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Learning Achievement in Morocco: a Status Assessment

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Summary

The 2015-2030 strategic vision innovates the Moroccan educational system. Unlike previous reforms, this vision addresses problems that have long been ignored. Among these problems is the quality of education. Although educational quality may have been included in previous reform programs, it is considered as one of the priorities in this new vision. The purpose of this Policy Brief is to assess the status of learning achievement, which is an integral part of educational quality, of students in the fourth grade. We rely on the international comparative assessments "Trends in Mathematics and Science Study" (TIMSS) and "Progress In Reading and Literacy Study" (PIRLS) in which Morocco participated. The aim is to highlight the deficits accumulated throughout the years.

Learning achievement as a measure of educational quality

Education is one of the major public expenditures, even for the most liberal states. Among the arguments in favor of investing in education is the concept of human capital. It can be perceived as an investment that each individual makes in order to acquire the necessary skills to qualify him or her for increased income. The accumulation of skills necessarily involves education and training, which is therefore the primary reason that justifies investment in education. An accessible educational system that offers equal opportunities allows everyone to acquire the skills that will enable each person to later earn higher income. It appears, at first, that the concept of human capital becomes purely individual in character. That said, other indirect effects, called externalities, are observed throughout society.

The fact that education is accessible by much of the population means that the distribution of income would be less disparate, reducing social inequalities. However, the stock of human capital does not benefit only the person who holds it but also the company hiring. The company would have a qualified staff that would effectively enhance productivity. From a macroeconomic perspective, increased business productivity is accompanied by an increase in gross domestic product. Thus, the economic benefits of human capital, which is based on a successful education system, provide a more egalitarian income distribution as well as a sustained growth rate. Moreover, the externalities of human capital also generate other benefits. On the political level, an educated population is more aware. This results in increased voting quality, thereby providing a solid enhancement to a country's democracy.

To verify the scope of these assumptions, economists have long used variables reflecting the level of education such as school enrollment or number of years of schooling. These quantitative variables have brought results mixed at best. This is mainly due to the fact that the above quantitative variables do not take into account individual differences.

« At the same level of education, two individuals can accumulate a totally different stock of human capital»

In this, what matters most is not the number of years of education, but rather what the individual has accumulated in knowledge during those years. In other words, human capital is closely linked to cognitive skills acquired during schooling. Thus, some economists have turned to education's qualitative dimension-hence the acute need for a quality measure. The widely used approach is to take learning achievement obtained by standardized tests as a variable, revealing the quality of education received. The recent availability of these data shows that income, productivity and economic growth are directly related to academic achievement. These theoretical advances have led a number of countries to place the quality of education at the center of their educational policies. Among these countries, Morocco is one of the newcomers.

The 2015-2030 strategic vision: quality is a top priority

From Morocco's independence to the end of the last century, its education system has had a long procession of reforms that have succeeded each other without achieving the desired objectives. Moreover, in 1999, UNESCO placed Morocco among the countries that are furthest from the goals of Education For All. This sobering trend ended with the advent of the National Education and Training Charter, which can be considered a turning point in the evolution of the Moroccan educational system. This charter has put concrete measures in place to redress the plight of education in Morocco. These efforts were able to bring positive results. Proof of this is Morocco's remarkable evolution from one the countries most distant from the Education for All goals in 1999 to a country that was able to achieve some of these goals by 2015. However, even if these advances are undeniable, the fact remains that the issue of the quality of education, although mentioned in the Charter, has been relegated to the background. The ensuing effect is that the quantitative progress did not enable a concomitant improvement in the quality of education.

Following a review conducted by the National Assessment Forum that expressed the main problems plaguing Moroccan schools, the reorientation of strategies implemented was acutely necessary. Weak student performance is among the major problems cited. Accordingly, a new strategy was proposed, namely the 2015-2030 strategic vision. The particularity of this vision is twofold. Although it is a long-term vision, it does not only address the superficial aspects. Instead, it is concerned with deeper educational issues. As shown in Figure 1, the strategic vision is articulated around four areas including the priority for quality education. A total of seven initiatives were devoted to this area.

