Mixed-Grade Grouping in Maine Schools

January, 2008

Janet Fairman, Ph.D.
Xiongyi Liu, Ph.D.

Center for Research and Evaluation
University of Maine
5766 Shibles Hall
Orono, ME 04469-5766
207/581-2493
207/581-9510-fax
http://www.umaine.edu/edhd/research/cre.htm
Mixed-Grade Grouping in Maine Schools

In recent years, there has been renewed interest in mixed-grade grouping (also called: multiage, multigrade, or non-graded grouping). Some schools have combined grades for pedagogical reasons, with the goal of improving students’ social and academic skills and allowing students to progress at individual rates (Elmore & Wisenbaker, 1996; George & Lounsbury, 2000). The literature on effective middle schools describes looping and mixed-grade grouping as structures that support the goals of increasing students’ sense of belonging, supporting meaningful student-teacher relationships, and providing flexibility to meet students’ varied developmental needs (George & Lounsbury, 2000; Jackson & Davis, 2000; NMSA, 2003, 2005). Schools have also combined grades in an effort to cope with small enrollment and budget constraints (Mason & Doepner, 1998).

Most studies of mixed-grade grouping have measured the effects of this structure on standardized test achievement at the elementary level. Overall, the research has found the effects are neutral or inconclusive (Veenman, 1995). A few studies have focused on social and emotional effects, and found strong evidence of positive impacts for students (e.g., Elmore & Wisenbaker, 1996; Pratt, 1986). There is little research on mixed-grade grouping past grade six, and published studies offer scant description of why and how schools implement this structure. Moreover, there is little information about the prevalence of this grouping structure.

Research on mixed-grade grouping in Maine is limited. A K-8 principal survey conducted jointly by the Maine Principals’ Association and the Center for Research and Evaluation at the University of Maine in 1996 found that almost half (47%) of the 201 responding Maine schools reported they had only single-grade classrooms, while 41% reported they had both single-grade and mixed-grade classrooms, and 11% reported they had only mixed-grade classrooms (Maine Principals’ Association, 1996). In Maine and other states, the heightened focus on fiscal efficiency and projections for a shrinking student population provide a context in which small, rural schools are likely to increase their use of mixed-grade grouping.

To address the gaps in the literature and knowledge base, Fairman and Liu, Center for Research and Evaluation at the University of Maine, Orono conducted a study in 2006-07 to explore the use of mixed-grade grouping in Maine schools. The study included case studies and a statewide school survey. This bulletin presents the results from the survey, which was used to investigate the following research questions:

- To what extent do elementary and middle schools in Maine have mixed-grade classrooms?
- How many and which grades are typically combined?
- Why do elementary and middle schools in Maine combine grades?
- To what extent do these schools offer parental choice for student assignment to mixed-grade classrooms?
- How do teachers deliver curriculum and instruction within a mixed-grade classroom?
METHOD

Survey data for this study were collected through the Maine Public School Census Survey in December 2006. The survey has been conducted by the Maine Education Policy Research Institute (MEPRI) at the University of Maine, Orono six times since 1995. Four versions of the survey were mailed out to all schools in Maine with the following grade designations: K-5, K-8, 6-8, and 9-12. Principals or their designees completed a survey or combination of surveys that best matched their school’s grade configuration. For example, a grade 3-5 school would fill out the K-5 survey, a grade 5-8 school would fill out the K-8 survey, and a grade K-12 school would fill out both the K-8 survey and the 9-12 survey.

While some common items have been retained across the years for longitudinal study, the survey has been updated each time to include new questions regarding pertinent educational issues in the state. In December 2006, five new items were added to the survey to explore the use of mixed-grade grouping in elementary and middle grades. These items were not included on the grade 9-12 survey. The items asked schools to indicate if they combine any grades and, if so, to respond to four additional items on how and why mixed-grade classrooms were implemented. The items included both fixed-choice and open-ended responses. One item asked schools to indicate the extent to which certain factors influenced the decision to combine grades using a Likert scale.

