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ABSTRACT

Multiage/multiability grouping is when more than one grade level of students is grouped in a classroom. This report summarizes the research on multiage/multiability grouping in the primary grades. The paper, which is intended for use in Kentucky's educational system, focuses on quantitatively based comparative research syntheses. The text describes the Primary Program and looks at factors that may explain improved learning and test results. It asks numerous questions: "What are the problems in implementing the multi-age/multi-grade grouping attribute of the Primary Program?" "Does the multi-age requirement limit implementation of other critical attributes of the Primary Program?" "Are there inconsistencies between the Primary Program and other components of the Kentucky Education Reform Act?" "What are the findings from research studies on multiage/multigrade grouping?" and "What effect has Kentucky's Primary Program had on the number of children labeled 'exceptional' in grade 4?" Each question is followed by a summary of research addressing that question. The findings indicate that learning is enhanced not by how schools group students for instruction, but by what they do within those groups. (RJM)

Research on

Multi-age / Multi-grade Classes

Report to the Teaching and Learning Issues Group

Representative Harry Moberly, Chair

May 1997

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The Teaching and Learning Issues Group

The Teaching and Learning Issues Group was convened in Spring 1997 by Representative Harry Moberly, with the cooperation of the Legislative Research Commission. The purpose of the group was to review components of the Kentucky Education Reform Act (KERA) related to teaching and learning, and to consider recommendations for policy revision. Among the topics considered, the Primary Program was clearly the most controversial.

What is the purpose of this report?

This report summarizes the research related to one aspect of the Primary Program: Multi-age / multi-ability grouping. In practice, this feature of the Primary Program refers to grouping more than one grade level of students in a classroom. Because even single grade classrooms include students of multiple ages and abilities, it is probably more appropriate to refer to KERA's practice of combining grades as a "multi-grade" attribute.

Since its mandated implementation in 1992, the multi-age / multi-grade attribute has remained the most controversial and most difficult for teachers. It is also the attribute teachers rate as least important and the one the fewest number of teachers would choose to continue if given the choice.

Source: McIntyre, E., & Kyle, D. (1997). Primary program. In J. C. Lindle, J. M. Petrosko, & R. S. Pankratz (Eds.), *1996 Review of research on the Kentucky Education Reform Act* (pp. 119-142). Frankfort, KY: The Kentucky Institute for Education Research.

What research was reviewed in examining the "multi-grade" issue?

There are many different kinds of research on school programs. Some reports are testimonials and anecdotes from people who have been in multi-grade classrooms. These reports tend to support the opinions of every side of an issue. For this report to the Teaching and Learning Issues Group, we turned to systematic research. Specifically, we looked at quantitatively-based comparative research syntheses. These syntheses compared U.S. and international multi-grade programs. We could not include comparative studies on Kentucky for three reasons: (1) Kentucky's Primary program has not been included in any comparative studies to date; (2) current studies of Kentucky's Primary tend to be descriptive, not quantitative; and (3) studies of Kentucky's Primary tend to amalgamate all seven critical attributes rather than focus on one feature such as the "multi-grade" attribute.

The report focuses on questions we believe are crucial to decisions regarding multi-age / multi-grade grouping practices. Our hope is that this information will be helpful in considerations of policy implementation and policy amendments.

What is the Primary Program?

The Primary Program is that part of elementary school in which children are enrolled from the time they begin school until they advance to the fourth grade. The "critical attributes" of the Primary Program include: (1) Developmentally appropriate educational practices; (2) Multi-age and multi-ability classrooms; (3) Continuous progress; (4) Authentic assessment; (5) Qualitative reporting methods; (6) Professional teamwork; and (7) Positive parental involvement (KRS 156.160, 158.030).

Originally, the Kentucky Education Reform Act (KERA) stipulated these attributes were to be implemented in all elementary schools throughout the Commonwealth. This was amended by the 1996 Budget Bill (HB 379), which included language authorizing school councils, or where none exists, the school, to determine the organization of primary programs including the extent to which multi-age groupings are necessary to implement the other critical attributes.

Is there evidence linking the "critical attributes" of the Primary Program to improvements in student learning?

Because of the wide array of definitions applied to these attributes and great variation in their application, systematic research on their effects is difficult. As noted above, descriptive cases of primary implementation form the basis of existing KY Primary studies. Comparative studies are underway, but results are not yet available.

What factors explain the improved KIRIS results at the elementary level?

A recent investigation by Kelly (1997) found the Kentucky Instructional Results Information System (KIRIS) scores of elementary students are improving more rapidly than those of middle or high school students because of four factors: (1) The smaller organizational structure of elementary schools which makes change easier; (2) Cross-disciplinary instruction which is easier to accomplish in self-contained elementary classrooms; (3) The greater malleability of elementary schools; and (4) A greater willingness on the part of elementary educators to try new things.

