EXPLORING GENDER-BASED VARIATIONS IN ACADEMIC PERFORMANCE OF SECONDARY SCHOOL STUDENTS IN BANGLADESH: A MIXED-METHODS STUDY

Abdul Aziz[1], Md. Shamsul Arefin[1*], Bikram Biswas[1]
[1]Noakhali Science and Technology University, Bangladesh
Corresponding Author: Md. Shamsul Arefin, Email ID: arefinrumee.du@gmail.com

Abstract

This mixed-methods study examines gender-based differences in academic performance among secondary school students in Bangladesh, focusing on the comparative performance of female and male students. Using both quantitative and qualitative data collection approaches, the study analyzed data from a representative sample of 150 male and 150 female students through questionnaires as well as key informant interviews (KII) with six male students, two female students, two teachers, and two guardians. The findings indicate that female students consistently outperform their male counterparts in terms of grades across subjects. Contributing factors include differences in study habits, parental involvement, and social expectations. However, this study also finds that male students demonstrate stronger technology-related skills than female students. Additionally, the research highlights the challenges faced by both male and female students in their educational journeys, emphasizing the influences of gender roles and cultural norms on learning outcomes. The findings suggest the need for gender-sensitive educational policies and targeted interventions to ensure equitable opportunities for academic success for all students.

Keywords: Gender; Academic performance; Gender disparity; Secondary School; Bangladesh

Introduction

Education is widely recognized as a fundamental human right and a key driver of sustainable development. Among the various indicators used to measure educational outcomes, academic performance is perhaps the most prominent, as it reflects students' mastery of subject matter, readiness for higher education, and future economic prospects (UNESCO, 2022). However, academic achievement is not uniform across all student groups. One of the most persistent and globally observed differences in education is the variation in academic performance between male and female students. This gender-based disparity has attracted increasing attention from scholars, educators, and policymakers. The term "gender" refers to socially constructed distinctions between males and females. These social constructs significantly influence the lives of students as well as the decisions of policymakers, and educators. Globally, a growing body of research suggests that gender plays a significant role in prompting students' academic achievement. In many countries, including Bangladesh, female students frequently outperform male students in reading and language-related subjects, whereas male students tend to perform better in mathematics and science (OECD, 2015; Parajuli & Thapa, 2017). Research worldwide across different educational levels has consistently revealed a significant gender gap in academic achievement. Several studies have shown that female students perform better than their male students (Khwaileh & Zaza, 2010). These differences arise from a complex interplay of biological, psychological, socio-cultural, and institutional factors. Traditional gender roles, parental expectations, teacher bias, peer pressure, and access to learning resources may shape students' motivation and performance in gender-specific ways (Tiedemann, 2000; Alordiah et al., 2015). Quality teaching also plays a vital role in improving students' academic performance. In this context, effective classroom management is particularly essential to creating a focused and disturbance-free environment where meaningful learning can take place (Mallick et al., 2021). Historically, female students faced considerable educational disadvantages, including limited access to higher education and less attention from teachers. These conditions led to gender discrimination, higher dropout rates among girls and stronger academic performance among boys.

However, data from the 1990s and 2000s indicate a significant shift in education; girls have performing better than boys. Globally, girls now surpass boys in school participation and achievement (Ullah, 2019). In Bangladesh, this issue is evident and it is easy to observe the disparities in secondary school academic achievement between males and females (Sparks-Wallace, 2007). This difference exists in every country of the world. This difference is easily noticeable in different levels of education. In Bangladesh, there have been commendable achievements in gender parity in terms of school enrollment, especially at the primary and secondary levels. According to BANBEIS (2023), the gender gap in school enrollment has narrowed significantly, and in many areas, the number of girls attending secondary school exceeds that of boys. It is evident that girls are outperforming boys in academic performance day by day. Currently, 10,296,695 students are enrolled in secondary education across the country. level to higher education institutions acre. Among them, 50.52% (5,201,890) are female compared to 5,094,805 male students. This means there are 107,085 more female students enrolled than male students. Furthermore, girls outperform boys in both pass rate and GPA-5 in Secondary School Certificate (SSC) and equivalent examinations. The published results show that 20 lakh 13 thousand 597 students participated in the SSC and equivalent examinations in 2024. Among them, 16 lakh 72 thousand 153 students passed. The pass rate for girls was 84.47% compared to 81.57% for boys. Despite these achievements, gender disparities in academic performance remain visible in rural Bangladesh. Noakhali (an administrative district) faces distinct challenges, including limited access to educational resources, socio-economic constraints, and gender-specific social expectations that differ from those in urban areas. Boys in rural areas are often expected to contribute to household income, which leads to their engagement in child labor, hindering their educational commitment and performance. According to the Bangladesh Bureau of Statistics, (2022) 51.79% of working children aged 5-17 are boys , compared to 48.21% who are girls. In contrast, girls are often encouraged to focus on education as a pathway to social mobility and marriage prospects. This trend is further supported by a reduction in child marriage rates, which dropped from 79% in 1995 to 51% in 2020, the lowest in south asia (UNICEF, 2020). Most previous studies in Bangladesh have focused either on urban areas or national-level data, overlooking the localities of rural areas like Noakhali. Furthermore, limited research has adopted a mixed-methods approach that not only quantifies gender-based performance differences but also explores their underlying causes from the perspective of students, teachers and parents. For this reason, the present study investigates gender-based academic performance disparities among students in four secondary schools in Noakhali district (two urban schools and two rural schools) in Bangladesh. The study aims to explore the underlying causes of these disparities, focusing on socio-cultural, economic and educational factors that contribute to this phenomenon. By examining these issues, the research aims to provide practical insights for educators, policymakers, and school administrators to develop effective, gender-sensitive interventions tailored to the needs of male students. Ultimately, this study has the potential to inform policies and practices that promote equitable educational opportunities and improve academic outcomes for all students.