«The vision concerns the restructuring of the educative sectors by giving more importance to continuing education, moral and financial motivation as well as career management »

In terms of taught content, special importance is given to languages in order to strengthen the skills of expression and communication. It also consists of reducing the number of hours in order to allocate more time for

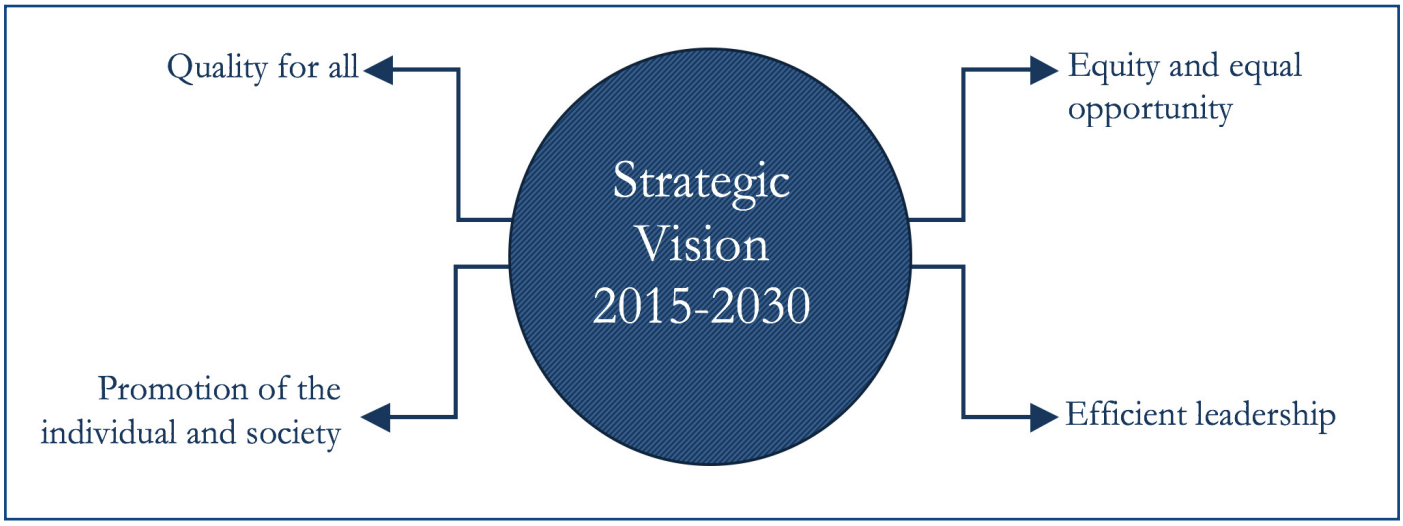

Figure 1: The four areas of the strategic vision 2015-2030

extracurricular and support activities. Furthermore, the theoretical side of education should be combined with practice, at all levels of education. Regarding curriculum, regular review will be conducted by giving educational professionals leeway to innovate and offer new approaches. Teaching methods should move away from unilateral transmission and move towards self-construction of knowledge. Finally, schools will be equipped with educational tools such as school libraries and digital resources. This non-exhaustive presentation highlights this new vision's interest, in that it emphasizes structural measures to address the problems that have long been put on hold. However, it is important to note that efforts are still needed to boost the image of Moroccan schools. The neglect of educational quality was reflected in the educational level of Moroccan students.

Learning achievements of Moroccan students are under the evaluation microscope

In order to assess the status of learning achievements, we will present the results of assessments in which Morocco participated, namely: "Trends in Mathematics and Science Study" (TIMSS) and "Progress In Reading and Literacy Study" (PIRLS) both organized by the International Association for the Evaluation of Educational Achievement. The first assessment, conducted every 4 years, tests students in science subjects, while the second, conducted every 5 years, concerns reading. Before presenting the results, it is first necessary to describe the scoring method. In both surveys, the scores are standardized to a mean of 500 coupled with a standard deviation of 100. Analyzed in absolute terms, the score appears ambiguous. For this reason, we will interpret the results in terms of categories, called benchmarks, presented in Figure 2.

The PIRLS and TIMSS assessments categorize the level of students within four benchmarks. The low benchmark refers to a level reflecting minimal knowledge in reading and math. The higher the benchmark, the higher the student level. The upper level is relative to the advanced benchmark. Not mentioned in the two studies, the researchers agree that students with a score below 400 lack the minimal skills in both subjects. That is to say, this category of students is on the verge of illiteracy. Unfortunately, the number of Moroccan students within this benchmark category is high.