Source: Kelley, C. (1997). *The Kentucky school-based performance award program: School-level effects.* Paper presented at the annual meeting of the American Educational Research Association, Chicago.

What problems are noted in implementing the multi-age / multi-grade grouping attribute of the Primary Program?

1. The "multi-age" attribute of the Primary Program, interpreted by state officials as "multi-grade," magnifies the developmental differences among students in each classroom and, as a result, intensifies the challenge elementary teachers face in their efforts to provide effective instruction.

2. "Multi-age" grouping is a structural change *only* in the way students are grouped for instruction. Rather than compelling teachers to develop more creative teaching strategies or to engage in more intellectually stimulating activities, it appears to overwhelm their existing repertoire of instructional strategies.

3. "Multi-age" grouping causes many teachers to be more concerned with classroom management and keeping students on task, rather than with the quality of students' educational experiences. A survey by Rand Corporation researchers found that "approximately three-fourths of the elementary teachers responded that too much of their time was diverted from instruction to deal with classroom management issues." (p. 25).

Source: Koretz, D. M., Barron, S., Mitchell, K. J., & Stecher, B. M. (1996). *Perceived effects of the Kentucky Instructional Results Information System (KIRIS).* Santa Monica, CA: Rand.

Does the multi-age requirement limit implementation of other critical attributes of the Primary Program?

1. The increased developmental diversity of students in a multi-age classroom may restrict teachers' use of "developmentally appropriate" practices by limiting opportunities to group students who share similar physical, social, intellectual, emotional, and aesthetic/artistic needs. Although flexible grouping is an explicit component of the critical attribute "continuous progress," schools, principals, teachers and parents vary widely in their interpretations of appropriate grouping practices.

2. The increased developmental diversity resulting from multi-age grouping also makes it difficult for teachers to provide authentic assessment activities. The wide range of language skills and problem solving skills represented in a single class can inhibit teachers' efforts to engage students in journal development, self-evaluation activities, or preparing logs of experiments conducted. Furthermore, many teachers are overwhelmed by the notion of differentiated grading based on individual student goals and development.

3. Teachers in combined K-1 classes find it exceptionally difficult to provide effective instruction when kindergarten is a half-day program. These teachers typically have 12 students in their classroom only in the morning, 12 other students only in the afternoon, and another 12 students the entire day. To devise a more manageable structure that they believe meets the requirements of the law, teachers in some schools have asked that kindergarten students be placed in their classrooms *only* in the morning or *only* in the afternoon, but not both. To do

this with current resources, however, requires exceeding the state class size limit of 24 students in primary classrooms. Responding to the requests of teachers who feel pressured to comply with the multi-grade attribute of the Primary Program, SBDM councils typically agree to adjust the class size limit. As a result, kindergarten students in their first year of school, who need the most individualized attention and direction from teachers, and who would benefit most from smaller classes, spend their half of an instructional day in classrooms containing 30 to 34 students.

Source: Guskey, T. R., & Oldham, B. R. (1996). *Despite the best intentions: Inconsistencies among components in Kentucky's systemic reform.* Paper presented at the American Educational Research Association, New York City.

Are there inconsistencies between the Primary Program and other components of KERA?

1. ***The Primary Program and School-Based Decision Making***. The state statute on School-Based Decision Making (SBDM) explicitly grants to SBDM councils the right to make policies on the "planning and resolution of issues regarding instructional practices" (KRS 160.345). Implementation of the Primary Program and its accompanying "critical attributes" is *mandated* by the state (KRS 156.160). Thus while KERA purports to treat educators as professionals and empower them to make decisions about how best to meet student learning goals, the mandated implementation of the Primary Program largely controls how elementary educators are to meet those goals.

2. ***The Primary Program and the Assessment and Accountability Program***. The "non-graded" structure of the Primary Program is designed to facilitate "continuous progress" and eliminate the stigma of retention for students developing at a slower rate. Under the current system, however, when students reach grade 4 they are required to take part in the Assessment and Accountability Program. Based on the results from the grade 4 and grade 5 assessments, elementary schools are either rewarded for showing significant gains or sanctioned for not making sufficient improvement.

   One device available to schools to keep potentially low-scoring children away from these high stakes assessments, and gain additional time to prepare them for the assessments, is to give these children "another year" in the Primary Program. Because retention is calculated only for grades 4 and 5 in the Accountability Index for elementary schools, retention in the Primary Program does not count against a school in any way. This condition creates the potential for students whose academic skills are considered "marginal" to possibly spend an additional year in the Primary Program. Even though research evidence suggests such a practice is unlikely to benefit these students, at least one "successful" Kentucky elementary school promotes the practice of "extra" time in the Primary program.