Literature Review

Education is considered a basic human right that must be ensured for every child at any cost. It is the responsibility of governments to ensure this right is upheld without exception (Acharja & Biswas, 2025). In the era of globalization, with advances in science and technology, education has become more important, with both women and men participating equally. It is neither effective nor justifiable for one group to lag behind the other. Gender disparities are a significant factor in educational access. Historically, in many third-world or developing countries, women's education has received less emphasis. Gradually, sufficient progress has been made to address this imbalance, and female education is now recognized as equally important. In fact, females are performing much better academically than in the past (Khan et al., 2012). Gender inequalities in academic performance have been extensively investigated at various educational levels around the world, and several studies have found that female students consistently outperform male students in terms of grades and

overall academic achievement. This trend is observed in both developed and developing countries, although socio-economic and cultural factors strongly influence the magnitude of these differences. Research from around the world has consistently shown that female students outperform male students in a variety of courses, including languages, arts, and social sciences. According to OECD (2022), girls consistently outperform boys in reading, while in some countries, boys significantly outperform girls in mathematics and science. These disparities have been linked to a range of factors, including the learning environment, teaching strategies, socio-economic status, parental involvement, motivation, classroom dynamics, and social expectations (OECD, 2015). The socialization process often encourages female students to be more disciplined, organized, and detail-oriented, which may contribute to their strong academic performance in formal learning environments (DiPrete & Buchmann, 2013).

Regardless of educational background, female students tend to be more academically engaged than male students (Maravilla & Aliazas, 2024; Holmlund & Sund, 2008). In several academic fields, such as mathematics, physics, and engineering, girls outperform boys (Betz & Hackett, 1997). One key explanation for this trend is that high academic achievement requires consistent studying and hard work. Girls tend to spend more time on homework, read more frequently, pay closer attention in class, take better notes, and persist in the face of challenging or frustrating tasks. They are also less likely to exhibit disruptive behavior in class (Duckworth & Seligman, 2006). In Bangladesh, over the past few decades, the education system has undergone notable changes, particularly in gender parity in school enrollment. The number of female students has increased significantly as a result of government initiatives and international aid programs that have improved girls' access to education at both primary and secondary levels (World Bank, 2018).

Evidence suggests that male students in Bangladesh now perform worse academically than female students. This shift can be attributed to various socio-economic factors, including government incentives for girls' education, increased awareness of girls' education, and changes in family attitudes (Asadullah & Chaudhury, 2009). While global and national trends provide a broad understanding of gender differences in academic performance, local factors, such as those in Noakhali district, may also play an important role. In rural communities, traditional gender roles, limited access to educational resources, and teacher expectations can significantly impact students' achievement. In rural Bangladesh, girls are encouraged to pursue higher education to improve their marriage prospects, while boys are expected to focus on earning income. These social expectations may partly explain why girls prioritize their education more than boys (Sarkar, 2022). However, some studies present a different perspective, while female students often achieve higher grades, male students tend to excel in technology-related skills. Male students find technology-based learning more engaging (Gnaulati, 2014) and may demonstrate stronger analytical abilities in certain domains. In tasks that require advanced technology, male students outperform their female counterparts in scores (Khaleel, 2017). It is also argued that male students are more intelligent than female students and possess a greater understanding of the technical world. However, their grades may remain comparable to those of female students. Overall, existing research suggests that male students are generally more proficient in adopting and using technology in their studies, whereas female students tend to achieve higher academic grades (Coskun, 2014). In the context of Noakhali district, female students' stronger academic performance can be attributed to socio-cultural expectations and parental support.

In contrast, male students often face challenges linked to economic responsibilities and societal roles. Although female students have benefited from targeted educational support, the specific barriers faced by male students require greater attention. Addressing these challenges is essential to ensuring that both male and female students can achieve their full academic potential. More localized research is needed to identify the unique factors influencing academic performance in Noakhali and to design interventions that promote equitable learning outcomes for all.

Research Methodology

Research Design

This study adopted a concurrent mixed-methods design to examine gender-based variations in academic performance among secondary school students in Noakhali. Quantitative and qualitative data were collected simultaneously during a single phase of fieldwork. This approach enabled the integration of statistical trends with in-depth qualitative insights, providing a more comprehensive understanding of the research problem. Quantitative and qualitative datasets were analyzed separately and integrated to draw meaningful conclusions.

Sample, data collection and analysis

The study was conducted in Noakhali district, located in southeastern Bangladesh. Four secondary schools were selected to represent variation in geographic location and student demographics. The target population comprised students in grades 9 and 10, their parents, and teachers from these schools, with the primary focus on comparing academic performance between male and female students. For the quantitative component, stratified random sampling was used to ensure equal representation of male and female students. The sample included 300 students (150 males and 150 female students). For qualitative components, purposive sampling was used to select participants with relevant experiences for the research topic. A total of 12 Key Informant Interviews (KIIs) were conducted, including eight students (six male, two female), two teachers, and two parents. Quantitative data were collected using a structured questionnaire that covered academic performance, study habits, attendance, and demographic information. Qualitative data were gathered through semi-structured interview guides for the KIIs, focusing on gender-related academic challenges, support systems, and school environments. Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including frequencies, percentages, and means, were computed to summarize the data. Qualitative data from KIIs were transcribed verbatim and analyzed using thematic analysis. The coding process involved identifying, categorizing, and interpreting emerging themes to complement and enrich the quantitative findings.

Data Findings and Analysis

Quantitative Analysis

The quantitative data collected through structured questionnaires reveal significant patterns in academic performance, study habits, and educational attitudes among secondary school students in Noakhali District, Bangladesh. The following analysis presents key statistical outcomes from 300 participants (150 male and 150 female students), highlighting measurable gender-based variations across multiple educational indicators. These findings provide empirical evidence to complement the qualitative insights, establishing a comprehensive understanding of the gender gap in academic achievement within the study context.

Table 1: Academic Enjoyment levels by gender

Academic Enjoyment Level	Male (n=150)	Female (n=150)	Total (n=300)
Extremely enjoyable	10 (6.7%)	20 (13.3%)	30 (10.0%)
Very enjoyable	15 (10.0%)	40 (26.7%)	55 (18.3%)
Enjoyable	45 (30.0%)	60 (40.0%)	105 (35.0%)
Less enjoyable	60 (40.0%)	25 (16.7%)	85 (28.3%)
Not at all enjoyable	20 (13.3%)	5 (3.3%)	25 (8.3%)
Total	150 (100.0%)	150 (100.0%)	300 (100.0%)

Table 1 presents the distribution of students' academic enjoyment levels by gender. Overall, female students reported higher levels of academic enjoyment compared to male students. Among females, 13.3% rated their studies as "extremely enjoyable" and 26.7% as "very enjoyable," compared to 6.7% and 10.0% respectively among males. Conversely, a larger proportion of male students (40.0%) rated their studies as "less enjoyable" compared to 16.7% of females, and 13.3% of males reported "not at all enjoyable" compared to only 3.3% of females. The most common response for both genders was "enjoyable" (30.0% male, 40.0% female). These results suggest that female students tend to have a more positive attitude toward academic activities than male students, which may contribute to their higher academic performance observed in other parts of the study.

