The Impact of Co-Education on Cognitive Development and Academic Achievement at The Tertiary Level: A Case Study from District Peshawar

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ABSTRACT:

This study examined the impact of co-education (mixed-gender education) on cognitive development and academic achievement, with a specific focus on tertiary level students in District Peshawar, Pakistan. Co-education, the integration of male and female students in the same educational environment, is common in early education but decreases at higher levels of schooling. Previous research has shown that the educational environment plays a crucial role in shaping students' self-esteem and cognitive development, with notable differences between coeducational and single-sex settings. The study found that, while co-education may foster social integration, it can also present challenges for students, especially at lower educational levels, where distractions may hinder academic performance. However, at the tertiary level, students are better equipped to manage the social dynamics of a mixed-gender environment, allowing them to focus more on academic goals. The study highlighted emotional and social difficulties, such as shyness, inferiority complexes, and the impact of societal expectations, which can affect students in co-educational settings. The findings suggest that, while co- education has potential benefits, it may also contribute to psychological concerns, particularly in culturally conservative contexts. Recommendations include reconsidering co-education in certain cultural settings, providing support systems for students, and promoting parental involvement to better navigate the challenges of mixed-gender classrooms.

Key Words: co-education, academic achievement, cognitive development

INTRODUCTION

Mixed-sex or mixed-gender education is another term for co-education (Erdoğdu 2020). Accordingly, it's called the academic integration of boys and girls in the same organization or the inclusion of students, male or female, in a single school environment (Wong, Shi & Chen 2018). It's been Goldin and Katz (2011) noted that co- educational organizations are the establishments that are housing both male and female students in separate classrooms. Co-education is currently the most prevalent feature of pre-school advancements. The percentage of coeducational facilities decreases steadily with the age

of the pupils in nearly every nation. There are typically more coeducational settings in the early years and primary phase, and then fewer and fewer of those settings until the secondary stage (Sari 2017).

The science of education is cognitive. However, there is a clear link between the neuroscience of cognition and the science of learning and education, more emphasis should be placed on it. Numerous studies have demonstrated the impact of the educational environment on females' self- esteem. Girls' self-esteem in coeducational and single-sex schools may differ. According to studies, girls' self-esteem is still high while they are single as opposed to when they are co-ed. The school environment measures a variety of things, including social, athletic, and intellectual prestige. Research findings indicate that there may be differences in girls' self- esteem across households with coeducation and those with single parents. Compared to girls in a coeducational setting, girls in a single-sex education setting were less aware of and critical of their behavior. In the all-girls school, this absence of critique was the only best indicator of overall self- worth (Huisman & Currie, 2004).

When compared to students in elementary or secondary schools, university students typically enjoy greater autonomy. For instance, they can select the courses they take and can participate in more activities. They are therefore expected to control their learning and advancement in their studies. Increasing accountability stems from increasing autonomy. In addition, it appears that young adults have higher standards from society and those in their close surroundings, such as family members, and that these expectations are frequently based on cultural norms. The shift from lower to higher school can be emotionally and academically taxing for individual students. According to Chishiro et al. (2018), the modifications may have a detrimental effect on people's resilience and anxiety levels, as well as their self-concept.

Likewise, young toddlers do not view asking a teacher for assistance as a sign of weakness, in contrast to university students. According to our observations, university students, on the other hand, frequently pause and worry about what their friends will think of them if they admit they don't know something or don't grasp it. Additionally, a person's social status within a group becomes more significant, and young adults and teenagers in particular may struggle with internal conflicts related to their self-worth. Furthermore, in terms of their behavioral, social, emotional, and cognitive development, university students demonstrate greater competence. Their interests have changed since they were young, and they have particular expectations for their schooling. When compared to schoolchildren, university students typically have more mature personality traits and well-defined goals (Brooks et al., 2013).

LITERATURE REVIEW

Both male and female students' learning prospects in a school setting are harmed by the pervasive stereotype of male pupils as underachievers who are disadvantaged (Mills, 2007). According to Keddie (2009), this portrayal has been characterized as a reaction to previous pro-feminist initiatives that aimed to advance gender parity and the adoption of a wide, problematic view of evolving masculinities. According to Foster (1992), it presents male gender identities as homogeneous and gender-neutral, representing an institutionally legitimized hegemonic masculinity that is characterized by resistance to feminine and marginalized masculinities. The detrimental impacts of dominant masculinity in the classroom have been extensively studied. Among these effects are male students who bully female students and male students who do not identify with the dominant achievement of masculinity by utilizing inappropriate conduct to control classroom interactions (Dalley-Trim, 2007; Kenway & Fitzclarence, 1997; Mael, 1998; Tsolidis & Dobson, 2006).

