Gender Learning Differences

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Two volunteers: one male, one female

- Please teach the classroom how to make a paper airplane
- Give as many instructions as you need
- Keep in mind there are different types of learners in the classroom
Who’s the better leader?

- https://www.youtube.com/watch?v=rYpDU040yzc
What did we learn?

• There a differences in teaching methods
• Female are more interpersonally-oriented
• Males are more task oriented
  • Males are more focused on teaching the material rather than how you are feeling or processing the material
  • If the task is completed, male instructors have done their job
Study by Alice H. Eagly and Blair Johnson

*Gender and leadership style: A meta-analysis.*

- The study demonstrated that women and men differ in their leadership styles
- Men tend to focus more on getting the job done whereas women are focused in the autonomy of the classroom experience

“women tended to adopt a more democratic or participative style and a less autocratic or directive style than did men.”

The interpersonal communication of female instructors

• A study by Sheila Bennett, revealed that women are perceived as friendlier, warmer, more nurturing than male instructors

• Women instructors are also victims of gender-based stereotypes in the classroom

• Even though, they might present themselves as authoritative in the classroom, gender stereotypes or perceptions of the students affect their evaluation of the professor
So, is there equal representation of female and male instructors?

- No, in fact after researching, I have found that women instructors are “overrepresented” in community college and have lower ranks of leadership.
- There is a greater representation of male instructors in four-year accredited universities versus women instructors.
- Women have less tenures compared to male professors.
- According to Gene H. Starbuck, instructors differences are mostly found in the subjects that they are teaching.
- Female instructors teach social sciences than advance scientific courses.

Is there a common ground?

• Study conducted by Sarah Torok, Robert McMorris, and Wen Chi Lin revealed that students are more active participants in the classroom if humor is involved.

• Students regardless of the gender of the professor will learn and be more perceptive of the course material if it is presented to them in humorous way.

Journal Article: http://www.tandfonline.com/doi/pdf/10.3200/CTCH.52.1.14-20
Are girls and boys really that different?

• How different could girls and boys really be? Jimmy Kimmel interviews kids to find out!

• [https://www.youtube.com/watch?v=EkTb3Y1CDcA](https://www.youtube.com/watch?v=EkTb3Y1CDcA)
Are girls and boys really that different?

• We have all heard phrases similar to, “Men are from Mars, and Women are from Venus”, but how different are they really?
• In this presentation we will look at the different learning styles of boys and girls in school, as well as how teachers can cater to their varying needs.
Boys and girls tend to see things differently.

- According to the Reader’s Digest, boys and girls literally see the world around them differently. (Kaufmann, Reader’s Digest)
- This is due to differences in the physical composition of their eyes, ears, and brain.
Boys and girls tend to see things differently.

• The male eye is drawn to cooler colors like silver, blue, black, grey, and brown.
• The composition of the male eye also makes it more attuned to motion and direction.
• “Boys interpret the world as objects moving through space.” (Kaufmann)
Boys and girls tend to see things differently

- Girls however, have eyes that are drawn to warmer colors (reds, oranges, yellow), as well as textures or visuals with more detail (i.e. faces). (Kaufmann)
- Girls don’t tend to see the world as objects in motion, thus it doesn’t typically affect their learning.
Hearing differences

• Boys and girls interpret tone of voice, as well as volume differently.

• Girls, for example, have the tendency to interpret loud tones as yelling. As a result they may perceive it as yelling and could become closed off to their educator.

• Girls can hear higher frequencies and are more sensitive to sounds due to a finer tuned aural structure.

(Kaufmann)
Differences in Learning Phonics

• There is a significant difference in how boys and girls learn phonetically.
• Girls tend to learn words more effectively than boys.
Differences in Learning Phonics

• In a study by Kaushanskaya, Gross, and Buac, girls and boys were put up to the test to quantify gender differences in recognizing familiar, and unfamiliar words.

• Through a series of sessions, both genders were tested on new words by matching them with a corresponding picture, just after learning them.
Differences in Learning Phonics

• “Girls demonstrated higher recognition accuracy than boys on the phonologically novel words.” (Kaushanskaya, Gross, & Buac, 2013)
• According to their findings, Kaushanskaya, Gross, & Bauc concluded that when it came to familiars words, girls outperformed boys at familiar words. When it came to differences in unfamiliar words, the results were not statistically significant.
Differences in Phonics

• According to Ruel A. Allred (1990), there is a significant difference in the spelling abilities between boys and girls.