Among the 536 Maine schools surveyed, 346 schools responded to the first survey item asking if the school has any mixed-grade classrooms (yes or no). This yielded a response rate of 65%. Schools that answered “yes” completed the remaining four survey items. Due to the great variety of grade configurations for Maine schools, survey results were organized and are reported here according to six different grade configuration types or categories, rather than by the survey form schools returned. Table 1 shows the response rates for schools of different grade configurations that answered the first item on mixed-grade grouping. Schools with elementary grades up to grade 6 and schools with middle grades only (e.g., grades 6-8) had the highest response rates (75% and 70% respectively). Schools with some combination of middle and high school grades (e.g., grades 6-12) had the lowest response rate (47%).

<table>
<thead>
<tr>
<th>Grade Configuration</th>
<th># of Responding Schools</th>
<th># of Schools in Maine</th>
<th>Response Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elem. school grades (up to 5th grade)</td>
<td>141</td>
<td>228</td>
<td>62%</td>
</tr>
<tr>
<td>Elem. school grades (up to 6th grade)</td>
<td>64</td>
<td>85</td>
<td>75%</td>
</tr>
<tr>
<td>Elem. school grades (up to 8th grade)</td>
<td>84</td>
<td>135</td>
<td>62%</td>
</tr>
<tr>
<td>Middle school grades only</td>
<td>45</td>
<td>64</td>
<td>70%</td>
</tr>
<tr>
<td>Combination of middle &amp; high school grades</td>
<td>7</td>
<td>15</td>
<td>47%</td>
</tr>
<tr>
<td>Combination of elem., middle, &amp; high school grades</td>
<td>5</td>
<td>9</td>
<td>56%</td>
</tr>
<tr>
<td>Total</td>
<td>346</td>
<td>536</td>
<td>65%</td>
</tr>
</tbody>
</table>

Note. Elem. = Elementary.

Survey results are presented in the following section of this report, and are organized by the research questions. Brief narrative summaries and tables/graphs describe the survey results. The conclusion summarizes the central findings.
RESULTS

Question 1: To what extent do elementary and middle schools in Maine have mixed-grade classrooms?

The first survey item asked schools to indicate whether or not they had any classrooms that combine students from different grade levels for the full day. Of the 346 schools answering this item, 97 schools (28%) responded “yes”, indicating they do combine grades. Of these 97 schools, 94 schools have elementary or middle grades, while only three schools include high school grades. Table 2 shows the number and percentage of schools responding to this item, by school configuration type. The results indicate that schools with elementary grades only or a combination of elementary and middle grades are more likely than schools with middle grades only to have one or more mixed-grade classrooms (26%-36% vs. 16%). Schools with middle grades only had a statistically lower proportion of schools with combined classrooms than elementary schools ($\chi^2 = 4.08, p < .05$). Among schools with middle grades only, just seven out of the 45 schools that responded to the survey indicated they have mixed-grade classrooms.

While the reported rate of mixed-grade classrooms seems to be very high among schools with a combination of elementary, middle, and high school grades (60%), caution needs to be taken when interpreting this result. Since there are so few schools in Maine with this configuration ($n=9$), the results could change dramatically if the four non-responding schools had returned the survey. None of the schools with a combination of middle and high school grades reported having any mixed-grade classrooms.

Because there were so few responding schools in the category of middle and high school grades and the category of elementary, middle, and high school grades, these two groups of schools were omitted in the analysis of the remaining four survey items.

Table 2. Number and Percentage of Responding Schools Indicating Whether or Not They Have Mixed-Grade Classrooms

<table>
<thead>
<tr>
<th>Grade Configuration</th>
<th>Yes</th>
<th></th>
<th>No</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Elem. school grades (up to 5th grade)</td>
<td>37</td>
<td>26%</td>
<td>104</td>
<td>74%</td>
</tr>
<tr>
<td>Elem. school grades (up to 6th grade)</td>
<td>20</td>
<td>31%</td>
<td>44</td>
<td>69%</td>
</tr>
<tr>
<td>Elem. school grades (up to 8th grade)</td>
<td>30</td>
<td>36%</td>
<td>54</td>
<td>64%</td>
</tr>
<tr>
<td>Middle school grades only</td>
<td>7</td>
<td>16%</td>
<td>38</td>
<td>84%</td>
</tr>
<tr>
<td>Combination of middle &amp; high school grades</td>
<td>0</td>
<td>0%</td>
<td>7</td>
<td>100%</td>
</tr>
<tr>
<td>Combination of elem., middle, &amp; high school grades</td>
<td>3</td>
<td>60%</td>
<td>2</td>
<td>40%</td>
</tr>
<tr>
<td>Total</td>
<td>97</td>
<td>28%</td>
<td>249</td>
<td>72%</td>
</tr>
</tbody>
</table>

Question 2: How many and which grades are typically combined?

