

POLICY BRIEF

School Rationalization Baseline Study: *The Situation of Crowded and Underutilized Schools in Jordan*

Abstract

The findings presented in this policy brief aim to stimulate a policy level debate about the extent to which crowdedness and underutilization continue to be an issue in Jordan. Although the overall number of crowded and underutilized schools has decreased in the last three years, some important trends in crowdedness and underutilization persist: Jordan continues to have a large percentage of schools that are overcrowded and an even larger percentage of schools with excess capacity.

International research suggests that school crowdedness may decrease teachers' ability to practice progressive teaching methodologies and may also negatively affect students' academic performance. Conversely, there is evidence that underutilized schools put unnecessary strain on national education resources and may have only limited, if any, positive effects on student achievement.

I. Introduction and Approach

In 2011, The National Center for Human Resource Development (NCHRD) in Jordan, with support from USAID-funded Monitoring and Evaluation Partnership (MEP) project¹ conducted a study on the situation of crowded and underutilized schools in Jordan.

For this baseline study, Education Management Information System (EMIS) data were analyzed to present progress made between 2007-2008 and 2010-2011 with regard to crowded and underutilized Ministry of Education (MOE) schools. EMIS preliminary data from 2010-2011 were also analyzed to describe main characteristics of crowded and underutilized MOE schools. Finally, focus groups and interviews with key education stakeholders (teachers, parents, students, principals, and directorate officials) were carried out to identify significant factors contributing to over-crowdedness and underutilization.

International research suggests that school crowdedness may decrease teachers' ability to practice progressive teaching methodologies (Blatchford et al. 2011 & Folmer-Annevelink et al. 2010) and may also negatively affect students' academic performance (Bruhwiler & Blatchford 2011 and Shin & Raudenbush 2011). Conversely, there is evidence that underutilized schools put unnecessary strain on national education resources and may have only limited, if any, positive effects on student achievement (Fuller et al. 2009). The baseline study report presents general characteristics of crowded and underutilized MOE schools and identifies those schools in need of immediate attention. In addition, the report discusses possible associations between crowdedness, underutilization, teachers' application of Student-Centered Active Learning and Teaching (SCALT) methodologies in the classroom, and students' performance in the National Assessment for the Knowledge Economy (NAfKE). The findings presented in this policy brief aim to stimulate a policy level debate about the extent to which crowdedness and underutilization continue to be an issue in Jordan.

¹ MEP is implemented by World Education, Inc.

II. Findings

Progress Made in the Last Few Years (based on current 1.2m² per student MOE criteria):

The current MOE standard to determine the adequacy of classroom space is 1.2 m² per student in a classroom unit. Schools where students occupy less than 1.2 m² are considered crowded. Schools where students occupy more than 1.2 m² are considered underutilized. According to this standard, the total number of underutilized schools (1,891) is greater than the number of crowded schools (1,244). However, there has been a slightly larger decrease in the number of crowded schools (3.0%) than underutilized schools (2.4%) from 2007-2008 to 2010-2011. Only 8% of schools in Jordan are considered neither crowded nor underutilized (276).

The most noticeable changes occurred in:

- *Female schools*: reduction of 24% in the number of crowded schools and 28% of underutilized schools.
- *Owned + rented² schools*: reduction of 15% in the number of crowded schools and 14% of underutilized schools.
- *Secondary schools*: reduction of 14% in the number of crowded schools.
- *Double-shift schools*: reduction of 15% in the number of crowded schools and 14% of underutilized schools.
- *Rural schools*: reduction of 22% in the number of crowded schools and 7% of underutilized schools.
- *Mixed³ and urban schools*: Increases in the number of crowded schools were observed in mixed schools (13%) and urban schools (16%).

Characteristics of Crowded Schools (schools with less than 1.2m² per student in a classroom unit):

- In Jordan, 1,244 (37%) of MOE schools are considered crowded. Crowdedness affects mostly mixed (46%) and male (37%) schools. Crowding is also most prevalent in basic schools (78%) and single shift schools (90%). Most crowded schools are in urban areas (60%).
- The largest average student-teacher ratios can be observed in double-shift schools (21:1) and schools in the middle of the country (also 21:1). The smallest student-teacher ratio in crowded schools is found in southern schools (14:1).
- The largest number of students per classrooms can be found in female schools (32 students per classroom) and owned schools (32 students per classroom). Important differences in classroom sizes can be observed in urban (31 students per classroom) and rural (25 students per classroom) schools.