«The 2015-2030 strategic vision innovates the Moroccan educational system. Unlike previous reforms, this vision addresses problems that have long been ignored»

Morocco's 2011 ranking in both studies highlights the poor performance of its students. Second to last in math and last in reading with average respective scores of 335 and 310 points, Morocco's ranking is very worrying.

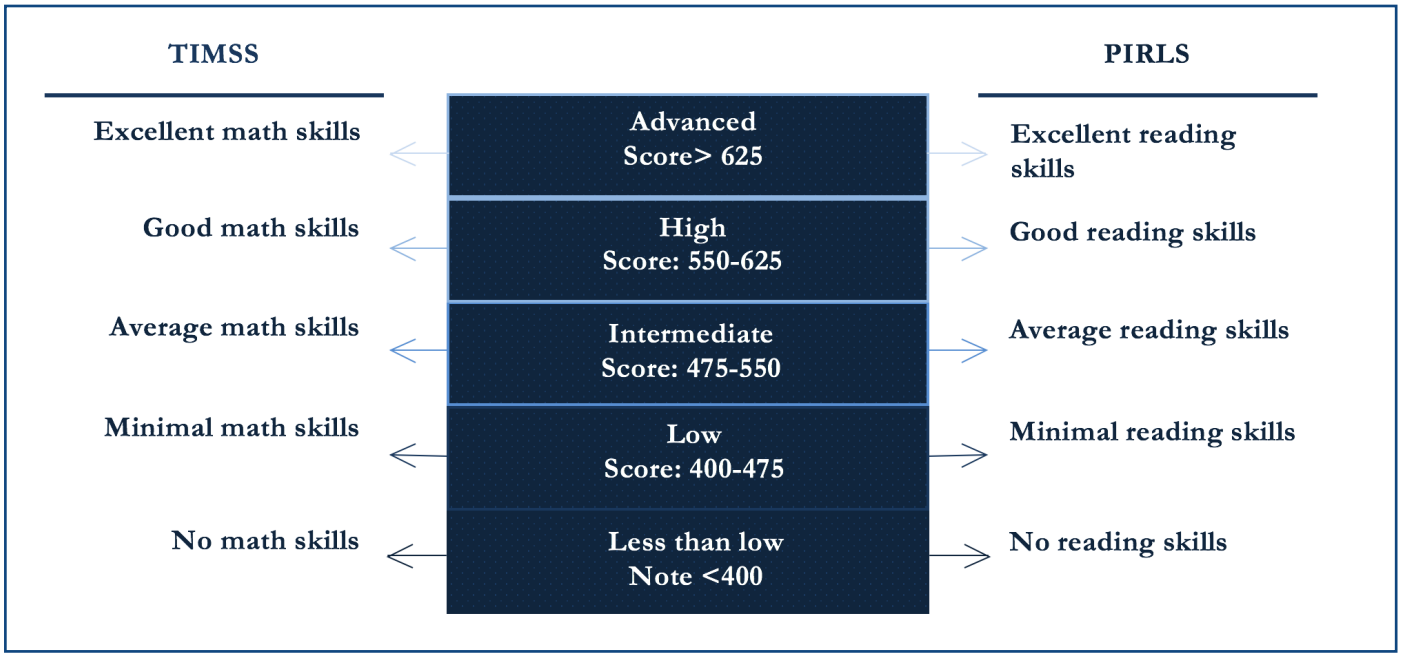

Figure 2: Timss and pirls international benchmarks

The two averages are well below the lowest benchmark, reflecting the weak instruction received by students. Before going further, it should be stressed that other Arab countries share Morocco's situation. Figure 3 shows the performance of the first and last five countries on two studies, where Arab countries are ranked last. While it is true that Morocco ranks lower than other countries, it is important to note, however, that the quality of education in Arab countries requires improvement. Such is not the case of the East Asian region that monopolizes the lead. Proof of this is the performance of Hong Kong (1st in reading and 3rd in math) and Singapore (1st in mathematics and 4th in reading).