The 94 schools with elementary or middle grades that indicated they combine grades also indicated which grade levels they combine. Figure 1 presents the percentage of schools that indicated they combine any grade from kindergarten to grade eight, among the responding schools that have the particular grade level. The results indicate that grades 1, 2, 4, and 5 were most likely to be combined (71%-75%), followed by grades 3 and 6 (62%-66%). Grades 7 and 8 also showed a high likelihood of being mixed with other grade levels (46%-51%), while kindergarten is less likely to be combined (39%). The grade level of pre-K is omitted from Figure 1. Only nine of the responding schools indicated they combine this group with another grade.
Schools differ in the number of grades they combine. Figure 2 shows the percentage of schools that indicated they combine either two grades or three or more grades for the 94 schools with elementary or middle grades that indicated they combine grades. Across all school configuration groups, a higher percentage of schools with mixed-grade classrooms indicated they combine only two grades, as opposed to three or more grades. Schools with elementary grades only are much more likely to combine only two grades, while schools with middle grades only are slightly more likely to combine two grades as opposed to three or more grades.

Again, the total number of responding schools with middle grades only that reported they have mixed-grade classrooms is very small—only seven of 45. So caution is needed in interpreting the results for this group of schools. Of the three schools with middle grades only that reported combining three or more grades, two schools have a grade 6-8 configuration and combine those three grades, and one school has a grade 5-8 configuration and combines those four grades. Of the four schools with middle grades only that reported combining only two grade levels, all four schools have a grade 7-8 configuration (junior high school model) and combine those two grades.

Figure 1. Percentage of Schools that Combined Specific Grades, Among All Schools that Reported Combining Grades

Figure 2. Percentage of Schools that Combined Two vs. Three or More Grade Levels
Question 3: Why do elementary and middle schools in Maine combine grades?

Schools were asked to indicate the extent to which different factors influenced their school’s decision to combine grades, using a four-point Likert scale. Schools were asked to rate three different factors: small class size or enrollment; difficulty recruiting teachers; and philosophical views about student learning. Schools could also write in “other” factors and rate their importance. Among responding schools that had mixed-grade classrooms, a total of 92 schools with elementary or middle grades responded to this item.

Schools of different configuration type reported different reasons for having mixed-grade classrooms. Figure 3 presents the results according to the reason for combining grades. A large majority of schools with grades up to grade six (83%) or grade eight (82%) rated “small class size or declining enrollment” as a somewhat important or very important factor. By contrast, the majority of schools with grades up to grade five (68%) and all schools with middle grades only rated “philosophical views about student learning” as a somewhat important or very important reason for combining grades. Only four schools indicated that “difficulty recruiting teachers” was a somewhat important or very important factor.

![Figure 3. Percentage of Schools that Indicated Certain Factors as “Somewhat Important” or “Very Important” in Their Decision to Have Mixed-Grade Classrooms](image)

Question 4. To what extent do these schools offer parental choice for student assignment to mixed-grade classrooms?

One survey item asked schools if parents have a choice about their child’s assignment to a mixed-grade classroom. Ninety-one schools with elementary or middle grades that indicated they have mixed-grade classrooms also responded to this survey item. As shown in Figure 4, among schools that indicated they have mixed-grade classrooms, schools with elementary grades up to grade five and schools with middle grades only were much more likely (62% and 86% respectively) than other elementary school groups to offer parents a choice about their child’s classroom assignment. By contrast, schools with elementary grades up to grade six or grade eight were more likely to have only mixed-grade classrooms or did not offer parents a choice. Half of the schools with grades up to grade eight indicated they have only mixed-grade classrooms and no alternatives so parental choice does not exist in these schools.
Question 5: How do teachers deliver curriculum and instruction within a mixed-grade classroom?