Table 2: Aspirational Educational Level of Students by gender

Desired Education Level	Male (n=150)	Female (n=150)	Total (n=300)
SSC	56 (37.3%)	8 (5.3%)	64 (21.3%)
HSC	58 (38.7%)	23 (15.3%)	81 (27.0%)
Honors	23 (15.3%)	78 (52.0%)	101 (33.7%)
Masters	12 (8.0%)	27 (18.0%)	39 (13.0%)
M.Phil.	1 (0.7%)	9 (6.0%)	10 (3.3%)
PhD	0 (0.0%)	5 (3.3%)	5 (1.7%)
Total	150 (100.0%)	150 (100.0%)	300 (100.0%)

Table 2 presents the distribution of students' aspirational educational levels by gender, revealing marked differences between male and female students. Among male respondents (n=150), the majority expressed aspirations limited to secondary-level qualifications: 37.3% aimed to complete the Secondary School Certificate (SSC) and 38.7% to the Higher Secondary Certificate (HSC). Only 15.3% of male students planned to pursue an Honors degree, and fewer than 9% expressed interest in postgraduate studies (Master's: 8.0%; MPhil: 0.7%; PhD: 0%). In contrast, female students (n=150) demonstrated substantially higher educational ambitions. Over half (52.0%) aspired to attain an Honors degree, 18.0% aimed for a Master's degree, and notable proportions sought advanced qualifications such as MPhil (6.0%) and PhD (3.3%). These proportions were markedly higher than those for male students across all postgraduate levels. The data highlight a significant gender disparity in educational aspirations among secondary school students in Noakhali District. While male students predominantly targeted secondary-level qualifications, female students were more likely to envision themselves progressing to undergraduate and postgraduate education. This divergence may reflect underlying socio-cultural dynamics, including evolving social expectations, increased parental support for female education, and the perception of education as a pathway to empowerment for girls.

Table 3: Desired SSC Examination Scores by Gender

Desired Score Range (Grade)	Male (n=150)	Female (n=150)	Total (n=300)
33–39 (D)	46 (30.7%)	12 (8.0%)	58 (19.3%)
40–49 (C)	45 (30.0%)	22 (14.7%)	67 (22.3%)
50–59 (B)	23 (15.3%)	26 (17.3%)	49 (16.3%)
60–69 (A−)	12 (8.0%)	30 (20.0%)	42 (14.0%)
70–79 (A)	18 (12.0%)	35 (23.3%)	53 (17.7%)
80–100 (A+)	6 (4.0%)	25 (16.7%)	31 (10.3%)
Total	150 (100.0%)	150 (100.0%)	300 (100.0%)

Table 3 presents students' desired score ranges for the Secondary School Certificate (SSC) examination by gender. The data reveal distinct differences in performance expectations between male and female students. Among males (n=150), the majority aimed for lower score ranges: 30.7% were satisfied with a D grade (33–39 marks) and 30.0% with a C grade (40–49 marks). In contrast, relatively fewer males expressed aspirations for higher grades: only 8.0% targeted an A− (60–69), 12.0% an A (70–79), and 4.0% an A+ (80–100). Female students (n=150) demonstrated higher academic expectations. Only 8.0% were content with a D grade, while a notable proportion aimed for top performance: 20.0% for an A−, 23.3% for an A, and 16.7% for an A+. These figures were substantially higher than those for male students in the same score ranges. Overall, the results indicate a clear gender gap in academic aspirations for SSC performance. Female students are more likely to set higher academic targets, reflecting greater ambition and possibly higher self-confidence in their academic abilities. In contrast, male students' expectations are concentrated in the lower score ranges, which may suggest differences in academic motivation, study habits, or self-perception of academic capability.

Table 4: Scores Obtained in the Last Half-Yearly Examination by Gender

Score Range (Grade)	Male (n=150)	Female (n=150)	Total (n=300)
0–32 (F)	37 (24.7%)	21 (14.0%)	58 (19.3%)
33–39 (D)	23 (15.3%)	18 (12.0%)	41 (13.7%)
40–49 (C)	28 (18.7%)	3 (2.0%)	31 (10.3%)
50–59 (B)	27 (18.0%)	37 (24.7%)	64 (21.3%)
60–69 (A−)	14 (9.3%)	49 (32.7%)	63 (21.0%)
70–79 (A)	17 (11.3%)	9 (6.0%)	26 (8.7%)
80–100 (A+)	4 (2.7%)	13 (8.7%)	17 (5.7%)
Total	150 (100.0%)	150 (100.0%)	300 (100.0%)

Table 4 indicates clear gender differences in actual academic performance based on half-yearly examination results. Male students (n=150) showed a concentration in the lower performance brackets, with 24.7% scoring in the lowest category (0–32) and 18.7% in the second-lowest (33–39). Only 11.3% of males achieved scores in the higher ranges (70–79), and a mere 2.7% attained the top category (80–100). In contrast, female students (n=150) demonstrated stronger overall performance, with 32.7% scoring in the second-highest range (60–69) and 24.7% in the middle range (50–59). While 14.0% of females fell into the lowest category, a substantially higher proportion (8.7%) reached the top score range compared to 2.7% of males. These findings suggest that female students generally outperform their male counterparts, with greater representation in higher score ranges and fewer in the lowest categories. This performance pattern is consistent with earlier results from the study, which showed that female students hold higher academic expectations and aspirations, which may translate into better academic outcomes.

Table 5: Perceptions of Competitiveness in Class by Gender

Perceived as More Competitive	Male (n=150)	Female (n=150)	Total (n=300)
Girl	23 (15.3%)	83 (55.3%)	106 (35.3%)
Boy	12 (8.0%)	23 (15.3%)	35 (11.7%)
No one	115 (76.7%)	44 (29.3%)	159 (53.0%)
Total	150 (100.0%)	150 (100.0%)	300 (100.0%)

Table 5 reveals significant gender differences in students' perceptions of competitiveness in their classrooms. Among male students (n=150), the majority (76.7%) believed there was no competitive environment in their class, while only 15.3% perceived girls as more competitive. In contrast, female students (n=150) held markedly different views, with 55.3% identifying girls as more competitive and only 15.3% identifying boys as more competitive. Notably, 29.3% of female students reported no competitive atmosphere, a proportion substantially lower than that of male students. These findings suggest that female students are more likely to recognize and acknowledge competitive dynamics in their academic environment, particularly perceiving their female peers as highly competitive.