These two cases are quite telling. Of the 36 countries participating in the PIRLS 2001 assessment, Hong Kong was ranked fourteenth. This caused an uproar in the Hong Kong public opinion pointing to government responsibility, which was then followed by a series of reforms. From 2002 to 2005, seminars were organized for parents to help build their children's reading skills. All schools have been provided with proper libraries. Pedagogy and curricula have been transformed from conventional approach, based on dictation, to a teaching method designed to motivate students to love reading by teaching them the different reading methods. In addition, a minimum of 30 minutes per day was allocated to reading extracurricular newspapers and books. These combined efforts have been successful. With the next PIRLS assessment conducted in 2006, Hong Kong's ranking increased from 14th to 2nd place, only one point away from 1st place held by Russia. Five years later, this Chinese Special Administrative Region was awarded first place ahead of countries such as the United States or England. Even more surprising, one in four students were able to reach the advanced benchmark. No country had previously been able to achieve this feat.

With regard to Singapore, the OECD has classified its education system as the best in the world. Yet the initial situation could hardly predict such a future. With the country's accession to independence, this former British colony registered significant illiteracy rates. Without any natural resources, Singapore made every effort to develop its education system. Initially, a literacy campaign was launched to reduce the illiteracy rate. This choice was necessary to attract foreign investment in search of a low-cost labor. Then the goal was to attract investors seeking skilled labor. To do this, the quality of education and student retention were placed at the heart of educational policies.

«An accessible educational system that offers equal opportunities allows everyone to acquire the skills that will enable each person to later earn higher income»

By the 1990s, a new program was launched to provide its citizens with the knowledge and skills to meet the demand of the sectors at the forefront of technology. Since then, the curricula were oriented towards creativity and innovation, an approach that has since persisted. Today, Singapore has a per capita GDP estimated at 62,400 dollars.

Unfortunately, the evolution of these two examples contrasts with that of Morocco. Morocco's average rating has not improved for reading or math. Moroccan students' performance in mathematics dropped 12 points, from 347 points in 2003 to 335 points. For reading, the decline is much more worrying with a loss of 40 points, from 350 points in 2001 to 310 points in 2011. In fact, it is the largest decline among all participating countries. To provide perspective, the second largest decline was only 19 points, less than half the drop observed in Morocco. The important issue to keep in mind in this evolution is that Morocco is struggling to move closer to the threshold of 400 points at the low benchmark. This low benchmark represents the threshold below which the student may be considered practically illiterate. It appears that the reforms undertaken have not resulted in increasing the quality of education.

By analyzing the distribution of scores, the situation becomes even more concerning. In 2011, PIRLS revealed that 79% of Moroccan students test below the low benchmark. This means that 4 out of 5 students are close to illiteracy. This rate was 76% in mathematics, meaning that slightly more than 3 of 4 students have no concept of this subject. These figures conceal spatial disparities that are even more disturbing. In rural public schools, students whose level is below the low benchmark increase to 86% in reading and 82% in mathematics. In urban public schools, these rates are around 82% for both subjects.