According to research, promoting diverse learning styles and using distinct pedagogies and learning strategies are the best ways to facilitate learning for men and women (Button, 2012). Because of this, there is a common belief based on stereotypes about men and women that male students like hands-on learning activities, whereas female students need highly verbal learning experiences (Grady et al., 2005; Delfos, 2005; Mills et al., 2007). However, studies on neural processes have not referred to this disparity; rather, they have highlighted the elaborate nature of brain function and shown that men prefer

multi-modal learning methods whereas women prefer uni-modal forms (Button, 2012). The commonly held belief that women learn best in a collaborative educational community while men naturally prefer competitive educational endeavors influences school planning and policy today (Mills, 2007).

Many studies support this distinction, but they also claim that children pick up this preference because they are shaped by expectations to fit into standard gender roles (Grady et al., 2005; Tsolidis & Dobson, 2006). Research has overemphasized the disparities in cognitive sex and minimized the relevant similarities between male and female pupils. This bias is reinforced by traditional gender understandings (Button, 2012; Dollison, 1998; Foster, 1992). There is ample evidence of a cognitive distinction between male and female learners, but further research is necessary to prevent the reinforcement of prejudices (Anderson, 2006; Lingard et al, 2008). Gender equity concerns in learning environments, especially coeducational classes, are anticipated by the understanding that male and female students have distinct preferred learning methods (Crosswell & Hunter, 2012). In the past, calls for coeducational and single-sex courses in secondary schools have been sparked by the need to give male and female students equal learning opportunities (Yates, 2009). Current defenses of teaching only men in single-sex classrooms highlight the need for engaging pedagogy and pertinent curricula for male students. For all students, nevertheless, this might also be referred to as excellent teaching methods. It is not restricted by gender, and the applicability of educational activities to specific pupils cannot always be presumed to be determined by gender (Dollison, 1998; Foster, 1992; Mills et al, 2007).

Due to the deliberate and unintentional imposition of sex role norms by instructors, peers and school structures, research has demonstrated that student gender and gender performances have a substantial impact on the school experience (Dalley- Trim, 2007; Dollison, 1998; Lingard et al, 2008). Research demonstrates that most educators make a concerted effort to dispel prejudices and promote gender parity in the classroom. Nonetheless, there is still a discrepancy in the way male and female students interact in the classroom because teachers spend more time correcting male students' behavior, questioning them about the material, and engaging with male learners (Dunlop & Macdonald, 2004; Francis, 2000; Grey & Wilson, 2006; Younger & Warrington, 2002). To implement coeducation, teachers must intentionally embrace a gender-balanced pedagogy that recognizes each student's unique needs based on their assessed skills rather than gender stereotypes and encourages both male and female students to positively contribute to class discussion (Dunlop & Macdonald, 2004; Foster, 1992). To create and implement pedagogies that best suit the requirements of their pupils, teachers must have a problematized knowledge of masculinity (Grey & Leith, 2004; Kenway & Fitzclarence, 1997).

Research Objectives

1. To establish a connection between psychological issues and co-education

2. To examine the impact of coeducation on an individual's behavior

Research Questions

1. What psychological issues are associated with coeducation?

2. How does coeducation affect individual's behavior?

RESEARCH METHODOLOGY

Nature of this research is qualitative. The primary reason qualitative research was chosen was that it begins with a philosophical supposition. It offers a thorough examination of emotions, perspectives, and circumstances. The procedure for gathering data and the design of the study are the same. Qualitative research is characterized by its flexibility and difficulty in replication. The chosen research method is the case study. The reason it was chosen was because "Case" studies are frequently used in qualitative research projects. A researcher considers a "case" in this study design and thoroughly

examines it. Only a small number of situations are chosen for in-depth analysis in case studies. A case study is both a research technique and an instrument (Singh, 2006). Interviews were chosen as the mode of data gathering. A questionnaire was used to conduct the interview. It was chosen since the interview contained enough information on the research issue. It helps investigate the root source of the issue.

Population

Population of the study is students of tertiary level (students of professional studies whose age ranges 18-23 years) of various universities. Students of Khyber medical University, University of Peshawar, and Agriculture University Peshawar were the target population.

Sampling

Convenience sampling technique was used to select the participants of the study. 16 undergraduate students were interviewed. Semi-structured interview was conducted having four themes; the detrimental impact of coeducation on Pakhtun society's intellectual growth, Co-education and psychological issues, the environment's influence on cognitive development, and Strategies implemented to overcome psychological issues.