Table 6: Student Perception of Academic Enjoyment through Technology and Perceived Usefulness of Students' Technical Skills

Statements	Response Level	Male (n=150)	Female (n=150)
How enjoyable is the connection of academic studies through technology?	Extremely enjoyable	40 (26.7%)	22 (14.7%)
	Very enjoyable	49 (32.7%)	23 (15.3%)
	Enjoyable	43 (28.7%)	32 (21.3%)
	Less enjoyable	8 (5.3%)	54 (36.0%)
	Not at all enjoyable	10 (6.7%)	19 (12.7%)
How useful are your technical skills in the modern world?	Extremely useful	39 (26.0%)	12 (8.0%)
	Very useful	33 (22.0%)	17 (11.3%)
	Enjoyable *(useful)*	37 (24.7%)	38 (25.3%)
	Less useful	23 (15.3%)	59 (39.3%)
	Not at all useful	18 (12.0%)	24 (16.0%)
	Total	**150 (100.0%)**	**150 (100.0%)**

Table 6 presents gender-based differences in students' enjoyment of technology-assisted learning and perceptions of the usefulness of their technical skills in the modern world. Regarding the enjoyment of connecting academic studies with technology, male students (n=150) reported higher positive engagement than females. Over one-quarter (26.7%) of males rated the experience as "extremely enjoyable," compared to 14.7% of females. Similarly, 32.7% of males found it "very enjoyable," more than double the proportion of females (15.3%). Conversely, a higher proportion of female students (36.0%) rated technology-assisted learning as "less enjoyable" compared to only 5.3% of males. When assessing the usefulness of their technical skills, males again expressed greater confidence. Over one-quarter (26.0%) of male students considered their skills "extremely useful," compared to only 8.0% of females. Likewise, 22.0% of males rated their skills as "very useful," versus 11.3% of females. However, similar proportions of males (24.7%) and females (25.3%) rated their skills as "enjoyable/useful." Notably, a much larger share of females (39.3%) than males (15.3%) perceived their skills as "less useful." These findings indicate a clear gender gap in attitudes toward both technology-assisted learning and the perceived value of technical skills, with male students demonstrating higher enthusiasm and self-assessed competence in technology-related domains. This suggests the need for strategies to enhance female students' engagement with technology and their confidence in their technical abilities, potentially addressing underlying barriers to their participation in technology-based learning.

Table 7: Preference between Teacher's Class Lecture and Learning Through Technology by Gender

Learning Preference	Male (n=150)	Female (n=150)	Total (n=300)
Teacher's class lecture	34 (22.7%)	97 (64.7%)	131 (43.7%)
Technology	116 (77.3%)	53 (35.3%)	169 (56.3%)
Total	150 (100.0%)	150 (100.0%)	300 (100.0%)

Table 7 demonstrates a clear gender divide in preferred learning approaches. Male students (n=150) overwhelmingly favored technology-based learning, with 77.3% finding it more enjoyable compared to 22.7% who preferred traditional lectures. In contrast, female students (n=150) showed the opposite pattern, with 64.7% enjoying teacher-led lectures more than technology-based methods (35.3%). This striking contrast indicates that while male students tend to prefer digital learning tools, female students remain more inclined toward conventional classroom teaching. These findings suggest potential gender-based differences in learning style preferences that educators should take into account when designing instructional strategies.

Table 8: Enjoyment Levels in Studying Mathematics and English by Gender

Enjoyment Level	Male (n=150)	Female (n=150)	Total (n=300)
Extremely enjoyable	13 (8.7%)	29 (19.3%)	42 (14.0%)
Very enjoyable	24 (16.0%)	32 (21.3%)	56 (18.7%)
Enjoyable	51 (34.0%)	61 (40.7%)	112 (37.3%)
Less enjoyable	47 (31.3%)	19 (12.7%)	66 (22.0%)
Not at all enjoyable	15 (10.0%)	9 (6.0%)	24 (8.0%)
Total	150 (100.0%)	150 (100.0%)	300 (100.0%)

Table 8 presents students' enjoyment levels when studying Mathematics and English, disaggregated by gender. The results indicate that female students generally reported greater enjoyment of these subjects than their male counterparts. Among females (n=150), 19.3% rated their experience as "extremely enjoyable" and 21.3% as "very enjoyable," compared to 8.7% and 16.0%, respectively, among males. The most common response for both genders was "enjoyable," reported by 40.7% of females and 34.0% of males. Conversely, male students were more likely to express lower enjoyment. Nearly one-third (31.3%) of males reported finding these subjects "less enjoyable," compared to 12.7% of females, and 10.0% of males reported "not at all enjoyable," compared to 6.0% of females. Overall, the findings suggest that female students have a more positive attitude toward Mathematics and English, with higher proportions reporting strong enjoyment and lower proportions expressing dissatisfaction. This difference in subject-related attitudes may contribute to broader patterns of academic performance identified elsewhere in the study.

Table 9: Marks Obtained in Mathematics and English (Half-Yearly Exam)

Subject	Score Range (Grade)	Male (n=150)	Female (n=150)
Mathematics	0–32 (F)	16 (10.7%)	7 (4.7%)
	33–39 (D)	23 (15.3%)	17 (11.3%)
	40–49 (C)	44 (29.3%)	13 (8.7%)
	50–59 (B)	31 (20.7%)	47 (31.3%)
	60–69 (A−)	21 (14.0%)	33 (22.0%)
	70–79 (A)	12 (8.0%)	23 (15.3%)
	80–100 (A+)	3 (2.0%)	10 (6.7%)
English	0–32 (F)	17 (11.3%)	11 (7.3%)
	33–39 (D)	21 (14.0%)	23 (15.3%)
	40–49 (C)	48 (32.0%)	17 (11.3%)
	50–59 (B)	48 (32.0%)	60 (40.0%)
	60–69 (A−)	8 (5.3%)	23 (15.3%)
	70–79 (A)	6 (4.0%)	9 (6.0%)
	80–100 (A+)	2 (1.3%)	7 (4.7%)