Sources: Eastside Elementary School, Harrison County. (1997). In Kentucky Dept. of Education (Ed.). *Resource guide for PASS Schools*, pp. 270-278. Frankfort, KY: Author.

McGill-Franzen, A., & Allington, R. L. (1993). Flunk 'em or get them classified: The contamination of primary grade accountability data. *Educational Researcher*, 22(1), 19-22.

Oldham, B. R. (1994). A school district's perspective. In T. R. Guskey (Ed.), *High stakes performance assessment: Perspectives on Kentucky's educational reform* (pp. 55-63). Thousand Oaks, CA: Corwin Press.

Shepard, L. A., & Smith, M. L. (Eds.) (1989). *Flunking grades: Research and policies on retention*. Philadelphia: Falmer Press.

What are the findings from research studies on multi-age / multi-grade grouping?

To date there have been four major research syntheses on multi-age or multi-grade classroom structures. These syntheses vary greatly in the methods used to select studies, the rigor of their analysis procedures, the results obtained, and the conclusions drawn. Following is a brief summary of the results and conclusions of each of these syntheses. Also described are the results from a recent comprehensive study of the differences in instructional practices between multi-grade and single-grade classrooms:

1. Anderson, R. H., & Pavan, B. N. (1993). *Nongradedness: Helping it to happen.* Lancaster, PA: Technomic.

Method: This study replicated Pavan's 1973 review of research on non-graded (multi-grade/age) classroom and school programs. Sixty-four studies were reviewed. Thirty-four of these studies were also used in the Gutiérrez & Slavin (1992) study described below. Although different analysis techniques were used, Anderson & Pavan's findings were in 97% agreement with Gutiérrez & Slavin's. Anderson & Pavan shared only 9 studies with the Veenman (1995) study listed below, and only 56% agreement with his findings. According to Anderson & Pavan, their review uncovered the following major results:

A. Non-graded schools showed higher achievement than graded schools with fewer retentions in grade.

B. The effects of non-graded schools on achievement and student self-esteem grew stronger over time.

C. The non-graded approach is favorable to African-American students, males, and children of poverty.

Conclusion: Using a primarily descriptive approach to comparing multiple studies, the authors conclude that non-graded programs benefit all students both academically and socially. Anderson and Pavan argue that the finding about benefits to males, African-Americans, and impoverished students is most important since these groups traditionally do poorly on the standardized measures used in these studies.

2. Gutiérrez, R., & Slavin, R. E. (1992). Achievement effects of the nongraded elementary school: A best evidence synthesis. *Review of Educational Research, 62*(4), 333-376.

Method: Considered in this review were 9 single subject area studies, 14 multiple subject area studies; and 12 individualized instruction, "continuous progress" studies. Comparisons

were based on results from standardized, multiple-choice tests of basic skills. The major findings were:

A. Cross-grade grouping for a single subject yielded modest positive effects.

B. Cross-grade grouping for multiple subjects also yielded modest positive effects.

C. These positive effects stem primarily from the use of small group, direct instruction on basic skills provided by the teacher.

D. Cross-grade grouping that made extensive use of individualized instruction provided no benefits to students.

Conclusion: The effects of non-graded programs, measured with standardized, multiple-choice tests of basic skills, depend on the type of program implemented. Flexible cross-age grouping can provide opportunities for teachers to adapt instruction to students needs, but implementation must be balanced with consideration of instructional costs associated with disruption, movement, and the stigma for children assigned to low groups.

3. Veenman, S. (1995). Cognitive and noncognitive effects of multi-grade and multi-age classes: A best-evidence synthesis. *Review of Educational Research, 65*(4), 319-381.

Method: This review included 38 studies involving multi-grade (an administrative device used to cope with declining student enrollment or uneven class sizes) or multi-age classrooms (children of different ages are grouped together for educational or pedagogical benefits). Comparisons were based on results from standardized, multiple-choice tests of basic skills. The major findings were:

A. Studies of cognitive and achievement effects yielded no consistent differences.

B. Studies of noncognitive effects also produced no consistent differences.

C. Studies comparing the cognitive and achievement effects of multi-age and single-age classes showed no differences between the two types of groupings.

D. Studies comparing the noncognitive effects of multi-age and single-age classes showed inconsistent effects.

Conclusion: There is no empirical evidence, based on results from standardized, multiple-choice tests of basic skills and assessments of noncognitive factors, that student learning is enhanced or suffers in multi-grade or multi-age classrooms.

4. Mason, D. A., & Burns, R. B. (1996). "Simply no worse and simply no better" may simply be wrong: A critique of Veenman's conclusions about multi-grade classrooms. *Review of Educational Research, 66*(3), 307-322.