FINDINGS OF THE STUDY

Coeducation may have a negative impact on intellectual growth in contemporary society. Students lack the maturity to deal with a mixed-gender atmosphere. Their attention and mental energy are being directed into being more popular with people of the other gender, rather than studying. It is a proven truth that when students reflect on their studies and scientific findings, their comprehension improves and their self-esteem rises. However, in today's society, kids used to worry about how they looked and would only engage in extracurricular activities to appear "Cool." All of these actions are taken solely to gain popularity with people of the opposing gender. They chat about other people more often.

The majority of students experience shyness when they are with people of the opposite gender, which is another detrimental impact of co-education on our cognitive development. They are unable to ask questions. It is a fact that knowing more about any subject or topic might be gained by asking insightful questions. Girls in particular experience shyness while asking questions from teachers. Because there is an opposing gender, women experience greater emotional suffering. Student revolts occur when a harsh environment is offered. Also, due to the limited character of our culture, even teachers are unable to adequately explain subjects like reproductive systems.

When we examine our society and culture, we are constantly told that males and girls should not sit or converse together or be together. However, co-education goes against the standards and beliefs of our culture. Students feel depressed and hopeless in this setting. According to a step- by-step analysis of the respondents' opinions, some pupils connect well with people of the opposite gender whereas some do not. Good interpersonal skills make one feel better than others, whereas poor interpersonal skills make one feel inferior to others.

Students who possess strong interpersonal abilities begin building relationships. Should their relationship fail to find a bright future, it would leave them feeling dejected and disappointed. There are instances where people commit suicide attacks. It has been noted that less talkative and shy students are teased, that they are incapable of giving presentations and that talkative students make fun of the quieter, shyer kids. These all contribute to inferiority complexes. Conversely, people who have been imprisoned by an inferiority complex are unable to realize their full potential. In summary, we can say that co-education may bring up several psychological concerns in pakhtun culture.

Understanding the connection between age and environment and cognitive development was the main goal of this question. It is evident that as time goes on, cognitive development occurs as well. However, does the environment have an impact on all kids or not? I'm asking if everyone's cognitive growth advances at the same rate.

This respondent was asked the query mentioned above to provide an answer. The main takeaway from their answers was that, when they started their higher education, their level of maturity had improved

since they were more mature. This led to a notable increase in their cognitive development.

2. They pursued practical subjects at the tertiary level, which points the way towards a practical life. Higher secondary students perceive the future as blank because they are unsure of what comes next. Nonetheless, a few respondents held opposing opinions. They believe that since there's no interference from the presence of people of different genders at the upper secondary level, it is easier for students to understand the material. Another factor is that in the secondary and upper secondary levels, students are always considering their future careers. Right now, relationships between books are more important than relationships between people. In comparison to the tertiary level, performance at the secondary and higher secondary levels is good.

According to respondents, co-education violates ethnic, traditional, and cultural norms and values. However, it also has some positive aspects, so rather than closing it down, we should develop it or make a few changes. A female's hijab is an option. Students who wear uniforms can avoid developing a sense of inferiority as a result of their different socioeconomic backgrounds.

Student training is crucial since it can enhance a student's academic achievement if they know how to handle difficult situations. Students need to understand that each person is endowed by God with some distinct qualities.

Teachers have a responsibility to help students comprehend and become aware of the potential that each individual possesses. It will change their personality from one of weakness to inventiveness. Pupils are capable, but they cannot communicate themselves. When their expectations are not met, they become depressed. The home is the place where children are raised to improve their efficiency. We ought to support them. Before allowing our children to participate in co-education, we should teach them; if not, it is preferable to keep themapart. However, raising parents' awareness of this is a crucial first step.

CONCLUSIONS

The study concludes that co-education may have a detrimental effect on students' intellectual development because it causes them to prioritize social dynamics over academic endeavors, especially when it comes to interactions with people of the oppositegender.

Higher education levels are associated with better cognitive development and maturity in pupils, according to the study, which suggests that experience and age may be able to offset some of the detrimental impacts of co-education. Particularly in the Pakhtun culture, co-education has been connected to several psychological problems such as shyness, emotional anguish, and inferiority complexes. The presence of pupils of a different gender in the classroom can cause discomfort and make it more difficult for them to fully participate in learning activities like asking questions and holding discussions. The study concludes that co-education frequently runs counter to Pakhtun society's ethnic, traditional, and cultural norms and values. Students may experience feelings of discouragement and melancholy as a result of this cultural conflict, especially those who find it difficult to balance their academic environment with society's expectations.

