

# Brain Ability and Its Correlation in Separation Classes for Men and Women in Islamic Educational Institutions

Nurul Lubab Abdillah<sup>1</sup>, Wantini<sup>2</sup>,  
<sup>1</sup>Universitas Ahmad Dahlan Yogyakarta  
<sup>2</sup>Universitas Ahmad Dahlan Yogyakarta  
\*lubab.me@gmail.com

## ARTICLE INFO

### Article history

Received December 12, 2024  
Revised December 30, 2024  
Accepted December 31, 2024

**Keywords:** Brain ability,  
Separation classes, Islamic  
Educational Institution

## ABSTRACT

The purpose of this research is to find a step solution for how to manage classes based on gender while still optimizing the character of the brain. This research method uses a qualitative approach. The results of this research are the differentiation of male and female brains in general in the corpus callosum and Broca-Wernicke's area. This causes women to be more able to carry out several tasks at one time and women are better able to control their emotions. In addition, women also have better language skills, as reflected in the large number of vocabulary products. In Islamic educational institutions, the segregation of classes based on gender is a rule based on religion. In Islam men and women. And it was found that class separation based on gender had the following positive impacts: first, students were more focused. Second, growing awareness that there are boundaries with the opposite sex. Third, increasing learning outcomes. The results of this study have implications for educators to take attitudes and steps in class management by paying attention to existing characters and potential.

## 1. INTRODUCTION

In humans there is a very important part, namely the brain. The human brain functions as a control center, whose job is to regulate all movement activities carried out by humans. The brain is located in the upper part of the human body which is protected by the skull bones (Ahmat Miftakul Huda and Suyadi 2020). Brain optimization is an effort to maximize the function of all parts of the brain by involving as many senses as possible together. Biologically, God created humans into two types, namely women and men, who grow and develop according to their biological characteristics. In essence, humans are equipped with various potentials. It is integrated with the human physique to carry out its duties of leading and bringing benefit to the Earth (Amin 2018).

Educational success is greatly influenced by maximum classroom management. Classes designed and managed with a classroom approach depend heavily on the teacher's knowledge,

abilities, attitudes and relationships between students (Harsanto 2007). As the world of education and science develops, it is discovered that men and women have several fundamental differences from a biological, social and cultural perspective, including. This gives rise to adjustments in rules and habits between men and women. In the end, several educational institutions implemented a homogeneous class system, namely separating male and female students into classes of the same gender. Separating classes according to gender gives rise to rules or the overall process of activities being adjusted between women and men (Thoriquttyas 2018). This segregation system originates from the main principle of SSPE (*Single Sex Public Education*) that a competitive atmosphere is appropriate for the development of boys and girls require a cooperative learning environment and a calmer atmosphere.

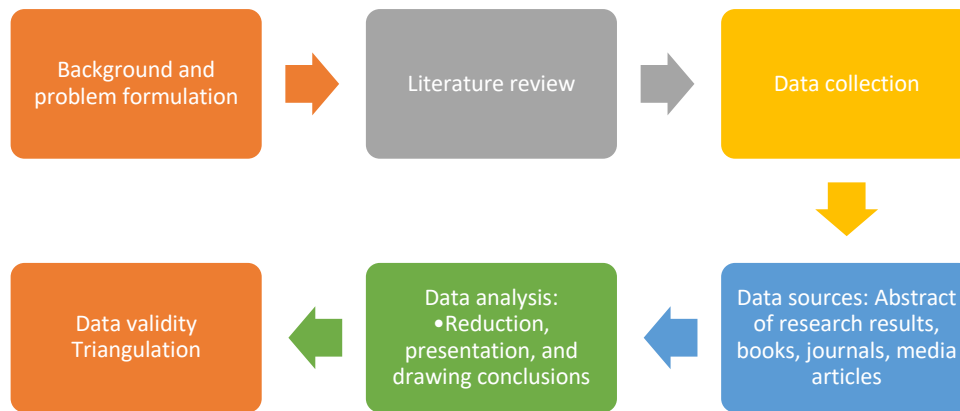
There is previous research that is relevant to this research. Non Erna Sri Utami tries to connect gender with learning outcomes. He found that there were differences in the learning achievements of male and female students due to differences in brain structure (Non Erna Sri Utami 2020). Furthermore, M Syahrudi Amin strengthened research on differences in the brains of men and women. Gender differences give rise to different brain potential and characteristics. This potential can be explored with the right educational process (Amin 2018). In line with Barotut Taqiyah, he found that there was an influence of separation based on gender on learning motivation (Taqiyah 2016). Furthermore, research from Egi Kurniawan et al. who researched the relationship between class separation in PAI learning. He found the effect of implementing class separation (*single sex education*) which is significant to learning motivation (Kurniawan, Ghazal, and Ra Syid 2017). Apart from that, other research also reveals that gender-based classes have several advantages, namely: having attractiveness and distinctive characteristics in educational institutions (Humairoh 2019).