Table 9 presents the distribution of scores in Mathematics and English from the last half-yearly examination, disaggregated by gender. In Mathematics, male students (n=150) were more heavily concentrated in the lower score ranges, with 10.7% scoring in the failing category (0–32) and 15.3% in the D range (33–39). Nearly one-third (29.3%) of males scored in the C range (40–49), compared to only 8.7% of females. Higher achievement was more common among female students, with 31.3% scoring in the B range (50–59), 22.0% in A− (60–69), 15.3% in A (70–79), and 6.7% in A+ (80–100). In contrast, only 20.7% of males scored in the B range, 14.0% in A−, 8.0% in A, and 2.0% in A+.In English, a similar pattern emerged. Male students had a higher proportion in the lowest categories, with 11.3% failing and 14.0% in the D range, compared to 7.3% and 15.3%, respectively, for females. The C range (40–49) was dominated by males (32.0%) compared to 11.3% of females. Female students outperformed males in higher score brackets: 40.0% achieved a B, 15.3% an A−, 6.0% an A, and 4.7% an A+, compared to 32.0%, 5.3%, 4.0%, and 1.3% among males, respectively. Overall, the results indicate that female students achieved stronger performance in both Mathematics and English, with greater representation in the higher score ranges and fewer in the lowest categories. This aligns with the broader study findings that female students tend to outperform male students academically across multiple indicators.

Table 10: Level of Family Support in Studies

Level of Support	Male (n=150)	Female (n=150)	Total (n=300)
A lot of support	47 (31.3%)	59 (39.3%)	106 (35.3%)
Some support	51 (34.0%)	68 (45.3%)	119 (39.7%)
Very little support	43 (28.7%)	21 (14.0%)	64 (21.3%)
No support at all	9 (6.0%)	2 (1.3%)	11 (3.7%)
Total	150 (100.0%)	150 (100.0%)	300 (100.0%)

The study reveals significant gender-based disparities in students' perceptions of family support for their academic endeavors. Female students reported markedly stronger family backing, with 84.6% indicating either substantial (39.3%) or moderate (45.3%) support. In contrast, only 65.3% of male students reported comparable levels of family involvement. The gender gap is particularly pronounced in cases of limited support, with male students twice as likely as females (28.7% vs. 14.0%) to report minimal family engagement in their education. The most striking disparity emerges in the complete absence of support, where male students (6.0%) outnumber females (1.3%) by nearly five to one. These findings suggest that female students benefit from more robust family support systems, which may contribute to their higher academic performance and aspirations observed elsewhere in the study.

Table 11: Average daily study time at home

Study Time	Male (n=150)	Female (n=150)	Total (n=300)
Less than 2 hours	27 (18.0%)	9 (6.0%)	36 (12.0%)
2–3 hours	87 (58.0%)	31 (20.7%)	118 (39.3%)
3–4 hours	19 (12.7%)	48 (32.0%)	67 (22.3%)
More than 4 hours	17 (11.3%)	62 (41.3%)	79 (26.3%)
Total	150 (100.0%)	150 (100.0%)	300 (100.0%)

The data of table 11 reveal striking gender differences in students' self-reported study habits at home. Female students report significantly longer study durations, with 73.3% studying for more than three hours daily (32.0% for 3–4 hours and 41.3% for over four hours). In contrast, only 24.0% of male students report similar study commitments (12.7% for 3–4 hours and 11.3% for over four hours). Conversely, male students are more concentrated in shorter study sessions, with 76.0% studying less than three hours per day (58.0% for 2–3 hours and 18.0% for under two hours). Female students are markedly less represented in these lower study duration categories, with only 26.7% reporting such limited study time (20.7% for 2–3 hours and 6.0% for under two hours).

Table 12: Student Attitudes and Perceptions on Academic Confidence and Equality

Statements	Response Level	Male (n=150)	Female (n=150)
I feel confident about my academic abilities.	Strongly Disagree	38 (25.3%)	14 (9.3%)
	Disagree	37 (24.7%)	4 (2.7%)
	Neutral	38 (25.3%)	61 (40.7%)
	Agree	24 (16.0%)	33 (22.0%)
	Strongly Agree	13 (8.7%)	38 (25.3%)
My teachers treat boys and girls equally.	Strongly Disagree	19 (12.7%)	11 (7.3%)
	Disagree	37 (24.7%)	32 (21.3%)
	Neutral	43 (28.7%)	53 (35.3%)
	Agree	9 (6.0%)	23 (15.3%)
	Strongly Agree	42 (28.0%)	31 (20.7%)
I am motivated to study regularly.	Strongly Disagree	23 (15.3%)	13 (8.7%)
	Disagree	49 (32.7%)	21 (14.0%)
	Neutral	44 (29.3%)	46 (30.7%)
	Agree	12 (8.0%)	27 (18.0%)
	Strongly Agree	22 (14.7%)	43 (28.7%)
Boys and girls are given equal opportunities in school.	Strongly Disagree	16 (10.7%)	11 (7.3%)
	Disagree	34 (22.7%)	27 (18.0%)
	Neutral	44 (29.3%)	42 (28.0%)
	Agree	26 (17.3%)	31 (20.7%)
	Strongly Agree	30 (20.0%)	39 (26.0%)
My parents expect me to do well in school.	Strongly Disagree	8 (5.3%)	3 (2.0%)
	Disagree	23 (15.3%)	19 (12.7%)
	Neutral	63 (42.0%)	29 (19.3%)
	Agree	11 (7.3%)	32 (21.3%)
	Strongly Agree	45 (30.0%)	67 (44.7%)

The results of table 12 reveal significant gender disparities in students' self-confidence regarding academic abilities. Among male students, 25.3% strongly disagree and 24.7% disagree with feeling confident, indicating that half express negative self-perceptions. In contrast, female students demonstrate notably higher confidence levels, with only 9.3% strongly disagreeing and 2.7% disagreeing. Positive responses show an even greater contrast: 47.3% of females agree or strongly agree with feeling confident compared to just 24.7% of males. The most striking difference appears in strong agreement, where female students (25.3%) outnumber males (8.7%) by nearly three to one. Student perceptions about equitable teacher treatment show moderate gender variations. Male students are slightly more likely to strongly agree (28.0%) that teachers treat boys and girls equally compared to females (20.7%). However, disagreement levels are comparable, with 24.7% of males and 21.3% of females perceiving unequal treatment. Neutral responses dominate both groups (35.3% females, 28.7% males), suggesting that many students remain uncertain about classroom equity. Overall, the data indicate no strong consensus on whether teachers treat genders equally.