Method: This review reanalyzed the data from Veenman's 38 studies and 21 additional studies, with special attention given to the criteria used in selecting the studies and to interpretations of the evidence presented. Again, all comparisons were based on results from standardized, multiple-choice tests of basic skills. Major findings include:

A. Veenman's review is more objective than previous reviews (e.g., Pratt, 1986; Miller, 1990; Anderson & Pavan, 1993).

B. Two key factors are ignored in Veenman's analysis:

1) Selection bias: In an effort to reduce the burden on teachers, principals tend to place more able, more independent, and more cooperative students in multi-grade classes, and generally assign better teachers to teach those classes, thus biasing results.

2) Management problems typically result in lower quality instruction in multi-grade classes.

Conclusion: Multi-grade classes have small negative effects on achievement as well as potentially negative effects on teacher motivation.

5. Mason, D. A., & Good, T. L. (1996). Mathematics instruction in combination and single-grade classes: An exploratory investigation. ***Teachers College Record, 98*****(2), 236-265.**

Method: This study included 6 multi-grade classes; 6 single-grade classes with traditional, whole-class teaching; 12 single-grade classes with two, within-class ability groups. Its purpose was to compare instructional practices and learning activities in multi-grade and single grade classes. The major findings were:

A. Instruction, classroom organization, and curriculum content and materials of multi-grade teachers differed in significant ways from those of both traditional whole-class and within-class ability-grouped, single grade teachers.

B. Multi-grade classes included fewer instances of peer cooperation, innovative curriculum, individualized instruction, and integrated or continuous progress curriculum.

C. The curriculum in single-grade classes was more meaningfully presented, more challenging cognitively, more oriented toward conceptual understanding, and more often employing cooperative groups for collaborative problem solving.

Conclusion: Multi-grade classes, relative to single-grade classes, create important trade-offs for curriculum, instruction, and student incentives. They also require teachers to spend significantly more time on nonacademic functions (transition, management, organization, etc.).

What effect has Kentucky's Primary Program had on the number of children labeled "exceptional" in grade 4?

The multi-age / multi-grade attribute of the Primary Program purportedly offers teachers a structure that allows them to identify and remedy students' individual learning problems as early as possible. As a result, more students should develop the strong foundation in skills they will need for success in later grades. One anticipated outcome of the Primary Program, therefore, is a reduction in the number of children considered "exceptional" in grade 4. "Exceptional" children are those who are experiencing learning difficulties and are recommended for special services.

Listed in the table below are the number of children statewide, ages 9, 10, and 11, classified as "exceptional" from 1985 through 1996. These ages represent typical grade 4 students. Also shown in the table are the year-to-year differences. The last column indicates the total year-to-year difference across all three ages, statewide.

These data show that the number of grade 4 students classified as "exceptional" increased steadily in Kentucky from 1985 until 1992, when the total number decreased by 556 students. It remained at nearly this same level until 1995, when the total number increased dramatically by 1246 students statewide. In 1996, this number rose drastically again by 1325 students. The years 1995 and 1996 also correspond to the years when the first students who completed their early elementary education under the Primary Program entered grade 4.

It is uncertain whether implementation of the Primary Program is the cause of this sudden rise in the number of children classified as "exceptional" in grade 4. These data make clear, however, that Primary Program has *not* resulted in any reduction in the number of grade 4 children who need special assistance. Further investigations of this enormous increase in the number of children classified as "exceptional" are clearly needed.

Table 1.

Number of Grade 4 Children Classified as "Exceptional," 1985-1996.

Year	Age 9	Diff.	Age 10	Diff.	Age 11	Diff.	Total Difference
85	5734		5546		5023		
86	5835	101	5286	-206	5242	219	114
87	5869	34	5510	224	5035	-207	51
88	5941	82	5552	42	5199	164	288
89	6181	240	5743	191	5302	103	534
90	6030	-151	5837	94	5548	246	189
91	6149	119	5707	-130	5712	164	153
92	5716	-433	5807	100	5489	-223	-556
93	5910	194	5503	-304	5642	153	43
94	6099	189	5794	291	5269	-373	107
95	6552	453	6280	486	5576	307	1246
96	6836	284	6761	481	6136	560	1325

What conclusions can be drawn from this research on multi-age / multi-grade grouping?

The current body of research evidence on multi-age/multi-grade grouping appears to confirm what many researchers on grouping practices have known for years: ***It is not how you group students for instruction, but what you do within those groups that is important to learning***. Multi-grade classes do not guarantee high quality instruction for all students, and single grade classes do not prevent it. While some grouping practices are more conducive than others to the use of certain instructional activities, it requires preparation and professional judgment to know what strategies fit which grouping practices. The imposition of structural changes can have deleterious effects on teacher self-efficacy and confidence and thus affect student performance. Improvements in student learning are far more likely to result from efforts that help teachers provide better and higher quality instruction than from mere structural changes.

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