This article's research is different from previous articles, this research examines in depth the separation of classes according to neuroscience with various approaches. Apart from using a neuroscience approach, this research also includes other scientific fields such as gender and the Koran. The problem of this research is to determine the correlation between male and female brain differentiation and class separation in Islamic educational institutions. Therefore, this study is important to carry out in order to become a basis for the process of selecting teaching methods in the classroom that are more appropriate to its character.

## 2. METHODS

This research uses a qualitative approach. In the discussion, this qualitative approach is felt to be deeper and broader. Regarding the type of research, this is research *libray research* (literature review). This research data comes from scientific articles, journals, books related to the differentiation of male and female brains as seen from the perspective of neuroscience, gender and Islamic education. Existing data is analyzed critically using Content Analysis technology,

namely grouping data related to the discussion of several ideas or concepts separately to obtain specific and adequate results. then describe, discuss and criticize it (Mulyana 2017). The following is the research steps carried out:



**Gambar 1. Research Steps**

### 3. RESULTS AND DISCUSSION

#### 3.1. The Human Brain

The brain is a small organ that functions as the center of the nervous system, the control and coordination center for all biological activities, and so on from every part of the body. The brain is inside the skull, which has an average volume of around 1700 ml. The skull contains 80% (1400 ml) brain, 10% (150 ml) brain fluid, and 10% (150 ml) blood. The human brain is only 2% of the body's weight, which weighs around 1300-1400 grams. The brain is the keeper of our memories and is the source of all thoughts, desires and feelings. In the brain there are 1 trillion neuroglia cells and 100 billion neuron cells. One neuron can make 10,000 or even 100,000 dendrite branches, so that 1000 trillion will be formed. *synapse* or communication connection (Rakhmat 2005).

The brain is divided into 3 main parts, namely: *the brain* (cerebellum), *cerebrum* (cerebrum), and *brainsteam* (brain stem). The cerebellum is located close to the tip of the neck, and at the top of the back of the head. The cerebellum is the brain that works to regulate various automatic functions such as maintaining balance and controlling the body and coordinating muscles with body movements. Apart from that, the cerebellum can also carry out reflex movements that occur suddenly or spontaneously, but these reflex movements have already been recorded in the brain. The big brain is the brain that is related to learning activities or related to education. The cerebrum has the task of controlling all activities related to consciousness, memory and intelligence. This part of the brain regulates conscious movements in accordance with the will. The brain stem has the task of regulating all basic human life, for example the respiratory system, digestive system, regulating body temperature and as a source of basic human instincts when experiencing urgent conditions.

The brain's working mechanism is by capturing all stimuli through the work of neural circuits, nerve cells and neurotransmitters to be understood or perceived (Wathan 2016). Based on its function, the brain is called the center of control and control of activities carried out by humans. So if the brain is functioning perfectly, a person will be able to think intelligently so that he is able to behave optimally as expected. However, most people in this world rely more on their brains only partially. Like people rely more on their left brain than their right brain. This results in not maximizing brain function optimally (Ahmat Miftakul Huda and Suyadi 2020)

