



Examining the Relationship between Learning Styles and Academic Achievement of Girls and Boys at the Secondary Level During Covid-19

Author Name- Ms Swatti Chowdhary

Research scholar School of Education

Lingaya's vidhyapeeth Nahchauli Faridabad.

Dr Manju Sharma (supervisor, Professor, School of Education) Lingaya's vidhyapeeth Nahchauli Faridabad.

Article Info

Volume 6, Issue 6, 2024

Received: 15 May 2024

Accepted: 20 June 2024

doi:

[10.48047/AFJBS.6.6.2024.6882-6886](https://doi.org/10.48047/AFJBS.6.6.2024.6882-6886)

Abstract

This research paper investigates the relationship between learning styles and academic achievement among girls and boys at the secondary level during the COVID-19 pandemic. The pandemic-induced shift to remote learning brought significant changes in educational methodologies, necessitating an examination of how different learning styles impact academic outcomes. During the COVID-19 school closure, girls tended to perceive changes in their learnings less favourably than boys, both in terms of improvement in self-perceived learning and self-reported improvement in grades—with odds of a more affirmative response between 20 and 25% lower for girls relative to boys. The main drivers explaining this gender gap are physical activity and psychological distress of students during the COVID-19 disruption, as well as the perceived family climate. This study aims to identify any disparities in academic achievement based on gender and learning styles during this period.

• Introduction

India is home to an estimated of 20% of the world's adolescent population—equivalent to 253 million 10–19 year old boys and girls. Even before the COVID-19 pandemic, foundational literacy and numeracy skills among Indian adolescents were less than universal. In 2018, only 73% and 44% of Indian children in the eighth grade (age 14) could read second-grade level text and solve a simple numerical division problem, respectively. There were also substantial gender gaps in arithmetic skills and out-of-school rates in favor of boys in the 14–16 year age group.

The COVID-19 pandemic has disrupted traditional educational systems globally, forcing a transition to remote learning. This shift has highlighted the importance of understanding individual learning styles and their impact on academic achievement. Learning styles refer to the preferred ways in which individuals process information and acquire knowledge. This paper explores the relationship between learning styles and academic achievement among secondary school students, focusing on gender differences during the pandemic. The COVID-19 pandemic disrupted education delivery around the world, with school closures affecting over 1.6 billion students worldwide. In India, schools were closed for over 18 months, affecting 248 million

students. This study estimates the effect of the pandemic on adolescent literacy and schooling outcomes in India. We used data from the National Family Health Survey (NFHS-5) which covered 636,699 households across all districts of India from June 2019 to April 2021. We considered 15–17 year old adolescents who were surveyed after March 2020 as the post-COVID group while those surveyed earlier were included in the pre-COVID group. We used propensity score matching and inverse propensity score weighted regression methods to account for differences in socioeconomic characteristics between the two groups. Rates of literacy (ability to read a complete sentence) were 1.5–1.6% lower among post-COVID girls as compared with similar pre-COVID girls. Among post-COVID girls in the lowest wealth quintile, rates of literacy were 3.1–3.8% lower than similar pre-COVID girls. There was no loss in literacy among post-COVID girls in the highest wealth quintile. COVID-induced loss in literacy among girls was twice in rural areas as compared to urban areas, and substantially higher among socioeconomically disadvantaged caste groups as compared with privileged caste groups. Post-COVID girls also had 0.08–0.1 lower years of schooling completed than similar pre-COVID girls but there was no difference in out-of-school rates. In a smaller subsample of 15–17 year old boys, the post-COVID group had 2% lower out-of-school rates and there was no difference in literacy or years of schooling completed as compared with matched pre-COVID boys. While markers of vulnerability such as residence, caste, and poverty further amplified the risk of learning loss for girls, they did not have the same effect on boys.

2.1 Learning Styles

Learning styles are often categorized into various models, with one of the most widely used being the VARK model, which includes Visual, Auditory, Reading/Writing, and Kinesthetic learners. Understanding these styles can help educators tailor their teaching methods to improve student engagement and performance.