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² Owned + rented pertains to schools that include rented buildings associated to the buildings owned by the MOE.

³ Mixed pertains to co-educational schools which are only in grades 1-3.

- Actual enrollment and current capacity levels in crowded schools vary by directorate. Although all directorates have schools that are operating above their enrollment capacity level, four directorates are 30% or more above their enrollment capacity. These are: Ma'an (33%), Tafeelah (32%), Eain Albash (31%) and Ajlune (30%).
- The school utilization rate (student enrolment over estimated capacity of the school) in crowded schools exceeds 100%. A total of 404 schools (32.5%) have utilization rates above 150%. It is also important to note that 7.8% of crowded schools have utilization rates above 200%.
- The most commonly cited reasons for crowdedness are: 1) high population density (in some cases, high influx of immigrants); 2) school has good reputation; 3) good transportation to and from school; 4) good relations between principal and teachers and community trusts the school; 5) families' incomes prevent access to private schools; and 6) teaching staff is competent.
- The most cited challenges faced by crowded schools include: 1) poor quality of school facilities and management; 2) lack of learning resources; 3) challenge in applying new instructional and assessment strategies to large numbers of students; 4) lack of opportunities for students to interact in the classroom; and 5) lack of communication between parents and teachers over curricular activities.

Families' incomes prevent access to private schools, which, in many cases, forces low-income students to crowd into public MOE schools.

Characteristics of Underutilized Schools (schools with more than 1.2m² per student in a classroom unit):

- A total of 1,891 schools (55%) are considered underutilized. Underutilization affects mostly mixed (51%), male (36%), and single shift schools (96%). Most are located in rural areas (62%).
- Underutilized schools have average student-teacher ratios below 20:1, with the exception of double shift schools (21:1). The lowest average student-teacher ratio can be found in rented and owned + rented schools (8:1).
- Classroom sizes vary substantially, depending on the type of school. Rented and owned + rented schools have, on average, fewer students per classroom (10 and 12, respectively) than other types of schools. Further observations reveal that even in underutilized schools, the average classroom size in urban and double shift schools is relatively high (30 and 32 students per classroom).
- Actual enrollment and current capacity levels in underutilized schools vary by directorate. Although all directorates have schools that are operating below their enrollment capacity level, we have identified four directorates with enrollment 70% or less below their capacity. These are: Shoobak (121%), Theeban (86%), Badia Wasta-Gezah (83%), and Qasser (76%).
- The school utilization rate (student enrolment over school capacity) in underutilized schools is below 100%. Schools that are 30% or below their capacity can be considered extreme cases in the utilization rate scale. A total of 142 (5.2%) schools fall under that category.

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Internal labor migration, poor transportation, and lack of proper school facilities contribute to underutilization.

- The main cited reasons for underutilization are: 1) distance from residential areas; 2) the majority of residents are elderly, and there is a small number of residents and students; 3) poor/difficult transportation; 4) youth movement to work in cities (internal migration); and 5) lack of proper facilities (science and computer labs, WCs, classrooms, and water) and maintenance.
- The main challenges faced by underutilized schools include: lack of qualified teachers, students' low academic achievement, and lack of facilities and programs to attract and motivate students.

Extremely Crowded and Underutilized Schools

The baseline study report proposed a more comprehensive criterion for identifying extremely crowded and underutilized schools (see Table 1) to enable the MOE to be better able to identify schools that need the most attention. Schools under these categories fall under the top or bottom 25th percentile with regards to: 1) area per students; 2) number of students per classroom; and 3) student-teacher ratio.

Table 1: Characteristics of Extremely Crowded and Extremely Underutilized Schools

Characteristics	Extremely Crowded (n=187)	Extremely Underutilized (n=557)
Average area per student	0.75 m ²	3.5 m ²
Average class size (# of students per classroom)	36.5	7.9
Average student-teacher ratio	24 : 1	5.6 : 1
Number and % of schools without computer labs	13 (8.2%)	55 (14.8%)
Number and % of schools without science labs	58 (36.5%) ³	202 (54.3%) ⁴
Gender		
Male	38.5%	27.3%
Female	21.4%	4.7%
Mixed	40.1%	68.0%
Location		
Rural	17.1%	91.6%
Urban	82.9%	8.4%

There are no statistically significant correlations between teachers' practices of SCALT methodologies and area per student in a classroom unit. However, negative coefficients suggest that teachers' SCALT scores tend to be lower in underutilized schools.