Differences between male and female brains Describe Structurally there are differences between the brains of men and women which give rise to differences in intellectual aspects, both in thinking, perception, communication, and others (Brizendine 2006). The brain is closely related to intelligence. Intelligence is defined as the ability a person has to adapt to the environment (Sternberg and Kaufman 2011). Learning success is believed to be greatly influenced by the level of intelligence. The higher a person's level of intelligence, the higher the learning achievement that can be achieved (Khodijah 2014). Research on differences in the intelligence levels of men and women is based on and associated with differences in brain physiology. In general, brain size is different between men and women. In general, men's brain volume is larger than women's, namely a volume of around 1,260 cm<sup>3</sup> while a woman's volume is around 1,130 cm<sup>3</sup> (Zaidi 2010). In studies of male and female brain types related to intelligence, it turns out there are differences of opinion. Men's brains are smarter than women's, in line with Jaušovec and Pahor (2017) explaining that there is a positive correlation between the level of intelligence and brain volume. However, there is research that women are actually superior in achievement (Voyer and Voyer 2014). So basically the level of intelligence varies depending on each individual because the brain is dynamic.

Based on brain function in thinking mechanisms, the differences between men's and women's brains are found in the corpus callosum and Broca-Wernicke area (Suyadi 2018). The corpus callosum is a part of the brain that is shaped like a thick band, located between the limbic system and the cerebrum. The function of the corpus collasum is to connect the left and right brain with the limbic system which functions to regulate emotions, so that the brain is able to work holistically. The thickness of the corpus callosum in men is thinner than in women, so it is more difficult for men to carry out activities or tasks holistically. Meanwhile, women are able to carry out several activities simultaneously at the same time. The Corpus Callosum plays a major role in regulating emotions (Pasiak 2012). So women are better able to control their emotions than men. Because the nerve fibers of the male corpus callosum are not too thick, it is easier for men to determine rational attitudes more effectively than women.

Broca's and Wernicke's parts are parts of the brain that regulate speech understanding and regulate language. Broca's area in men is smaller than in women. This results in men's mastery of language and understanding of word articulation being worse than women. Women are able to produce a word reserve of 25,000 words while men have 12,000. This is confirmed by research from

Ahmad (2017) that the number of words spoken by men is 5000 – 7000 more than women. In other research, based on differences in the brain anatomy of men and women, there are also differences in the hypothalamus, inferior parietal lobe and hippocampus. These anatomical differences will result in differentiation of ways and styles of acting, including in learning activities (Amin 2018).

In general, women's hypothalamus is 2.5 to 3 times smaller than men's. Because of this, women have a lower level of responsiveness to stimuli in the form of sound and touch than to emotions alone. Meanwhile, women are the opposite. because the hypothalamus functions, among other things, to respond to various existing stimuli, regulate hormones (*endocrine system*), and controls the autonomic nervous system. Based on the results of MRI testing (*magnetic resonance imaging*) shows that the part of the brain responsible for the design ability is *inferior parietal lobe* in women it is 6% smaller than in men. This section deals with mechanical design capabilities, measurement of abstraction direction determination, and manipulation of physical objects. Because of size *inferior parietal lobe* men are thicker then this ability is better. Men's brains have a smaller hippocampus than women's brains. Therefore, men forget more easily than women. In terms of memory ability, women are quite good and are able to get to the details, even in a longer time. Meanwhile, based on their thinking style, in terms of differences in structure and function, men think more legislatively, liberally and globally, while women's character is more executive, juridical, conservative and local (Aziz 2008).

### 3.2. Class Separation Based On Gender Islamic Perspective

According to Wicaksana, a class is a room that is used to carry out teaching and learning activities through educational interactions by a group of students (Wicaksana 2016). Meanwhile, segregation means separating, experts explain that segregation is separating one group from another group. Class separation or grouping of students is based on differences or similarities between students. The similarities that exist in students give rise to ideas about placing them in the same group and in the same environment, while the differences that exist in students give rise to ideas about grouping them into different groups such as gender in Islamic education. (Prihatin 2011).