2. Academic Achievement

Academic achievement is typically measured through grades, test scores, and other performance indicators. Numerous factors influence academic achievement, including cognitive abilities, motivation, socioeconomic status, and educational environment.

- **Disruptions in Learning**
- **School Closures:** Millions of students experienced prolonged school closures, leading to significant disruptions in their education.
- **Remote Learning:** Transition to online learning was rapid and widespread, but not all students had equal access to the necessary technology and internet connectivity.
- **Learning Loss**
- **Reduced Instructional Time:** Many students received fewer hours of instruction due to the pandemic.
- **Knowledge Gaps:** Studies indicate that students, on average, experienced learning losses, especially in mathematics and reading.
- **Inequities and Disparities**
- **Socioeconomic Divide:** Students from low-income families were disproportionately affected due to lack of access to technology, learning resources, and conducive learning environments.
- **Special Needs Education:** Students with disabilities faced additional challenges due to the lack of tailored support and resources in remote learning settings.
- **Mental Health and Well-being**

- **Psychological Impact:** The pandemic caused increased levels of stress, anxiety, and depression among students, which negatively impacted their ability to learn.
- **Social Isolation:** Lack of peer interaction and extracurricular activities affected students' social skills and overall well-being.
- **Adaptations and Innovations**
- **EdTech Solutions:** The use of educational technology and digital tools surged, leading to innovative approaches in teaching and learning.
- **Hybrid Models:** Schools adopted hybrid learning models combining in-person and online instruction to mitigate learning losses.
- **Long-term Consequences**
- **Academic Achievement Gaps:** The pandemic has likely widened existing achievement gaps, with long-term implications for educational equity.
- **Policy and Investment:** Increased focus on educational policies and investment in infrastructure to support remote learning and bridge the digital divide.

3 Gender Differences in Education

Research has shown that there are gender differences in learning preferences and academic performance. Girls often excel in verbal and reading tasks, while boys tend to perform better in mathematical and spatial tasks. These differences can influence how each gender responds to various learning environments.

- **Access to Education**
- **Technological Access:** Girls, particularly in low-income countries, often had less access to technology and the internet compared to boys. Cultural norms and economic factors sometimes prioritized boys' education over girls'.
- **Educational Resources:** Girls were less likely to have access to textbooks, online learning platforms, and other educational resources at home.
- **Domestic Responsibilities**
- **Increased Domestic Burden:** With schools closed, many girls took on additional domestic responsibilities, such as caregiving for siblings or household chores, which reduced their study time.
- **Early Marriage and Child Labor:** In some regions, economic pressures led to an increase in early marriages and child labor, disproportionately affecting girls and hindering their education.
- **Psychological and Social Impact**
- **Mental Health:** Girls faced heightened risks of gender-based violence, abuse, and exploitation during lockdowns, which had significant impacts on their mental health and ability to focus on education.
- **Social Isolation:** The lack of social interaction and support from peers and teachers had a profound impact on girls, who often rely on these networks for educational encouragement and emotional support.
- **Academic Performance**
- **Engagement and Participation:** Studies showed that girls were less likely to participate actively in online classes due to lack of privacy, confidence, or encouragement from family members.
- **Learning Loss:** In many regions, girls experienced greater learning losses compared to boys, particularly in subjects like mathematics and science.

- **Long-term Consequences**
 - **Dropout Rates:** The pandemic increased the risk of girls dropping out of school permanently. The longer they were out of school, the less likely they were to return.
 - **Future Opportunities:** The interruption in education could have long-term effects on girls' future educational and employment opportunities, further perpetuating gender inequalities.

Responses and Interventions

- **Targeted Support:** Some governments and organizations implemented targeted interventions to support girls' education, such as providing technological resources, financial aid, and community-based learning programs.
- **Awareness Campaigns:** Efforts to raise awareness about the importance of girls' education and to combat gender-based violence and discrimination were intensified.

