

POLICY BRIEF

Gender Gap in Student Achievement in Jordan

Abstract

This study seeks to identify student and school level factors, including school, teacher, and student characteristics that explain the gap in student achievement between females and males in Jordan, where the former outperform the latter. Using data from international assessments (TIMSS, PISA), as well as local assessments (NAfKE and National Test) and focus groups to find the magnitude of the performance gap between girls and boys, this study also investigates factors associated with the gap in different assessments over time and seeks to understand how those factors operate. Besides identifying a number of relevant factors, this study offers a number of policy options to both narrow the gap and to improve overall student achievement.

This report contributes to the improvement of student learning for the knowledge economy by identifying school level factors, such as school, teacher, and student characteristics that might affect male and female student achievement differently.

I. Introduction and Approach

Intended to contribute to the overall mission of second the Education Reform for the Knowledge Economy in the Hashemite Kingdom, the "Gender Gap in Student Achievement in Jordan" study was designed and carried out by the National Center for Human Resource Development (NCHRD) Jordan, with support from World Education, Inc. (WEI)¹ and contributions from the Jordanian Ministry of Education (MOE). The principle tasks of the study were to determine the magnitude and trend of the achievement gap between males and females, where girls outperform boys at all levels and in all subjects, to investigate factors that may be associated with the gap, and to propose possible policy options at narrowing or eliminating the differences in student performance.

Using results from the Trends in Mathematics and Science Study (TIMSS), Programme for International Student Assessment (PISA), the National Assessment for the Knowledge Economy NAfKE, and the National Test (NT) over a number of iterations and years (from 2004 to 2013), researchers compared student performance in Math, Science, Arabic, and English by gender and grade over time using a Hierarchical Linear Model (HLM), including school and teacher background variables from NAfKE (2011), TIMSS (2011), and PISA (2012).

In addition to the quantitative data, the team also used qualitative methods, obtaining data from questionnaires and focus group discussion with teachers, parents, principals, supervisors, and students in order to understand what they perceived to be the reasons for the gender gap and identify contributing factors.

The findings presented in this policy brief aim to draw attention to the gender gap and to stimulate a policy level debate about ways to ensure that both girls and boys are equipped to achieve and succeed in a modern economy.

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II. Findings

The differences between male and female TIMSS scores were significant in all cycles (2003, 2007, and 2011) and subjects (Math and Science).

The largest gender achievement gaps occurred in Arabic. In 2012, the 75-point difference between girls and boys was the largest in the world, with females scoring 436 points in PISA and males scoring 361.

- Female students have outperformed male students in TIMSS, NAFKE, PISA, and NT in all subjects and grades for several assessment cycles, with the mean score differences and the effect sizes greater in Science and Arabic and smallest in Math, where achievement scores are lowest.
- The size of the gap is more pronounced in government schools than non-government schools, and as students move up the educational system and reach higher grades, the gender gap tends to increase. Whether the magnitude of the gender gap is increasing consistently over time cannot be concluded, as the gap narrowed in some assessments (TIMSS 2007 compared to TIMSS 2003) before widening again (TIMSS 2011).
- Regarding factors associated with the gender gap, both student and school-levels factors are relevant. In the qualitative analysis, students, teachers, and principals in female schools reported behavior and attitudes more conducive to learning than their counterparts in male schools. Girls are more likely to do homework, repeat grades less, skip fewer classes, and have higher academic ambitions. Boys were more likely to have less parental involvement in their education, but were also more likely to receive out of school lessons.
- Differences between male and female teachers were also evident. Female teachers reported higher job satisfaction and girls' schools were reported to be safer than boys' schools. Female schools seemed to have more qualified and better prepared teachers, better student-teacher relations, fewer interruptions from disruptive students, closer supervision of teachers, lower teacher turnover, and greater parental participation and homework supervision. Male principals also reported fewer resources in their schools than did female principals.
- The gender of a school (boys' or girls') is significantly and positively related to mean achievement, with female schools scoring higher than male schools, on average. School SES is also an significant predictor of achievement for both sexes.
- At the student level, high academic ambitions (i.e., desire to attend university or beyond), parental oversight of homework, frequent use of a computer at home for non-gaming activities, a feeling of safety in the school, and a strong sense of belonging (not feeling left out at school or out of place) were associated with higher achievement.
- Both girls and boys are performing below the average for national and international assessments. This is particularly true of Math and Science. For that reason, policies that reallocate resources from girls' schools to boys' should be avoided.