The class separation method is applied in order to improve the quality of students' understanding. The learning model applies homogeneous classes which is done by separating classes according to gender. This means that in one class there are only women or only men. This is a strategy so that students are less easily distracted when studying so that learning is more focused. Class separation based on similarity is also called homogeneous classes. Homogeneous learning classes are groupings of classes with the same background, for example students who have similarities in gender, ethnicity, race, age and socio-economic strata. This class management pattern has become a class grouping model applied in educational institutions in Indonesia, especially Islamic educational institutions. There are several class management or class groupings that are often used. Such as: grouping based on gender, based on ability, based on alphabet, and based on time (Chatib and Said 2012).

Class grouping based on a gender perspective can be divided into three models, namely: gender neutral, gender responsive and gender biased policies. *First*, Gender neutral policy is a policy without considering the differences in situations and needs between male and female students and female students are treated equally. *Second*, Gender bias policies are groupings made on the basis of negative assumptions or considerations of bad impacts on women or men so as not to cause undesirable things. This model is usually used in Islamic educational institutions in an effort to avoid *conflict*. *Third*, gender responsive policy is the grouping of classes based on gender based on consideration of differences in potential, conditions and needs between the two students (Fakih 1999). The aim of gender responsive policies in class grouping is to encourage the realization of the principles of justice both in terms of planning, decision making, policy implementation and control functions (PSW 2005). So, in this case, schools must pay attention to overall school management in order to create a supportive learning environment for each class group.

It cannot be denied that there are differences between men and women. Each has a nature that is within him. One of these differences is from a biological perspective. The Koran hints in Q.S. An-Nisa: 32 about the differences between men and women, that each has privileges and nobility. Gender in the Islamic view sees that men and women are equal before Allah. However, they still have their own roles and values, such as men as leaders of women (QS. An-Nisa: 34). Allah created His creatures, namely humans, to have a duty as *khalifatullah*, who has the responsibility to lead, regulate and prosper nature, achieving the main goal of saving a dignified human civilization. Thus, in Islam men and women have an equal and comprehensive role before Allah as servants who carry out their trust and obligations with all their potential.

Separation of classes based on gender is a class model taken from religious rules. In Islam, there is a view that men and women are two types, which can give rise to lust or negative potential if they have intense and special views. Of course, if they are unable to control it, then direct contact and interaction with high intensity is face to face between men and women. One way to prevent and avoid this is with a class separation system (Mu'tamaroh 2018). The model of class separation between men and women based on gender differences has become a rule that is often found in Islamic educational institutions such as Islamic boarding schools (Fuaidi 2021). This separation is carried out by using different learning spaces for men and women, both of whom are not in the same class because there are special restrictions that refer to Islamic teachings, namely limiting interactions between men and women in order to prevent the emergence of *ikhtilath* that triggers problems. acts of adultery and increased lust (Kasmawati Kasmawati 2013).

From an Islamic perspective, there are differences in views in Islam regarding the prohibition of men mixing with non-mahram women. However, this actually happens because it is related to whether there is a compatibility with the Shari'ah or a lack of compatibility. The existing Sharia rule is that *ikhtilat* (mixing) is permitted when there is a matter or *wish* which is permitted and still maintains the rules of the Shari'ah. It becomes haram or impermissible when the mixing of men and

women meets the following criteria: (1) *solitude* which arouses lust with *shahwat*; (2) associate with a woman who has no modesty in her; (3) touching each other on the body parts. And *advice* In this case the law is haram because it is not in accordance with the rules of the Sharia.

Based on this Shari'a, we can conclude that it is permissible for women to leave the house and meet men or vice versa for the purpose of congregational prayers and holiday prayers. As some scholars allow women to perform the Hajj pilgrimage with a trusted male relative/friend who is not a mahram, doing muamalah such as buying and selling, working and other muamalah that do not violate sharia rules. Likewise, the ability for men and women to carry out learning activities together in the same place is subject to existing limitations. So regarding class separation in the true Islamic view in learning activities between men and women in the learning process it is not mandatory, but if it is done it is also good in order to avoid undesirable things happening.