Motivation levels exhibit clear gender differences. Nearly half of female students (46.7%) report being motivated or strongly motivated to study, compared with only 22.7% of male students.

Conversely, 48.0% of male students report a lack of motivation (disagree/strongly disagree), more than double the rate among female students (22.7%). The motivation gap is most pronounced in strong agreement, where female students (28.7%) outpace males (14.7%) by nearly two to one. Perceptions about equal opportunities for boys and girls show relatively balanced responses. Female students are slightly more positive, with 46.7% agreeing or strongly agreeing that such opportunities exist, compared with 37.3% of male students. Both genders report similar neutral response rates (28–29%). The largest difference appears in strong agreement, where females (26.0%) outnumber males (20.0%). While most students perceive reasonable equity, 18–23% maintain that gender disparities persist in school opportunities. Parental expectations demonstrate the most pronounced gender gap. Two-thirds (66.0%) of female students report clear parental expectations (agree/strongly agree), nearly double the rate among males (37.3%). Notably, 42.0% of male students remain neutral about parental expectations, suggesting unclear or compared to only 19.3% of females. The strong agreement category shows particular disparity, with 44.7% of females versus 30.0% of males.

Qualitative Analysis

Challenges of achieving good performance in school

If learning and teaching activities are interesting, enjoyable, and realistic, students are more likely to pay attention to the lesson. However, when school activities are not student-friendly and the teacher's understanding of students' abilities is limited, problems arise. Often, teachers assume that all students in the class have understood the lesson based on the performance of the top-ranked students. As a result, weaker students feel incapable and, over time, lose interest in their studies. MS1 explain the issue,

—The teacher's long class is boring to me. If I understand one part of the lesson but the teacher explains many parts, I get confused. Then I can't concentrate on the lesson anymore. The teacher thinks that if roll numbers 1–10 understand, then everyone else has understood. When the students in the front row do all the math in class as soon as the teacher tells them to, I feel helpless and stop concentrating.‖

Another MS2 shared a similar experience

—The girl students in my class are good at almost all subjects. When Sir gives a task, they complete it very quickly, but when I can't do it, I feel helpless. Then I don't want to do the task anymore and don't want to ask Sir. So, they keep moving forward while I fall further behind.‖

For these reasons, many students lose interest in studying, and school becomes merely a place to mark their presence in the attendance register.

Another MS3 student said

—I don't find the teacher's classes interesting at all. I don't like going to school as much as I like hanging out with friends. If there were no attendance requirements, I would not go to school.‖

Male students are becoming increasingly engaged in idle conversations with friends and spend more time on mobile phones than on textbooks. This behavior is distancing them from their families, and they often become angry with their parents for not providing money for chatting and mobile phone expenses. Some take on part-time work (e.g., painting, electronics repair, working in shops) to fund their habits.

A FS1 observed

—Boys are becoming more addicted to mobile phones day by day. They spend more time on their phones than reading books. They also skip classes and pay little attention to class activities. Sometimes, because they talk and cause disturbances in class, our learning is disrupted.‖

A G1 shared a similar concern

"*When my son was in class six, he studied well. But after reaching class seven, I noticed he was slowly giving up his studies. When I spoke to his teacher, I was told that my son did not attend school regularly and hung out with bad company. When I asked him about it at home, he became angry. A month later, he demanded money to buy a mobile phone. As we could not afford it, he stopped going to school and eventually bought a phone. Now, he hardly comes home.*‖

Parents are often unable to control such behavior, and teachers also face difficulties in redirecting these students' focus toward their studies. Teachers attempt various interventions, but in the absence of official authority to discipline students, they often fail. In some cases, students even threaten their teachers.

A T1 described the situation as follows

—I try to help my students achieve good results, but now the boys are completely distracted in class. They don't even attend regularly. If there is any kind of punishment for absenteeism, they involve political leaders, leaving us with no authority to act. As a result, we can't hold them accountable for their studies. They are often seen chasing girls, smoking, and fighting with juvenile gangs. It is becoming very difficult to bring them under control. On the other hand, female students tend to be more disciplined in their studies due to social pressures and expectations. Girls are generally more organized, regularly complete their homework, and take their studies seriously, while boys are less interested in these activities.‖

Co-Curricular Activities

Participation in co-curricular activities among male students appears to be declining. Several students reported feeling overshadowed by their female peers, who they perceive as more skilled in competitions. One MS4 student explained:

—Girls are doing well in all these competitions. We also try, but they are more skilled than us. We find online games more attractive, which has reduced our participation in cricket and football. I can't even remember the last time I played cricket.‖

Instead of sports or school-based activities, many male students spend their free time on social media platforms such as YouTube, TikTok, and Facebook, often competing for reactions and followers. As another MS5 student noted:

—I have a YouTube channel. I spend most of my time there, making videos, adding new content, and competing with friends to see who gets the most reactions and followers.‖

Parents expressed growing concern over this shift in focus, describing their sons' preoccupation with online entertainment as detrimental to both academic performance and personal health.

One G2 shared:

"*My son is in class 10 and has his SSC exams coming up, but he doesn't study. He spends most of his time playing PUBG or making TikTok videos on the street. He stays online late into the night, doesn't sleep properly, and his health is deteriorating. We are deeply worried about him.*‖

Teachers also attributed the problem to a lack of parental supervision and discipline. One T2 remarked

—We have been lenient with our students, but it's disappointing to see boys drifting away from their studies like this. They are so addicted to mobile phones that it seems like the whole world to them. I believe if parents were more aware and maintained discipline at home, their children would be more interested in learning.‖

Financial Constraints and Academic Disengagement

Another contributing factor to boys' disengagement from studies is the family's financial situation. Economic hardships often compel male students to work, leaving them physically exhausted and less inclined to focus on academics. A MS6 student described his experience:

—My father is a rickshaw driver, and it's hard for him to pay for my education. After school, I work in a grocery store and as a mason on Fridays and Saturdays. By the time I'm home, I'm too tired to study. I'm just trying to pass class 10 so at least I have an identity.‖

In contrast, one FS2 student pointed out that while societal expectations for girls often center around marriage, this mindset is gradually shifting. She observed that boys face unique pressures related to family finances:

—Our parents are usually more concerned about marriage than our studies, but now this is slowly changing. They want us to study and marry in a good place so we can make our own position. Boys are different. They start worrying about family finances from a very young age because they are expected to take responsibility for the family. As a result, they lose interest in studies day by day, worrying about both education and family needs.‖