• In their study, they had boys and girls participate in two different standardized tests. The objective of the tests would be to identify misspelled words, as well as spelling words out.

• “At all grade levels, girls identified the correct spelling of substantially more words on the CTBS and substantially more more words were spelled correctly by girls on the WST.” (Allred, 2010)
## Differences in Phonics

### Table 1.—Words Spelled Correctly by Sex for Each Grade on CTBS and WST Spelling Tests

<table>
<thead>
<tr>
<th>Grade</th>
<th>Number of words on test</th>
<th>Words correct more often by males</th>
<th>Words correct more often by females</th>
<th>Same</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>34</td>
<td>2</td>
<td>32</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>34</td>
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<td>33</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>44</td>
<td>5</td>
<td>39</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>50</td>
<td>4</td>
<td>44</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>50</td>
<td>1</td>
<td>48</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>30</td>
<td>1</td>
<td>29</td>
<td>0</td>
</tr>
</tbody>
</table>

**Standardized test**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Number of words on test</th>
<th>Words correct more often by males</th>
<th>Words correct more often by females</th>
<th>Same</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>34</td>
<td>1</td>
<td>33</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>34</td>
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<td>3</td>
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</tr>
<tr>
<td>6</td>
<td>30</td>
<td>2</td>
<td>27</td>
<td>1</td>
</tr>
</tbody>
</table>

**Word spelling test**

*Note. In each grade, $n_{\text{Boys}} = 252; n_{\text{Girls}} = 252.*
Differences in Brain Development

• Another difference between boys and girls is how their brains develop.

• According to Michael Gurian (2010), the actual brain structure differences have a substantial affect on learning.
Differences in Brain Development

- Gurian set out to explore the dominance of different school subjects in boys and girls. The results concluded that brain structure was a direct causal factor.

- They removed all gender bias, by not looking at whether or not the brains being observed were male or female.

- The study showed that there was a direct correlation in brain structure and the subjects preferred by the children.  
  
  (Gurian, 2010)
Differences in Brain Development

• Generally speaking, the results showed that girls don’t prefer physics as much as the boys did, but enjoyed reading and writing.

• Boys, on the other hand, took more to physics and mathematics, while disliking reading and writing.

• This is due to the fact that boys brains are highly spatial. This means that they are more prone to “use more abstract strategies such as derived facts or invented algorithms,” that “reflected conceptual understanding.” (Fennema, et. al, 1998)
Differences in Brain Development

• Females are also less likely to have learning disabilities.

• This is because the female brain “uses more cortical areas for more learning functions.” (Gurian, 2010)

• “If one area of the female brain experiences a slight defect, another makes up for it.” (Gurian, 2010)
Differences in Brain Development

• “Because the male brain lateralizes (compartmentalizes) its learning, a defect in one area of the brain may well affect the only area of the brain where a particular learning function is taking place.” (Gurian, 2010)

• Thus, male and female brains are physiologically different, and these differences affect most of the learning processes.
Tips for Teachers

• Now that we’ve established the physiological and learning style factors that affect boys and girls in different ways, it is crucial that teachers know how to adjust to these differences.
Tips for Teachers

• Many researchers have actually suggested that boys and girls should learn in different classrooms.

• This is obviously due to the fact that boys and girls have physiological differences in their brains, ears, and eyes that cause them to perceive the world differently.

• This would require teachers to also adjust their teaching styles.
Tips for Teachers

- Because of the differences in male and female eyes, teachers may have to adjust their body movement and the colors used in the classroom.
- For boys, it would be best to use cooler colors (i.e. black, brown, blue, etc.). Teachers of girls should highly consider using warmer colors (i.e. red, orange, yellow, etc.), as well as textures and patterns.
- In terms of body movement, teachers of boys need to be mindful of the fact that they see the world as objects moving through space. This would require more body movement to keep their attention. Teachers of girls don’t need to move around as much.

(Kaufmann)
Tips for Teachers

• For teachers of boys, it is highly recommended that when speaking that they sound matter of fact. This needs to look different for teachers of girls.