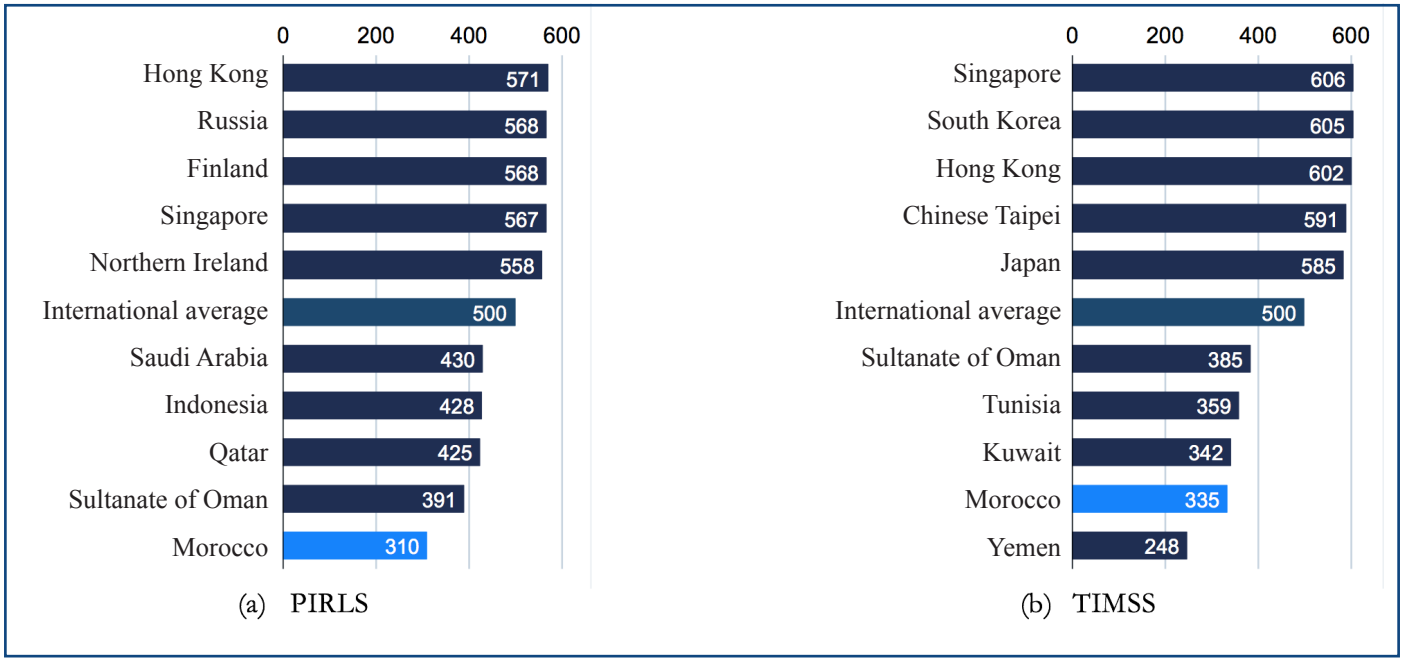

Figure 3: Morocco's ranking in reading and mathematics

Given these figures, the public sector is far from fulfilling its role. Most of its students learn nothing or very little. Comparing these rates with those of the private sector, the gap is important. Students enrolled in private schools, whose scores are below 400, represent 30% in math and 39% in reading. Although these percentages remain high, an analysis of the student level by sector clearly reveals a considerable gap in favor of private schools. The fate of public school students is unfavorable. The impact of such a gap on the social level is significant because the deficit in primary school students will continue throughout their curriculum, and continue thereafter onto the labor market.

«Furthermore, an analysis of rural public school students is quite interesting. Indeed, students with high math scores are mostly found in rural areas»

On the other hand, the brightest students are rare in Moroccan schools. Nationally, one out of 100 students was able to reach the highest benchmark in mathematics and 6 out of 1,000 students in reading. In urban public schools, these ratios are 3 out of 1,000 students and 2 out of 1,000 students. In contrast, 4 out of 100 students in private schools have a high level in math and reading. Furthermore, an analysis of rural public school students is quite interesting. Indeed, students with high math scores are mostly found in rural areas. Of the 6,943 students who participated in the TIMSS test, 93 obtained the high benchmark and only 8 reached the advanced benchmark. For the first category, nearly half are located in rural areas, while for the second, 7 pupils reside in rural areas. In contrast, of the 7,805 students participating in the PIRLS assessment, 51 obtained the high benchmark, two thirds of which are educated in private schools. In addition, one student who tested at the high benchmark level has a public school education. The comparison of these two studies echoes other studies, which suggest that language learning is conditioned by the student's environment. The more the student's family is educated, the more the language level will be high. Conversely, students whose family is poorly educated, experience a delay in terms of learning languages.

«However, learning scientific material is not influenced by a student's family conditions. The results from Morocco are the perfect example»

On the subject of the role of preschool, the effect of preschool is different on student performance depending on the type of school attended. For public school students in urban areas, access to primary school while bypassing preschool proves disadvantageous. On average, a student without preschool education lags

by 28.4 points in mathematics and 21.34 points in reading. For those who are enrolled in rural areas, reading trails behind by 14.28 points. Seemingly low, this difference should not camouflage the poor quality of preschool in rural areas that is predominated by traditional education. Furthermore, a preschool enrollment in the rural area seems to penalize mathematics scores. Indeed, the gap is 13 points in favor of students who have not attended