Correlations between SCALT practices, students' NAfKE scores, and area occupied by students

- There are no statistically significant correlations between 5th, 9th, and 11th graders' NAfKE scores in Math, Science, and Arabic and area per student in a classroom unit. However, some negative coefficients suggest that underutilization might be associated with lower NAfKE scores.
- Similarly, there were no statistically significant correlations between teachers' practices of SCALT methodologies and area per student in a classroom unit. However, negative coefficients suggest that teachers' SCALT scores tend to be lower in underutilized schools.

⁴ Missing cases = 28

⁵ Missing cases = 85

III. Policy Options

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

Develop more comprehensive criteria for identifying crowded and underutilized schools in order to allocate resources more appropriately.

Many schools are considered crowded or underutilized by the MOE standard of 1.2 m² per student in a classroom. However, we recommend that the MOE expand its definition of crowdedness and underutilization to include information about classroom size and student-teacher ratio. By developing a more comprehensive criterion, the MOE would be better able to identify schools that need the most attention.

Prioritize areas and schools with the largest percentage of extremely crowded schools, such as Amman III and Zarqa II Directorates. More specifically, focus on male, co-ed and rented schools.

To decrease the number of extremely overcrowded schools, the MOE could do the following:

- Consult parents and other key stakeholders about the possibility of transferring students from extremely overcrowded schools to neighborhood underutilized schools, taking into consideration the financial implications for parents and the MOE.
- Increase the classroom areas in overcrowded schools where it might be difficult to transfer students elsewhere.
- Review student per teacher ratios as well as classroom sizes in the overcrowded schools and try to modify them to be close to the national levels. One way to do that is to turn single shift schools into double shift schools.
- Create a long-term planning strategy with funders to build schools in densely populated catchment areas in the near future.

Consider improving teacher recruitment and training, particularly in underutilized schools in rural areas.

The results from interviews and focus group discussions reveal that schools might become overcrowded because parents and communities believe those schools offer better quality education than underutilized schools. We suggest the MOE focuses on issues that matter most to improve education quality, namely: 1) getting the right people to become teachers; 2) developing them into effective instructors; and 3) ensuring that the system is able to deliver the best possible instruction for every child (McKinsey and Company 2007). It is critical to offer teachers incentives to move to underutilized and sparsely populated schools.

Examine carefully the location and overall infrastructure and capacity of underutilized schools in urban areas and make an attempt to transfer/transport students from the most crowded to the underutilized schools.

We suggest the government study the mapping of extremely underutilized schools in order to:

- Close the rented schools where underutilized schools are available and provide transportation where needed to facilitate regular attendance in these schools.

Many schools are considered crowded or underutilized by the MOE standard of 1.2 m² per student in a classroom. However, we recommend that the MOE expand its definition of crowdedness and underutilization to include information about classroom size and student-teacher ratio.

Jordan continues to have a large percentage of schools that are overcrowded, and an even larger percentage of schools with excess capacity. We recommend that the MOE expand its definition of crowdedness and underutilization to include information about classroom size and student-teacher ratio to address the challenge of crowding and underutilization in a cost-effective, comprehensive and sustainable manner.

- Merge neighboring underutilized schools.
- Refrain from building schools in locations where there are underutilized schools.
- Conduct community-based campaigns about the current evidence on underutilized schools and students' performance.
- The MOE could improve the infrastructure and the quality of teaching resources and facilities in under-utilized schools, such as computer and science laboratories, in order to attract some students from extremely overcrowded schools to underutilized schools in the same or close to the same catchment area.

Conclusion

Although the overall number of crowded and underutilized schools has decreased in the last three years, some important trends in crowdedness and underutilization persist. Jordan continues to have a large percentage of schools that are overcrowded and an even larger percentage of schools with excess capacity. We recommend that the MOE expand its definition of crowdedness and underutilization to include information about classroom size and student-teacher ratio. With the more narrowly defined criterion suggested in this brief, as well as tailored plans to meet the varied needs of these extreme cases, the MOE could address the challenge of crowding and underutilization in a cost-effective, comprehensive, and sustainable manner. After all, schools must have enough space, resources, and necessary value-added learning to motivate students and parents. Finally, it has been shown through preliminary analysis that there is no concrete evidence of the link between crowdedness and/or underutilization and teachers' application of SCALT methodologies in the classroom or students' NAFKE achievement. Future evaluations are necessary to investigate those correlations further. However, for the time being, the MOE should not assume that underutilization or crowdedness alone might be responsible for fostering 21st century skills in schools.

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