• Teachers of girls need to be mindful of the tone and volume of their voice. Remember, girls have a fine tuned aural structure and may perceive loud voices as yelling. This could cause them to shut down.

(Kaufmann)
Tips for Teachers

• Brain differences in boys and girls should also be taken into consideration when teaching either gender.

• Since boys brains give them an advantage in physics and mathematics, teachers should be encouraged to expose them to engaging (physically involved) reading and writing. This will help them as they move on to higher education.
Tips for Teachers

• For girls, it should be encouraged to expose them to math and science.
• It would be best to incorporate music and art as they learn.
• Incorporating manipulatives to teach math, as well as doing in-classroom science experiments is recommended.
Activity #1

• In this activity, we will observe how boys and girls will go about constructing a model airplane.

• First, we will need to separate the boys and the girls. They can still remain in the same classroom.

• Each child will be given model airplane parts, as well as a sheet of paper with simple instructions on how to build the airplane.
Activity #1

• Now we can observe the behavioral differences in how they go about building the airplane!

STEP 1: ASSEMBLE PART A TO PART B. STEP 2: GLUE THESE PIECES SECURELY. STEP 3: FIND PART C AND CONNECT TO PART D...
Activity #1

• For the girls, you may notice a tendency to read the instructions before building the model airplane. This would illustrate how girls may be more prone to auditory learning.

• For the boys, you may notice a tendency to skip the instructions and to try building the model airplane based on what they observe about the parts given. This would illustrate how boys brains are highly spatial. Boys are visual learners.
Activity #2

• In this activity, we will observe gender learning differences by asking both genders to draw them with their friends at recess.
• First, we will need to separate both genders. They can both remain in the same classroom.
• Each student will be given paper, as well as the same box of crayons, pencils, and pens.
Activity #2

• You may notice several differences in the drawings based on the gender of the student. Boys may illustrate more playground play in terms of games like soccer or football. Girls may illustrate more playground play in terms of socialization.
Summary

• In conclusion, we can see that physiological factors heavily influence learning styles, as well as the personalities of boys and girls.

• It is crucial that teachers learn to adapt to these differences to more effectively communicate the subject material.

• By participating in activities that emphasize gender differences, we can implement better teaching strategies to help children succeed in their education.
References


• A Longitudinal Study of Gender Differences in Young Children's Mathematical Thinking By: Fennema, Elizabeth, Thomas P. Carpenter, Victoria R. Jacobs, Megan L. Franke, and Linda W. Levi. Educational Researcher


• Gender differences in child word learning By: Kaushanskaya, Margarita, Megan Gross, and Milijana Buac. Learning and Individual Differences


LEARNING PROCESSES OF MEN AND WOMEN
VARIATION IN EFFECTIVENESS

• “Thirty years ago, it was girls everyone was worried about. Across the world, a huge and spirited effort was mounted to raise the horizons of girls, to give them confidence, that they could do anything they wanted with their lives, and to demolish the barriers to their achievement. And it’s working; today, it’s the girls who are more sure of themselves, motivated, and capable. More girls than boys finish school, more girls go on to college, and they get better grades than boys.” (Biddulph 1998)

• What does this mean?
  • People begin to worry about one specific gender and question the effectiveness of their teachings. It is best to let each gender learn in a way that is most effective to them.
CAN IT BE CONTROLLED?

• To begin, we must ask ourselves, “Why are we this way?” Men and women are obviously different, and “For most of the twentieth century, those differences were explained away by social conditioning”, meaning people were individualized through the values of those who raised them (Pease 2000).
BREAKING GROUND

• However, as technological advances have been made, we can dive deep into the biology of what makes men and women different.

• “Biological evidence... shows convincingly that it is our hormones and brain wirings that are largely responsible for our attitude, preferences, and behavior” (Pease 2000)
The difference between guy and girl brains:

**Guy:** Yay! Ice cream!

**Girl:** Yay! Puppy dogs!
DIFFERENCES IN THE BRAIN

**MEN**

- Deductive thinkers
- Fares better at solving without tangibles
- Enjoys abstracts arguments
- More susceptible to boredom
- Less verbal

**WOMEN**

- Inductive thinkers
- Fares better with tangibility; works better with objects
- Prefers concrete detail
- Better listeners
- More verbal