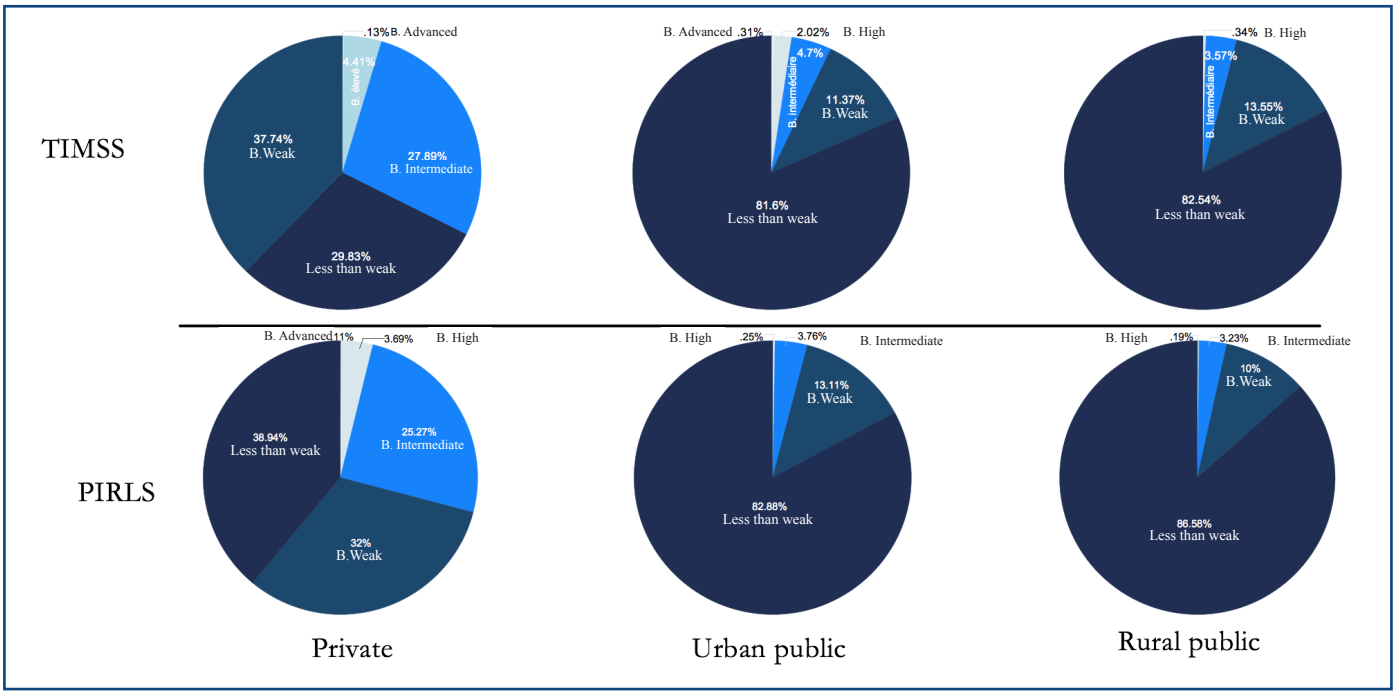

Figure 4: Distribution of scores

preschool education. Based mainly on rote learning, the traditional preschool education tends to impair learning scientific subjects, which require a minimum of reasoning. Of course, this deduction requires a thorough study to confirm the observation. As for private schools, students who do not have a preschool education seem to catch up, because the difference is not statistically significant for the two subjects.

Similarly, the gender gap is also notable in the Moroccan educational system. According to various studies conducted on this subject, it is accepted that girls outperform boys in humanities while the boys outperform girls in science. In Morocco, the results show that girls outperform boys in the two subjects. However, there is a large gender gap in reading proficiency. At 35 and 31 points in urban and rural public schools, the gender gap is estimated at 11 points in private schools, three times less than in public education. In terms of mathematics, the gap remains low compared to reading, at 7 and 11 points in urban and rural public schools. As for private schools, the difference between girls and boys was not statistically significant.