III. Policy Options

Based on the above findings, the following policy options are proposed:

Invest in Teachers and School Leadership

It is necessary to reshape the teaching profession. Unless it becomes more rewarding, there are few incentives for talented individuals to enter the field or for current teachers to perform at ERfKE II's stated levels. Engaging teachers, government, and union representatives in a serious dialogue will lead to the development of strategies to provide greater financial incentives to all teachers, the implementation of scripted lesson plans and coaching on curriculum to those who can benefit, stronger pre- and in-service training, and the promotion of peer-led learning for teachers. A strategic plan for the selection of principals should also be put in place.

Improve the Overall Safety of Schools

Safety is a major concern in male schools and both students and teachers reported witnessing verbal and physical threats and incidence of violence at a much higher rate than in female schools. Unsafe school environments decrease the motivation of students, teachers, and administrators to learn and work. A multifaceted approach should be taken, which:

- (a) continues to promote strategies to involve parents and communities in school life in an attempt to make schools safer and to improve the overall quality of education;
- (b) creates or strengthens committees at the central and directorate levels to search for innovative solutions to address the safety problem;
- (c) ensures that there is appropriate legislation that will safeguard the rights of victims (teachers, administrators, and students);
- (d) creates an accountability system in cooperation with schools, communities, and law enforcement;
- (e) involves all relevant institutions when violence extends beyond the school premises;
- (f) coordinates efforts with existing programs to enhance the effect of these initiatives; and
- (g) equips teachers, principals, and supervisors with relevant competencies and decision-making mechanisms to deal with violence in schools.

Make Education More Relevant to the Needs of Students

It is clear that parents, teachers, and students perceive the returns on education differently for boys and girls, due to existing socio-cultural and economic indicators. Education, however, is a critical variable for enabling both males and females to gain the skills necessary to meet labor market needs and compete economically. Traditional notions of teaching, even when "student-centered," may not be sufficient to raise students' interest in learning and thus their academic performance. Boys tend to view education as irrelevant more than their female peers. Innovative teaching methods and greater utilization of technology in the classroom will enhance students' familiarity with these tools and better capture the interest of students, particularly boys.

The gender gap was higher in government schools than in non-government schools, particularly when we compare National Test results, which are census based.

Reducing the gender gap will require changes in the overall quality of the education system and targeted interventions for males, including taking into account beliefs about the teaching profession, ways in which students learn, and roles of men and women in Jordanian society.

Initiate Interventions in Directorates with Large Gender Performance Gaps

Although the gender gap was observed across Jordan, some directorates are in need of immediate actions to ameliorate the problem. In Ramtha and Busairah the gender gap was very high in all subjects. There were also fewer directorates with large gender gaps in Math and Science than in Arabic and English. However, it is important to emphasize that Education programs currently implemented in those areas might expand their scope of work to address the gender inequity problems in student achievement.

Create Initiatives to Involve Parents and Communities in Children's Education.

Many parents do not visit their children's schools and are not aware of their children's school performance in national assessments. It is recommended that the MoE invest in communication campaigns and strategies to invite parents and community members to visit the schools.

Conclusion

The results presented above confirm that the gender achievement gap is real and that females have been outperforming males in TIMSS, NAFKE, PISA, and NT in all subjects and grades for several assessment cycles. In the 2012 PISA results, Jordan ranks 'number one' in the world in the gender gap among participating countries. Furthermore, the gender gap exists in all directorates and is more pronounced in government schools than non-government schools and, as students move up through the system to higher grades, there is a tendency for the achievement gap to increase.

A number of factors, both student- and school-level, can be said to be responsible for the differences in performance. At the student level, parental control over homework, students' use of computers, level of academic ambition, school safety, sense of belonging, and students' history of grade repetition were all shown to have a clear effect on student achievement. At the school level, school gender and SES consistently appeared as significant factors that explained differences in student performance, with female schools outperforming their male counterparts, and schools with higher SES outperforming less affluent schools. In addition, violence in boys' schools, male student's lack of academic ambition and incentives, male teachers' overall lack of motivation to teach, and differences in the teacher-student relationship dynamic were key elements in explaining gender differences. Focus groups also highlighted other factors, including females' more "controlled" environment and more restricted social life increasing their time spent in study.

This brief recommends a number of policy interventions which may help to close the gender gap, but it is important to emphasize that all Jordanian students, regardless of gender, have been performing below the average (center-point) in national and international assessments, especially in math and science. Any approach must assist both boys and girls.