One survey item asked schools to check one of three choices that best describe how teachers deliver instruction in combined classrooms. This survey item did not include the terms “multiage”, “multigrade”, and “nongraded” to avoid differences in interpretation. Instead, the survey provided descriptions of three different grouping patterns: having all students work on the same material with no grade level distinction; having students work separately in the classroom by grade level; and a combination of the first two approaches. Ninety-one schools with elementary or middle grades that indicated they have mixed-grade classrooms also responded to this survey item.

As shown in Figure 5, the majority of the responding elementary schools with grade levels up to grade five (80%) or up to grade six (85%), and an overwhelming proportion of schools with elementary grades up to grade eight (97%), reported that teachers use a combination of grouping patterns for curriculum and instruction.

By comparison, schools with middle grades only indicated wider variation in the grouping patterns they use for instruction: 29% of these schools said their mixed-grade students work together on the same instructional activities with little or no distinction by grade level, 14% said their students primarily work by grade level on different instructional activities, and 57% said their mixed-grade classrooms use a combination of these two grouping patterns.
SUMMARY

The survey results indicate some interesting patterns by school configuration. Overall, the survey results indicate a higher prevalence of mixed-grade classrooms among schools that include elementary grades than among schools with middle grades only. Roughly one quarter to one third of the responding schools with elementary grades indicated they have mixed-grade classrooms, while only 16% of the responding schools with middle grades only have mixed-grade classrooms. Still, many of the schools that have mixed-grades include grades up to grade six or grade eight. Thus, middle level students experience mixed-grade classrooms in both middle schools and in elementary schools, but are more likely to have this experience if they attend schools with elementary grades.

Schools of all grade configurations indicated they combine grades in many different ways and at all grade levels. The majority of schools with elementary grades indicated they combine only two grades in a classroom, while schools with middle grades only combine two grades slightly more frequently than they combine three grades. A larger percentage of schools indicated they combine elementary grades from grade one to five, while a smaller percentage of schools combine middle grades from grade six to eight.

On many survey items, schools across the four configuration categories behaved as two distinct groups; the schools with elementary grades up to grade five and schools with middle grades only responded in similar ways, while schools with elementary grades up to grade six or grade eight tended to respond in a different way. For example, reasons for combining grades sharply contrasted between the two groups; schools with elementary grades up to grade six or grade eight indicated they primarily chose to combine grades due to small class size or declining enrollment, while schools with elementary grades up to grade five and schools with middle grades only indicated they combined grades due to philosophical reasons.

The existence of parental choice over student assignment to mixed-grade classrooms also breaks down by the two groups; the majority of schools with elementary grades up to grade five and schools with middle grades offered parental choice, while the majority of schools with
elementary grades up to grade six or grade eight did not offer choice or had only mixed-grade classrooms.

There was more consistency in the way schools of different configuration types responded to the question about how teachers deliver instruction in mixed-grade classrooms. Most schools with elementary grades indicated teachers use a combination of grouping patterns where students sometimes work by grade level and at other times work on the same activities. Schools with middle grades only indicated more variation in grouping patterns for instruction. A much higher percentage of schools with middle grades only (29%) than elementary schools (0-11%) indicated they have students work on the same activities without grade level distinction.

The current survey presents some baseline data on the use of mixed-grade grouping in Maine classrooms at the elementary and middle levels. Repeating the survey items in future years will allow for changes to be tracked over time. Declining elementary enrollment and the priority for fiscal efficiency in education spending may have the effect of increasing the use of mixed-grade grouping in smaller schools. Yet, the impact of school administrative consolidation may eventually lead to fewer small schools and less use of mixed-grade grouping. Consolidation could also have the effect of promoting more uniformity across schools in a Regional School Unit in how students are grouped for instruction, making it difficult for some schools to choose mixed-grade grouping for pedagogical reasons. Grade-level assessments and learning standards could also have the effect of reducing the use of mixed-grade grouping over time as schools focus on preparing each grade group in the content to be tested.

REFERENCES


National Middle School Association (NMSA) (2003). This we believe: Successful schools for young adolescents. Westerville, OH: author.