(Gurian 2001)
## DIFFERENCES IN THE BRAIN

<table>
<thead>
<tr>
<th>MEN</th>
<th>WOMEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Love to interrupt</td>
<td>• Ask more questions</td>
</tr>
<tr>
<td>• More likely to challenge</td>
<td>• Make greater use of positive minimal responses</td>
</tr>
<tr>
<td>• Use mechanisms to control conversation</td>
<td>• Tendency to overthink</td>
</tr>
</tbody>
</table>

(Monaghan 2007)
THE FEMALE BRAIN

THE MALE BRAIN

MANY differences 😊
PREFERENCES IN LEARNING

• Erica Wehrwein did a university study to tabulate the preferences of learning by gender. She distributed a questionnaire she dubbed the VARK.
  • V- visual
  • A- auditory
  • R- reading and writing
  • K- kinesthetic
RESULTS

• 54.2% of females and only 12.5% of males preferred a single mode of information presentation
• Among the female students, 4.2% of the students preferred (V), 0% of the students preferred (A), 16.7% of the students preferred printed words (R), and 33.3% of the students preferred using all their senses (K)
• 45.8% of female and 87.5% of male respondents preferred multiple modes [female: 2 modes (12.5%), 3 modes (12.5%), and 4 modes (20.8%); males: 2 modes (16.7%), 3 modes (12.5%), and 4 modes (58.3%)] of presentation.

(DiCarlo 2007)
• Men are more logical thinkers who can handle many methods thrust upon them at once. More verbally passive in nature.
• Women are typically more creative, but prefer one method of learning at a time. Makes more use of verbal communication.
WORKS CITED


How men and women teach differently
exercise

• Have class partner up

• Think of a female teacher you have had and a male teacher you have had

• What different things did each teacher do? How did you treat these teachers differently? What did they focus on more in class (did they lecture more, play lots of videos, encourage group/individual work, have lots of activities, etc.)? Were they more likely to correct female students’ behaviors or male students’ behaviors?

• Write these differences down to be shared with the class
What females focus on in the classroom

- Female teachers in classrooms are more likely to focus on the class learning together rather than just teaching in front of everyone.

  - In a study done by Thomas Nelson-Liard, female teachers spend 13% more class time on group and classroom-wide activities.

  - In this same study, it was shown that female teachers spend 10% less time on lecturing their students.
What males focus on in the classroom

Male teachers prefer lecturing over classroom activities

- As seen in the slide before, male teachers are less likely to focus on classroom activities, especially in subjects like sciences, mathematics and economics.

- Because of this, having a male teacher in these kinds of subjects will help students perform better in these subjects (Nleson-Liard, T., 2006).
Is teaching for females only?

- Teaching has been seen as a female-dominated field, but, as of late, in several western countries, education systems have been striving to have more male teachers (Skeleton, C., 2003).

- Because of this, male teachers who teach ages 7-11 are going to be concerned about maintaining a very masculine presence in the classroom, according to Christine Skeleton.
Why females choose to teach vs. why males choose to teach

• According to an article by Alex McEwen, females are more likely to choose teaching as a profession because they feel like they belong in that profession.

• In contrast, males will choose to become a teacher for external rewards, like money, praise, etc.

• In this same article, it was revealed that males will choose to teach older students to avoid negative social stigma, whereas females do not have to worry about this stigma.
Differences in student-teacher interactions: males vs. females

• In the classroom, male and female teachers, interestingly enough, are more likely to praise and encourage male students, and simply compliment female students

• However, in science classrooms, according to an article by M. Gail Jones, female teachers are more like to warn male students to be careful (or other warnings), and male teachers warn both genders equally
Physical effects of teaching on males and females

- The complaint that teachers had the most about their physical self was losing their voices, and when they lose their voice, 39% of teachers (male and females) report having to cut back on teaching activities (Lemke, J.H., 1998)

- In an article by Jon H. Lemke, females are more likely to report problems with losing their voices and physical discomfort

- Males are less likely to report this discomfort

- Because of this, overtime, teachers' voices will be adversely effected by this discomfort later in their career
Emotional Effects of teaching

• Both male and female teachers suffer from something called “burnout”, according to R.J. Burke, but how burnout effects each gender is very different

• Female teachers are more likely to get headaches, suffer from depression, and suffer role conflict in their jobs

• Males who are burnt out are more likely to experience doubt within their jobs and feel as though they lack competence


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