appendix A). A voice recording of the story was created and replayed on an iPhone. Also used in this experiment were a typed question and answer page (Appendix B) and a blank answer sheet. Students answered the questions on sections of lined paper numbered one to five.

Procedure

All participants were asked to contribute to the study via word of mouth as they entered the University Community Centre. Participants were randomly distributed into one of two
groups, based on which number they selected from a container. There was a separate container for both males and females, each of which had seven number ones and seven number twos. Those who chose the number one were required to complete the visual test, where those who chose the number two were required to complete the auditory test. Once a number was drawn, it was discarded of, to keep an equal division of those completing the visual task and those completing the auditory task.

Participants in the visual group were asked to read the story one time through in a quiet setting, after which they were immediately asked a series of five questions relating to the reading. The participants in the second group were asked to listen to the recording of the story in a quiet setting, and immediately asked the same series of five questions. Questions were read aloud by the experimenter and the participants recorded their answer on the provided paper. No time limit was given.

Results

The results of the experiment are shown in Figure 1 from the data collected (Appendix C). This figure appears to show a main effect of visual learning between males and females, however the results were inconclusive. A two-way between subjects analysis of variance was conducted to compare gender and the learning style (auditory/visual) with number of correct answers as the dependent variable. The results indicated there was no significant effect found between the interaction for gender and learning, $f(1,24) = 3.64, p > 0.05, \eta^2 = 0.12$. There was also no significant effect for gender, $f(1,24) = 1.53, p > 0.05, \eta^2 = 0.05$, or learning style, $f(1,24) = 0, p = 0, \eta^2 = 0$. 
Figure 1. A graph showing the relationship between gender and learning style (auditory and visual).
Discussion

The results of this experiment were regrettably insignificant towards the original hypothesis, which stated that females have a higher success rate with auditory learning and males will have higher correlation to visual learning. Figure 1 appears to show a main effect of gender and visual learning. However, on closer inspection, the scale of the graph is merely a two-score range and not conclusive to a main effect. Thus, the experiment did not prove there is a preferred learning style between the genders.

The lack of the optimal results - a cross over interaction – could be due to the small participant count that was used. One alteration to this experiment could be to increase the sample size. Also, only select university students in the University Student Centre participated, by studying all ages and education level could produce significant results.

Another fault with this study would be the method of collecting the data; all the participants are read aloud the questions by the experimenter and asked to write the answers down on a page. This could cause an error or confusion because individuals who truly are visually inclined do not get to see the question in front of them, so this could be a reason for the insufficient results. To extend on this study participants in the visual group could read the questions themselves and answer it by writing on the question page itself.

One error within this study is the assumption that each person has an equal fact recall level. If a person only answers one question correct in the auditory test, this could seem like they have a low recall rate for auditory learning, and must be a visual learner. However, that may be their best possible mark and if they took the visual version they
may not answer any of the questions right. Another assumption present is the fact that it is assumed everyone is either one hundred percent a visual learner or auditory learner, and kinesthetic learning is omitted altogether. When the fact is, individuals can be a variety of all the different learning styles. This is a limitation to a between subjects study like this because we are forced to make assumptions. But due to an order bias, a within subjects format was unable to be utilized to eliminate these assumptions.

A possible substitution or extension of this research would be to present the visual group of participants with a complex image – like a street scene – and give the auditory group a verbal description of the scene. With this version of the study, a within subjects analysis of variance could be used to compare each individuals results. Using a similar question/answer format as the original study, it could determine if the participants are predominately auditory or visual learners. This may be more effective because it would analyze each participants scores within themselves and that would give a base line, instead of assuming everyone is the same on terms of auditory and visual learning.

Possible research to further this study could be to compare the preferred learning styles of different demographics, such as age or socioeconomic status. This may result in significant values and give educators an insight on how to help certain classes of people, or certain ages, when studying or learning.
References


Appendix A

Fish Bowl
By Robert Kasch

The two goldfish swim aimlessly in their small round world of glass and water. Natalie Brewer watches them with dispassionate interest while her husband, John, finishes his last swallow of coffee and gathers scattered work folders.

“Be home at 5:30 Nat. Martinis on the ready?”

“Of course dear. And, I know, no olives.”

“Good. And don’t forget to feed our friends. Gotta run.”

The day passes slowly for Natalie with only laundry, dishes and a bit of vacuuming to keep her occupied but still bored. Maybe she should take the soaps back.

Putting away the cleaner she makes a tall glass of iced tea and watches as the two fish continue swimming in slow, bored circles. ‘I know how you feel. Do you know there is life outside your bowl? Have any little fish hopes and dreams? Hmm maybe not. How about lunch then?’ A pinch of fish food into the water and three minutes of the fish in a feeding frenzy.


Out front John’s Ford was pulling into the drive. The black car throws its reflection against the front rooms picture window followed by the image of John walking towards the door. Natalie rushes to the liquor cabinet and quickly puts two Martinis together and sits them on the sofa table as her husband enters. Spying the two drinks he smiles and gives Natalie a wink…

With a practiced stride John walks to the fish bowl and deftly nets the fish from the water and drops one into the martinis.

“Cheers”
Appendix B

Questions

1. What was the name of the husband?

2. What time was the he expected to be home?

3. What drink did Natalie have at lunch?

4. What colour was John’s vehicle?

5. What was the name of the fish?

Answer/Score Sheet

1. John – 1 mark
2. 5:30 PM – 1 mark
3. Iced tea – 1 mark
4. Black – 1 mark
5. Skipper and Gilligan – 0.5 mark for each correct name
### Appendix C

*R* = correct answer  
*N* = incorrect answer

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