Etymologically, Institution can mean organization and body. In the KBBI (Big Indonesian Dictionary) the word institution is defined as an organization whose aim is to carry out scientific research or carry out an effort to provide education (Language Center, Department of National Education, 2008). So that educational institutions are organizations or groups of people who bear responsibility for education and real efforts for students. In another sense, an educational institution means a place where educational activities occur through interaction with the surrounding environment with the aim of changing student behavior for the better. Therefore, it can be understood that an Islamic educational institution is a place or body that provides Islamic education within it, which has a clear structure, goals and vision and is responsible for the implementation of Islamic education. Islamic educational institutions must be able to create an atmosphere and environment that allows the implementation of Islamic education well, according to the mandate and objectives that have been determined (Umar 2010).

The existence of Islamic educational institutions is currently very necessary for the smooth and successful education process, especially in Indonesia. With the majority of its citizens being Muslim, Islamic educational institutions are one of the institutions where education within an Islamic framework is able to carry out its duties in order to achieve the ideals of Muslims.

The classroom environment must be able to stimulate students to activate their brain potential. The influence of the working mechanisms of the brain provides an important position in understanding each student's changes in learning behavior under varying conditions (Nuraeni 2014). The fact of brain differentiation is the basis for providing treatment and behavior because the brain has a big impact on the working mechanisms of the brain and the way students learn. Although this cannot be absolutely guaranteed to happen, it is mostly true. Optimizing the brain work of students in both male and female classes begins with understanding the differences in their respective characters. Optimal use of brain function is the result of a dynamic and comprehensive interactive process with the environment which includes physical, mental and emotional characteristics which



results in effective and efficient integration of brain function and leads to the maximum development of human abilities.

In a male-only class, learning must refer to a priority scale and gradually, because the level of concentration and focus will be fast on one thing, on what is being studied. In this case, classes containing male students must always strive to ensure that the learning process is systematic. Male students think more systematically, male students are able to think openly and abstractly to come up with new, brilliant ideas. However, you have to be patient because they tend not to be able to hold back emotions or feelings. Meanwhile, in women's classes, learning contains more real activities. In their thinking, women are still based on concrete experiments, and experience difficulties in abstract observations.

Based on the development phase and differences in the brain structure of male and female students, students prefer to learn to understand concepts by visually looking at pictures, graphs, or learning through motor activities such as practice, assembling, projects, designing, and so on, still using their right brain more. Students prefer moving body activities in the process of understanding something. Meanwhile, when studying material, female students prefer mental and thinking activities such as reading, writing, discussing with friends, or through other communication patterns such as acting because female students' language skills are better and faster than students in terms of language. However, at secondary and higher education levels, male students like challenges. In learning they are interested in new things. There is adrenaline and curiosity and a desire to solve a new or challenging problem, especially one that requires them to be involved. This behavior is influenced by the effects of the testosterone hormone and the effects of the left brain. Therefore, educators must always innovate in their learning activities so that the material presented always makes male students interested in focusing and studying it, either by asking them to solve a problem, holding competitions, debates, and so on. Meanwhile, for female students, the learning process is certainly different. Female students will prefer to experience the learning process and be able to understand or solve a problem by prioritizing strong communication that is convincing and emphasizes collaboration, such as group learning. Some activities that can be carried out are discussions, collaboration, formulating a common understanding, presentations, lectures, and so on.

The condition of the women's class which contains all women. Teachers find it easier to control them compared to the male class. The class becomes clean and tidy if it is managed by female students, it is easier for teachers to condition and manage the atmosphere and classroom environment, social interactions are maintained, learning feels safe and comfortable, students focus on learning, are active in asking and answering, are more independent, and improve learning outcomes and student achievements because they feel they have the same character. Class grouping based on gender is carried out in Islamic educational institutions because it has a positive impact. These benefits are:

*First*, Students' focus on learning activities is better because they are not distracted by thoughts of the opposite sex. In homogeneous classes, a lot of time and thought is taken up seeking the



attention of members of the opposite sex (Hasballah 2014). *Second*, the emergence of awareness within oneself that there are boundaries that must be maintained in establishing communication between men and women, as well as having a more secure circle of friends (Khansya Aqilla and Parihat Kamil 2022). *Third*, improving student learning outcomes because classroom management has been adjusted to the characteristics of the brain and its optimization. Class separation can result in higher learning achievement compared to schools that implement a heterogeneous class system without paying attention to gender differences. The class separation system makes learning more comfortable and more independent.