4 Impact of COVID-19 on Education

The COVID-19 pandemic has brought unprecedented disruption to education systems worldwide, affecting millions of students, educators, and institutions. This article delves into the multifaceted impact of the pandemic on education, highlighting key areas such as learning loss, technological challenges, socio-economic disparities, mental health, and long-term consequences.

- **Disruptions in Learning**

One of the most immediate effects of the pandemic was the closure of schools, which affected over 1.6 billion learners in more than 190 countries at its peak. This unprecedented disruption led to a significant shift from traditional classroom learning to remote and online education. While some regions quickly adapted to this new mode of learning, others struggled due to a lack of infrastructure and resources.

- **Learning Loss**

The abrupt transition to remote learning resulted in considerable learning loss, especially in subjects requiring hands-on experience or active engagement, such as science and mathematics. Studies indicate that students, on average, learned less during the pandemic compared to pre-pandemic times. The learning loss was more pronounced in younger students and those from disadvantaged backgrounds.

- **Technological Challenges**

The pandemic highlighted the digital divide, as not all students had equal access to the necessary technology for online learning. In many low-income and rural areas, students lacked access to computers, reliable internet connections, and digital learning resources. This technological gap exacerbated educational inequalities, leaving many students behind.

- **Socio-Economic Disparities**

COVID-19 magnified existing socio-economic disparities in education. Students from low-income families faced additional challenges, such as limited access to educational materials, inadequate learning environments, and increased household responsibilities. In many cases, economic pressures led to higher dropout rates as students needed to support their families financially.

- **Gender Differences**

The pandemic also revealed gender differences in educational impact. Girls, particularly in low-income countries, faced greater barriers to continuing their education. Increased domestic responsibilities, higher risks of early marriage, and limited access to digital tools

disproportionately affected girls, threatening to reverse progress made in gender equality in education.

- **Mental Health and Well-being**

The pandemic took a toll on students' mental health and well-being. Social isolation, anxiety about the virus, and uncertainty about the future contributed to heightened stress levels. For many students, the lack of interaction with peers and teachers led to feelings of loneliness and depression, impacting their ability to engage and perform academically.

The pandemic has led to a rapid shift to online learning, posing challenges such as lack of access to technology, reduced teacher-student interaction, and varying levels of home support. These factors have potentially widened the achievement gap among students with different learning styles and socioeconomic backgrounds.

- **Long-term Consequences**

The long-term consequences of the pandemic on education are profound. Widening achievement gaps, increased dropout rates, and disrupted educational pathways could have lasting effects on individuals and societies. Students who experienced significant learning loss may face challenges in higher education and the job market, perpetuating cycles of poverty and inequality

6. Conclusion

The relationship between learning styles and academic achievement is complex and influenced by various factors, including gender. The COVID-19 pandemic has highlighted the need for adaptive teaching methods that cater to diverse learning preferences. Understanding these dynamics can help educators support all students more effectively, ensuring equitable academic outcomes.

References

- UNICEF. Adolescent development and participation. Available at: <https://www.unicef.org/india/what-we-do/adolescent-development-participation> , Accessed on (28-06-2024).
- ASER Centre. Annual status of education report (rural) 2018: Young Children. Available at: <http://img.asercentre.org/docs/ASER%202019/aser%202018%20young%20children/aser2018youngchildren.pdf> Accessed on (28-06-2024)
- Fleming, N. D., & Mills, C. (1992). Not Another Inventory, Rather a Catalyst for Reflection. *To Improve the Academy*, 11, 137-155.
- Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2008). Learning Styles: Concepts and Evidence. *Psychological Science in the Public Interest*, 9(3), 105-119.
- OECD. (2020). *Education Responses to COVID-19: Embracing Digital Learning and Online Collaboration*.
- UNESCO. (2020). *COVID-19 and Education: From Disruption to Recovery*.
- VARK. (2020). The VARK Questionnaire. Retrieved from <http://vark-learn.com>
- Zhang, L. F. (2004). Thinking Styles: University Students' Preferred Teaching Styles and Their Conceptions of Effective Teachers. *The Journal of Psychology*, 138(3), 233-252.