Avenues for reflection

In summary, analysis of learning achievements of students highlighted their poor performance. Moreover, this finding tends to worsen every year despite the reforms put in place. It also appears that the public sector has failed to fulfill its mission. In addition to the fact that more than 4 of 5 students are close to illiteracy, public education seems more penalizing to boys and to students without preschool. A more efficient private education system is able to mitigate the inequalities at entry to the primary level. It goes without saying that if the status quo is maintained, the risk of social segregation impedes any progress to date.

The strategic vision is therefore timely. This new vision provides solutions. Take for example, the integration of preschool at the primary level, the implementation of tutoring, the establishment of libraries, and the revision of curricula and teaching methods. That said it is important to note that prior to striving for excellence, it is essential to eradicate illiteracy in schools. The results presented in the previous section demonstrate that this phenomenon

of illiteracy is ubiquitous in public schools. At the same time, boys seem to lag behind girls in both subjects and particular attention should be paid to this category of students. Regarding rural schools, the reading deficiency should be taken into consideration. However, a large portion of students who are outstanding in mathematics are from the rural area. A total of 7 out of 8 students tested at the advanced benchmark in rural areas. What explains this result? At this stage it is only possible to offer some ideas. Among which are the prerequisites for excelling in both subjects. Reading requires an educated family environment while no prerequisites are required in mathematics. This would explain the scientific profile of students in rural areas.

Finally, the strategic vision still has a way to go. The current situation of the quality of education requires special attention. In addition, each category of schools has characteristics of its own. Lifting schools out of this profound state will require a considerable amount of time. However, the proposed approach is promising. Now the question is, how will each category of schools be treated? How will the monitoring process be implemented? How can parents be involved? How will curricula and teaching methods be revised according to the target audiences? The answers to these questions are crucial to ensuring successful public schools offer equal opportunities.

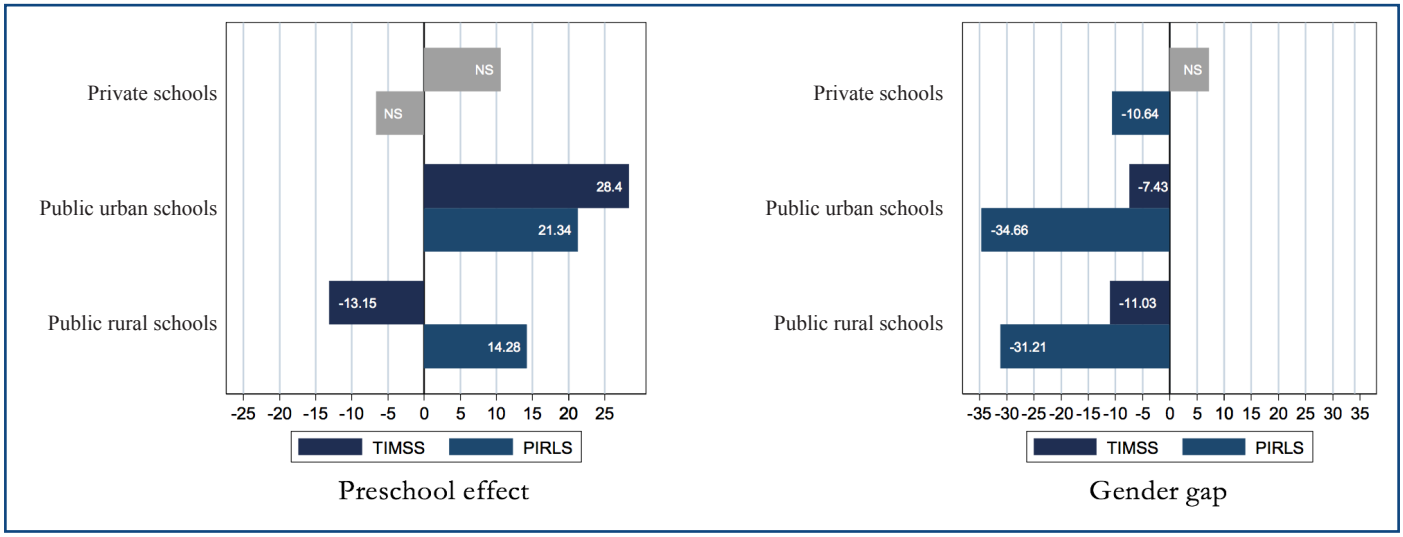

Figure 5 : Gap in preschool education and gender gap

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