The class separation between men and women in learning activities at school does not mean there is no interaction between them. It's just that grouping occurs during the learning process, the rest of the time they continue to interact in the school environment. There are even activities that can be done together, such as congregational prayers and recitation of the Koran. So that students do not experience difficulties in interacting but are still able to maintain boundaries towards the opposite sex even though they are in the same environment.

#### 4. CONCLUSION

Pemisahan Separation of classes based on gender is a class grouping model that is based on religious provisions. In Islam, men and women have limits in interacting. It is mandatory to separate them when it is prohibited and in accordance with the rules and conditions of the ihtilath in question

In the context of optimizing brain function and related to the differences in male and female brains, implementing class segregation based on gender can be a solution so that classroom management can be successful and achieve learning achievement. The physiological differences in the brains of men and women are in the corpus callosum and Broca-Wernicke's area. This causes women to be better able to carry out several tasks at one time and women are better able to control their emotions.

Separating classes based on gender has the following positive impacts: *First*, Students are more focused. *Second*, Raising awareness that there are boundaries with the opposite sex, *Third*, improve learning outcomes.

## 5. REFERENCES

- Ahmat Miftakul Huda, and Suyadi. 2020. "Otak Dan Akal Dalam Kajian Al-Quran Dan Neurosains." *Jurnal Pendidikan Islam Indonesia* 5(1):67–79. doi: 10.35316/jpii.v5i1.242.
- Amin, M. Syahrudin. 2018. "Perbedaan Struktur Otak Dan Perilaku Belajar Antara Pria Dan Wanita; Eksplanasi Dalam Sudut Pandang Neuro Sains Dan Filsafat." *Jurnal Filsafat Indonesia* 1(1):38. doi: 10.23887/jfi.v1i1.13973.
- Aziz, Rahmat. 2008. "Mengapa Perempuan Lebih Kreatif Dibanding Laki-Laki?" *Uin Malang* 35(1977):20–23.
- Brizendine, L. 2006. *The Female Brain (1 Ed.)*. New York, NY: Morgan Road Books.
- Chatib, Munif, and Alamsyah Said. 2012. *Sekolah Anak-Anak Juara: Berbasis Kecerdasan Jamak Dan Pendidikan Berkeadilan*. Bandung: PT Mizan Pustaka.
- Fakih, Mansour. 1999. *Analisis Gender Dan Transformasi Sosial*. Yogyakarta: Pustaka Pelajar.
- Fuaidi, Muhammad Hilmi. 2021. "Implementasi Segregasi Kelas Berbasis Jenis Kelamin Dalam Menumbuhkan Motivasi Belajar Di Madrasah Aliyah Al-Khoiroh Pagelaran Kabupaten Malang."
- Harsanto, Radno. 2007. *Pengelolaan Kelas Yang Dinamis*. Yogyakarta: Kanisius.
- Hasballah, H. Zamakhasyari. 2014. "Pemisahan Kelas Pelajar Wanita Dan Pria Di Sekolah Menengah Untuk Penguatan Syari'at Islam Di Kota Langsa." *Jurnal Samudera Keadilan* 2.
- Humairoh, Uum. 2019. "Manajemen Kelas Berbasis Gender Tunggal (Di SD IT Salsabila Bekasi Dan SD IT Wildan Bekasi)." (21170181000046).
- Kasmawati Kasmawati. 2013. "Gender Dalam Perspektif Islam." *Al-Maiyyah* 1(1):55–68.
- Khansya Aqilla, and Parihat Kamil. 2022. "Dampak Pemisahan Kelas Berbasis Gender Terhadap Komunikasi Antarpribadi Dengan Lawan Jenis." *Jurnal Riset Komunikasi Penyiaran Islam* 99–104. doi: 10.29313/jrkpi.vi.1431.
- Khodijah, N. 2014. *Psikologi Pendidikan*. Jakarta: Raja Grafindo Persada.
- Kurniawan, Egi, Sobar Al Ghazali Ghazal, and A. .. Rasyid. 2017. "Pengaruh Pelaksanaan Pembelajaran PAI Dengan Pola Single Sex Education Terhadap Motivasi Belajar Peserta Didik Di MTs Al- Mudzakkirin Argapura Majalengka Tahun Akademi 2016 / 2017." 304–9.
- Mu'tamaroh, N. 2018. "Implementasi Kebijakan Segregasi Kelas Berbasis Gender Di SMPI Al Maarif 01 Singosari." *Universitas Muhammadiyah Malang*.
- Mulyana, Dedy. 2017. *Metodologi Penelitian Kualitatif*. Bandung: PT. Remaja Rosdakarya.
- Non Erna Sri Utami, Devi Afriyuni Yonanda. 2020. "Hubungan Gender Terhadap Prestasi Belajar Siswa." *Seminar Nasional Pendidikan, FKIP UNMA* 2(Smyth 2015):144–49.
- Nuraeni, Lenny. 2014. "Pendidikan Berbasis Neuropedagogis." *Didaktik* 8:12.
- Pasiak, Taufiq. 2012. "Pendidikan Karakter Sebagai Pendidikan Otak," *Dalam Mengatasi Masalah Narkoba Dengan Welas Asih*. Jakarta: Gramedia Pustaka Utama.
- Prihatin. 2011. *Manajemen Peserta Didik*. Bandung: Alfabeta.