Discussion

This study aimed to explore gender-based differences in academic performance among secondary school students in Noakhali district, Bangladesh, and to identify the reasons why female students consistently outperform male students. The findings indicate that female students excel academically due to good study habits, greater parental involvement, and strong motivation. In contrast, male students are more engaged in technology-related activities but exhibit lower academic performance, often due to distractions and socio-economic pressures. In response to the qualitative question about students' enjoyment of academic learning, female students reported higher levels of enjoyment than male students. This finding aligns with previous studies suggesting that female students generally show greater enthusiasm and dedication toward academics (Khwaileh & Zaza, 2010; Ullah, 2019). However, the lower engagement among boys appears to stem not from a fundamental disinterest in learning but from dissatisfaction with traditional classroom structures (Gnaulati, 2014). This suggests that alternative teaching methods could improve boys' academic engagement. According to BANBEIS (2023), 84.47% of female students passed the SSC examination, compared to 81.57% of male students, a performance gap of 2.9%. The disparity was even more pronounced in the most recent half-yearly examinations, with 86% of female students passing compared to 75.3% male students. A difference of 10.7 percentage points in the performance gap. This study's findings indicate that the performance gap has widened further.

When asked about their desired level of education, female students expressed significantly higher ambitions to pursue higher education, while male students were more inclined to stop at lower levels. This observation is consistent with research suggesting that societal expectations encourage girls to complete their education as a pathway to improved future opportunities, whereas boys often face early financial responsibilities (Sarkar et al., 2014). The data reveal that 52% of female students aim for Honors degrees compared to only 15.3% of male students, a 36.7 percentage point gap. At the highest academic levels, 9.3% of female students aspire to MPhil or PhD qualifications compared to just 0.7% of male students, a 12.7 times difference. These findings align with DiPrete & Buchmann's (2013) research on how social expectations shape educational ambition differently by gender. The superior academic performance of female students appears closely linked to their study habits and time investment. This study found that 73.3% of female students study more than 3 hours daily at home, compared to only 24% of male students, resulting in a remarkable 49.3 percentage-point gap.

This supports the finding of Duckworth & Seligman (2006), who argue that female students typically exhibit greater self-discipline in academic contexts. The gap is also evident in extended study duration, where 41.3% of female students study more than 4 hours daily compared to only 11.3% of male students, a difference of 30 percentage points. Parental involvement is another critical factor. A total of 84.6% of female students reported moderate to high levels of family support in their studies, compared to 65.3% of male students. The disparity is most striking at the lowest support level, where only 1.3% of female students reported no family support, compared to 6% of male students. This indicates male students are 4.6 times more likely to lack any family academic support. This finding supports Sarkar et al.'s (2014) observation that rural Bangladeshi families are increasingly prioritizing girls' education as a pathway to social mobility.

Technology use patterns reveal a paradoxical advantage for male students that do not translate into higher academic achievement. While 77.3% of male students prefer technology-based learning compared to 35.3% of female students, this technological affinity appears to be accompanied by greater digital distractions. Moreover, 48% of male students consider their technical skills extremely useful, compared with 19.3% of female students. This confidence in technical abilities does not correlate with better academic performance, suggesting potential issues with digital distractions, as Khaleel (2017) raised. Subject preferences also suggest shifting trends. Female students reported higher enjoyment of mathematics and English than male students, supporting the view that girls are increasingly interested in subjects where boys have traditionally excelled (Betz & Hackett, 1997). However, Coskun (2014) suggests that boys' lower performance in these subjects may be due to differences in learning styles rather than ability, indicating a need for teaching strategies that cater to diverse learning preferences.

In summary, female students consistently achieved higher grades and expressed greater academic ambition, while male students demonstrated higher interest in technology but lower academic engagement. These findings indicate a clear need for targeted educational interventions to address the specific challenges faced by male students while continuing to support the academic success of female students. Although this study’s geographic focus on Noakhali District limits the generalizability of the findings, the consistent percentage gaps across multiple indicators, ranging from the 2.9 percentage point difference in pass rates to the 49.3 percentage point gap in study time commitment, strongly suggest systemic gender-based differences in educational engagement. Potential strategies to address these disparities include integrating technology into pedagogy to engage male students better, implementing parental awareness programs to increase family support for boys' education, and developing mentorship initiatives to raise academic aspirations among male students.

Limitations and Recommendations

Limitations

This study has certain limitations that should be acknowledged. First, although the sample size was representative of the Noakhali District, it may not fully capture the diversity of student experiences across Bangladesh. The focus on a single geographical area limits the generalizability of the findings to other districts with differing socio-economic and cultural contexts. Second, the study primarily relied on self-reported data for certain variables, which may be subject to response bias. Despite these limitations, the findings provide valuable insights with significant implications for educational policy and practice. They highlight the importance of adopting gender-sensitive teaching approaches, recognizing that boys and girls encounter different academic challenges. Moreover, the results suggest a need to challenge traditional gender stereotypes in subject selection to encourage both male and female students to pursue a broad range of academic interests.

Recommendations

Based on the study's findings, the following recommendations are proposed to address the disparity in academic performance among secondary school students in Noakhali District, Bangladesh.

- **Enhance parental involvement in boys' education**: Schools should actively engage parents in supporting their sons' academic progress through regular parent-teacher meetings, workshops on effective parenting for academic success, and community awareness programs highlighting the importance of boys' education.

- **Implement gender-sensitive interventions**: Government agencies and education policymakers should develop targeted initiatives such as tutoring and mentoring programs for male students to increase motivation, improve engagement, and address the specific social and cultural pressures they face.

- **Promote balance between academics and extracurricular activities**: Schools should provide structured programs that integrate extracurricular engagement with academic learning, ensuring that boys maintain focus on their studies while participating in other activities.

- **Introduce peer mentorship programs**: High-achieving female students could mentor male peers to share effective study habits and foster a collaborative learning environment where students benefit from each other's strengths.

- **Provide school-based counseling services**: Establish counseling programs to help male students manage academic stress, personal challenges, and long-term academic planning. These services could focus on stress management, academic goal-setting, and career guidance.

By implementing these strategies, schools, policymakers, and communities in Noakhali District can work collectively to narrow the academic performance gap between male and female students, thereby promoting a more equitable and supportive educational environment for all learners.