The study highlights how important it is for teachers to support their pupils in realizing their potential and turning their areas of weakness into areas of strength. It also emphasizes the significance of family engagement in preparing kids for co- education, recommending that parents be made aware of the advantages and possible drawbacks of co-education. The study concludes that different educational levels have different effects of co-education on cognitive development. While younger secondary students could find it difficult to cope with the distractions and difficulties of a mixed-gender classroom, more mature tertiary students are better equipped to manage these situations and concentrate on their academic and practical goals.

RECOMMENDATIONS

Co-education may be reconsidered by educational officials in areas with strong cultural values, like the Pakhtun culture, especially at lower educational levels where students are less mature. It is important to create programs that inform parents of the advantages and possible drawbacks of co-education. Particularly in areas that are sensitive to cultural differences, parents ought to be urged to

take an active role in their children's education and offer assistance in navigating the social aspects of a mixed-gender setting. Higher education institutions ought to keep promoting coeducational models while also offering more resources to support students in concentrating on their academic objectives, as higher education levels are linked to improved cognitive growth and maturity. Academic counseling and mentoring programs may be useful in assisting students in coping with the distractions of a mixed-gender setting.

DISCUSSION:

This study explored the potential effects of co-education on students' intellectual development, particularly in the context of Pakhtun culture. The findings suggest that, for many students, co-education may negatively impact cognitive growth, primarily due to the distractions of social interactions in a mixed-gender environment. The results align with the notion that students in co-educational settings may be more focused on social relationships than academic pursuits, especially at the lower educational levels. These findings are consistent with earlier research that suggests social distractions, particularly in adolescence, can affect academic performance (Feldman & Scheck, 2009).

The study identified a significant cultural tension between co-education and the traditional values prevalent in Pakhtun society. In this cultural context, the presence o f the opposite gender in academic settings may lead to emotional discomfort, particularly among students who are not yet mature enough to manage these dynamics. The results indicated that many students experience psychological issues, such as shyness, emotional distress, and inferiority complexes, which align with previous studies that suggest co-education can exacerbate feelings of social anxiety and insecurity (Gilligan, 1982). In particular, the findings highlight that these issues are more pronounced in younger students, where developmental maturity is still progressing.

The study also underscores that, with maturity and higher educational levels, students may be better equipped to navigate the complexities of co-education. As students transition to tertiary education, their cognitive abilities and social skills tend to improve, allowing them to focus more on their academic goals and less on social dynamics. This finding supports the idea that cognitive development can be influenced by age and experience, as older students are more capable of managing distractions and balancing their academic and social environments. However, this does not negate the challenges faced by younger students, particularly in culturally conservative settings where mixed-gender interaction is viewed with skepticism.

Interestingly, some respondents in the study argued that co-education could be beneficial if implemented with sensitivity to cultural norms. This suggests that while co-education may conflict with traditional values, its negative impacts can be mitigated if proper support systems are in place. It is clear from the findings that the approach to co-education should not be a blanket policy but should take into consideration the cultural, social, and psychological needs of the students. For example, it may be necessary to adopt specific measures, such as allowing students to wear uniforms to avoid socioeconomic distinctions or providing more robust counseling and mentoring programs to help students develop interpersonal skills and emotional resilience.

The recommendations of this study emphasize the importance of understanding the cultural context when implementing co- educational policies. In areas with strong traditional values, such as Pakhtun culture, it may be more effective to adopt a gradual approach to co-education, beginning at higher educational levels where students are more mature and capable of handling the complexities of a mixed-gender classroom. Additionally, it is crucial for educational officials to work closely with parents, ensuring they are informed and involved in the educational process, particularly in culturally sensitive regions. Parental involvement is essential not only for academic support but also for helping students navigate the social and emotional challenges of co-education.

Furthermore, teachers play a crucial role in helping students realize their full potential in a co-educational environment. The findings suggest that teachers should be proactive in addressing the

psychological concerns of students, offering guidance and support to those who may feel overwhelmed by the social dynamics in the classroom. This could include fostering a classroom environment that encourages open communication, reduces gender- based anxiety, and promotes academic focus.

while co-education has the potential to foster a more integrated and inclusive educational experience, it is clear that its implementation must be carefully managed, particularly in culturally conservative contexts. By providing the right support systems, such as academic counseling, cultural sensitivity training for teachers, and parental engagement programs, the adverse effects of co-education on students' cognitive and psychological development can be mitigated.

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