- PSW. 2005. *Gender Best Practices: Pengarusutamaan Gender UIN Sunan Kalijaga*. Yogyakarta: PSW UIN Sunan Kalijaga.
- Pusat Bahasa Departemen pendidikan Nasional. 2008. *Kamus Besar Bahasa Indonesia*. Jakarta: PT Gramedia.
- Rakhmat, Jalaluddin. 2005. *Belajar Cerdas Belajar Berbasis Otak*. Bandung: MLC. Bandung: MLC.
- Sternberg, R. J., and S. B. Kaufman. 2011. *The Cambridge Handbook of Intelligence*. Cambridge: Cambridge University Press.
- Suyadi, Suyadi. 2018. "Diferensiasi Otak Laki-Laki Dan Perempuan Guru Taman Kanak-Kanak Aisyiyah Nyai Ahmad Dahlan Yogyakarta: Studi Pendidikan Islam Anak Usia Dini Perspektif Gender Dan Neurosains." *Sawwa: Jurnal Studi Gender* 13(2):179. doi: 10.21580/sa.v13i2.2927.
- Taqiyah, Barotut. 2016. "Pengaruh Pemisahan Kelas Peserta Didik Laki-Laki Dan Perempuan Terhadap Motivasi Belajar Siswa Kelas X Pada Mata Pelajaran Akidah Akhlak Di MA Sunan Pandanaran Yogyakarta." *Universitas Negeri Sunan Kalijaga Yogyakarta*.
- Thoriquttyas, Titis. 2018. "Segregasi Gender Dalam Manajemen Peserta Didik Di Lembaga Pendidikan Islam." *Martabat: Jurnal Perempuan Dan Anak* 2(2). doi: 10.21274/martabat.2018.2.2.287-314.
- Umar, Bukhari. 2010. *Ilmu Pendidikan Islam*. Jakarta: Amzah.
- Voyer, D., and S. D. Voyer. 2014. "Gender Differences in Scholastic Achievement: A Meta-Analysis." *Psychological Bulletin* 140(4):1174–1204.
- Wathan, Aminul. 2016. "Neurosains Dalam Pendidikan: Kajian Keagamaan, Keilmuan Dan Teknologi." *Jurnal Lentera* 14.
- Wicaksana, Arif. 2016. "Kajian Pengelolaan Kelas Belajar Homogen." <https://Medium.Com/>.
- Zaidi, Z. F. 2010. "Gender Differences in Human Brain: A Review." *The Open Anatomy Journal* 2:35–37.