Conclusion

The results of this study indicate that female secondary school students in Bangladesh's Noakhali district consistently achieve higher academic grades than their male counterparts. Factors such as stronger study habits, higher motivation, and greater parental involvement contribute significantly to higher academic performance among female students. In addition, social expectations for women to excel in education as a means of empowerment further shape their educational outcomes. In contrast, male students are more likely to be affected by social pressure, family responsibilities, distractions, and lower engagement with their studies, which collectively contribute to their comparatively lower academic performance. While these findings highlight positive academic trends for female students, it is equally important to address the challenges faced by both genders within the education system. Policymakers and educational stakeholders should consider gender-responsive strategies to improve overall academic performance and ensure an equitable learning environment for all students. Active collaboration between parents and teachers is essential in this effort. By creating a balanced and supportive learning environment, both male and female students can achieve academic success on equal terms.

References

1. Acharja, D. C. (2025). Children's Rights and Inclusive Education in Bangladesh: Analyzing Policy Gaps, Practical Challenges, and Strategic Pathways. *Cuestiones de Fisioterapia*, *54*(5), 1358-1376.
2. Alordiah, C. O., Akpadaka, G., & Oviogbodu, C. O. (2015). The Influence of Gender, School Location and Socio-Economic Status on Students' Academic Achievement in Mathematics. *Journal of Education and Practice*, *6*(17), 130-136.
3. Asadullah, M. N., & Chaudhury, N. (2009). Reverse gender gap in schooling in Bangladesh: insights from urban and rural households. *Journal of Development Studies*, *45*(8), 1360-1380.
4. BANBEIS. (2023). *Bangladesh Education Statistics 2023*. https://banbeis.portal.gov.bd/sites/default/files/files/banbeis.portal.gov.bd/npfblock/Bangladesh%20Education%20Statistics%202023%20(1).pdf
5. Bangladesh Bureau of Statistics. (2022). *Bangladesh—National Child Labour Survey 2022*. https://webapps.ilo.org/surveyLib/index.php/catalog/8653
6. Betz, N. E., & Hackett, G. (1997). Applications of self-efficacy theory to the career assessment of women. *Journal of career assessment*, *5*(4), 383-402.
7. Coskun, L. (2014). The girls are better at language learning: A comparative approach. *Journal of Educational and Social Research*, *10*.
8. DiPrete, T. A., & Buchmann, C. (2013). *The rise of women: The growing gender gap in education and what it means for American schools*. Russell Sage Foundation.
9. Duckworth, A. L., & Seligman, M. E. (2006). Self-discipline gives girls the edge: gender in self-discipline, grades, and achievement test scores. *Journal of educational psychology*, *98*(1), 198.
10. Gnaulati, E. (2014). Why girls tend to get better grades than boys do. *Education. The Atlantic*.
11. Biswas, B., Arefin, M. S., Roy, K.S., Ullah. M.N. (2021). Legislature and Governance: A Comparative Study between Bangladesh and Japan, Journal of Governance, Volume 6, Issue 1, June 2021 (85-103)
12. Heise, M. (2003). Are single-sex schools inherently unequal. *Mich. L. Rev.*, *102*, 1219.
13. Holmlund, H., & Sund, K. (2008). Is the gender gap in school performance affected by the sex of the teacher?. *Labour Economics*, *15*(1), 37-53.
14. Khaleel, M. (2017). Female students are more likely to get higher grades than male students. *International Journal of Scientific and Research Publications*, *7*(3), 378-386.
15. Khan, B. B., Nawaz, R., Chaudhry, K. M., Hyder, A. U., & Butt, T. M. (2012). Evaluation of comparative academic performance of undergraduate students at university level.*The Journal of Animal & Plant Sciences*, 22(3), 798-801.
16. Khwaileh, F. M., & Zaza, H. I. (2011). Gender differences in academic performance among undergraduates at the University of Jordan: Are they real or stereotyping. *College Student Journal*, *45*(3), 633-648.
17. Maravilla, R. A., & Aliazas, J. V. (2024). Contextualized Activity Tool For Enhancing Grade 7 Science Competencies. *Int J Sci Adv Res Technol*, *10*(2), 11-28.
18. Mallick, B., Biswas, B., Mukharjee, S. K., & Arefin, M. S. (2021). Improving quality of teaching learning in higher education in Bangladesh: Does classroom management matter? Journal of Educational and Management Studies, 11(4), 33–40.
19. OECD. (2015). *Education at a Glance 2015: OECD Indicators*. OECD. https://doi.org/10.1787/eag-2015-en

20. OECD. (2015). *The ABC of Gender Equality in Education*. https://www.oecd.org/en/publications/2015/03/the-abc-of-gender-equality-in-education_g1g51025.html
21. OECD. (2022). *PISA: Programme for International Student Assessment*. OECD. https://www.oecd.org/en/about/programmes/pisa.html
22. Parajuli, M., & Thapa, A. (2017). Gender differences in the academic performance of students. *Journal of development and social engineering*, *3*(1), 39-47.
23. Sarkar, R. K., Reza, M. M., & Hossain, M. E. (2014). Socio cultural barriers of girls' educational attainment experiences from rural Bangladesh. *Cultural Anthropology*, *349*, 358.
24. Tiedemann, J. (2000). Gender-related beliefs of teachers in elementary school mathematics. *Educational studies in Mathematics*, *41*(2), 191-207.
25. Ullah, R., & Ullah, H. (2019). Boys versus Girls' Educational Performance: Empirical Evidences from Global North and Global South. *African Educational Research Journal*, *7*(4), 163-167.
26. UNESCO. (2022). *Global education monitoring report 2022: Gender report, deepening the debate on those still left behind*. https://doi.org/10.54676/RCZB6329
27. UNICEF. (2020). *Ending Child marriage: A profile of progress in Bangladesh*. https://www.unicef.org/bangladesh/media/4526/file/Bangladesh%20Child%20Marriage%20report%202020.
28. Dundar, H., Béteille, T., Riboud, M., & Deolalikar, A. (2014). *Student Learning in South Asia: Challenges, Opportunities, and Policy Priorities. The World Bank.* https://doi.org/10.1596/978-1-4648-0160-0
29. Faruk, M. O., Alam, F., Chowdhury, K. U. A., & Soron, T. R. (2021). *Validation of the Bangla WHO-5 Well-being Index. Global Mental Health,* 8, e26. https://doi.org/10.1017/gmh.2021.26
30. Sparks-Wallace, O. (2007). *A study of gender differences in academic performance in a rural county in Tennessee* Fm(Master's thesis, East Tennessee State University).