Condition of America's Public School Facilities: 1999

NCES: 2000032
June 2000

Functional Age of Schools: Condition and Plans for Improvement

The age of schools is frequently included in discussions of the state of school facilities, either as a proxy for condition or as a partial explanation. For example, older schools are oftentimes referred to as broken down or in need of repair, when in fact not all old schools are in this condition. Additionally, schools that are in need of repair are often referred to as showing their age, though in fact not all schools in need of repair are particularly old. In this chapter, information about the age of public schools is presented. Age is then examined in the context of school condition and plans for repair, renovation, and replacement of building features.

Determining the Age of Public Schools

Determining and describing the age of public schools can be difficult. Many schools have instructional buildings that have been heavily renovated in the years since they were built. For such schools, the year of their last renovation is often a better index of the school's age than the year of original construction. In describing school age, therefore, consideration must be given to both the year of construction and year of most recent renovation for schools that have been renovated. GAO makes a similar point in their discussion about building age, pointing out that building age, by itself, is not necessarily the most significant factor in considering the condition of schools, and that many older school buildings continue to have a useful life equivalent to a new building if they are well maintained and periodically renovated (U.S. GAO 1995b, 1996).

For this report, a measure of the functional age of the school is derived and then used to examine the relationship between school age and the condition of schools and plans for improvement.

Functional age is based on the year of construction of the main instructional building(s) for schools that have not experienced any major renovations since their original construction.

However, for schools that have been renovated since their construction, the functional age is based on the year of the most recent major renovation. In addition, information is presented in this report about the age of the main instructional buildings as measured in years since original construction, and in years since the most recent renovation.

In 1999, the average age of the main instructional building(s) of public schools was 40 years, based on years since original construction (Table 17). Across all schools reporting a major renovation since initial construction, the renovation had occurred on average 11 years ago. The average functional age of schools, as defined above, was 16 years. The average functional age of the school varied by school enrollment, with small schools on average older than medium or large schools (20 years compared with 15 and 14 years, respectively).

In addition to examining the average age of schools, schools can also be examined based upon the distribution of schools across different functional age groups (Figure 5 and Table 18). Overall, about one-third (32 percent) of public schools had a functional age of less than 5 years, 28 percent had a functional age of 5 to 14 years, 26 percent had a functional age of 15 to 34 years, and 14 percent had a functional age of 35 years or more. There was some variation in the functional age distributions by school enrollment size and region (Table 18). Large schools were more likely than small schools to have a functional age of less than 5 years (37 percent compared with 25 percent), and small schools were more likely than large schools to have a functional age between 15 and 34 years (35 percent compared with 23 percent). Schools in the South were more likely than schools in the Midwest to have schools with a functional age of 5 to 14 years (35 percent compared with 25 percent), and schools in the Midwest were more likely than schools in the Northeast to have a functional age of 35 or more years (18 percent compared with 8 percent). Other differences based upon school characteristics that appear large may not be statistically significant, due in part to relatively large standard errors around estimates (due partly to the sample size) or the Bonferroni adjustment for multiple comparisons.

Functional Age and Condition of Schools

It is often assumed that school age and condition are closely related, with older schools being in worse condition than newer schools. This relationship is explored using the functional age of schools as an indicator of age, and three indices of school condition: at least one onsite building in less than adequate condition, at least one building feature in less than adequate condition, and at least one environmental factor in unsatisfactory condition. In general, the survey data support the assumption that older schools typically have worse school conditions than newer schools (Figure 6).

Overall, about one-fourth of all public schools reported that at least one type of onsite building was in less than adequate condition (see Table 3). The proportion of schools with at least one type of onsite building in less than adequate condition varied somewhat by the functional age of the school, with older schools generally more likely than newer schools to report this condition (Figure 6). Schools with functional ages of 35 years or more, and those aged 15 to 34 years, were more likely to report at least one onsite building in less than adequate condition than were newer schools with functional ages of less than 5 years or 5 to 14 years (41 percent and 32 percent versus 14 percent and 19 percent, respectively).

Another indicator of poor school condition is the assessment of building

features as less than adequate. Half of the schools reported at least one building feature in less than adequate condition (see Table 4). As with the pattern for onsite buildings, the proportion of schools indicating less than adequate condition for at least one building feature varied somewhat by the functional age of the school, with older schools generally more likely than newer schools to report this condition (Figure 6). About three fourths (77 percent) of schools with functional ages of 35 years or more, and 61 percent of schools aged 15 to 34 years, indicated less than adequate condition for at least one building feature, compared with 41 percent for schools with functional ages of 5 to 14 years and 39 percent for those aged less than 5 years.

The final indicator of school condition used in this report is satisfaction with the condition of six environmental factors. Forty-three percent of the schools reported that at least one environmental factor was unsatisfactory (see Table 8). [39] The proportion of schools reporting at least one unsatisfactory environmental factor differed somewhat by the school's functional age, with older schools generally more likely to report this condition than newer schools (Figure 6). About two-thirds of the schools aged 35 years or more, and about half of the schools aged 15 to 34 years, reported at least one unsatisfactory environmental factor, compared with 34 percent each for schools with functional ages of less than 5 years or from 5 to 14 years.

Functional Age and Plans for Repair, Renovation, and Replacement

As schools age, they often require repairs or renovations. Overall, about half (51 percent) of all public schools planned at least one major repair, renovation, or replacement of a building feature in the next 2 years (see Table 14). In addition, as schools age, more effort may be invested in maintaining them (of course, some districts may opt to replace rather than maintain an aging school). Thus, the functional age of schools might be expected to make a difference to whether schools have plans for a major repair, renovation, or replacement of building features in the near future. This idea is partially supported by the survey data (Figure 7). Schools with a functional age of 15 to 34 years were more likely to report that they had plans for at least one major repair, renovation, or replacement of a building feature than were newer schools with functional ages of less than 5 years or 5 to 14 years (61 percent versus 49 percent and 40 percent, respectively). However, the oldest schools (with a functional age of 35 years or more) did not differ statistically from schools with functional ages of less than 5 years or 15 to 34 years in reporting plans for at least one major repair, renovation, or replacement of a building feature.

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[39] While condition of buildings and building features are reported as less than adequate, the environmental factors are reported as unsatisfactory.

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