

# **BCTF Research Report**

Part of the BCTF Information Handbook

Section XII  
2000-EI-02

## **Split-Grade and Multi-Age Classes: A Review of the Research and a Consideration of the B.C. Context**

[www.bctf.bc.ca/ResearchReports/00EI02](http://www.bctf.bc.ca/ResearchReports/00EI02)

by Charlie Naylor  
January 2000

While there are different names and forms of multi-age classrooms, the essential concept involves combining different grade levels or age groups within one classroom. The most common form is a split grade in an elementary school which is taught by one teacher for all or most of the time. Split-grade classes usually consist of students from two sequential grades within one classroom, for example Grade 2/3 or Grade 4/5, or some other combination. Split-grade classrooms are one type of configuration within multi-age classrooms, which might include children with a range of ages, going as far as the one-room K-12 school.

There are two reasons why multi-age classes exist: one reflects a philosophy; the second relates to administrative considerations.

The philosophy that students benefit from the range and diversity possible with multi-age groupings is reflected in the work of Gaustad (1997), who argued that:

“Research indicates that heterogeneous grouping promotes cognitive and social growth, reduces anti-social behaviour, and facilitates the use of research-based developmentally appropriate instructional practices such as active learning and integrated curriculum. The wider range of ages and abilities in a multi-age classroom discourages misleading age-graded expectations and helps teachers focus on students’ individual learning needs.”

This reflects a deliberate and systematic mixing of students of different ages as desirable and as beneficial to students. Gaustad’s work was supported by the findings of Feldman and Gray (1999), who found four benefits for students in such classrooms:

© British Columbia Teachers’ Federation, 2000.

RT00-0007  
January 2000

**B.C. Teachers' Federation, 100 - 550 West 6<sup>th</sup> Avenue, Vancouver, BC V5Z 4P2  
(604) 871-2283 • 1-800-663-9163 • Fax (604) 871-2294 • [www.bctf.bc.ca](http://www.bctf.bc.ca)**



- i. Younger children actively use older children to develop skills and to acquire knowledge.
- ii. Mixed-age play offers unique opportunities for creativity and the practise of skills.
- iii. Age mixing provides opportunities for children to find others of matching abilities.
- iv. Older children actively assert responsibility for younger ones and develop an increasingly sophisticated understanding of that responsibility.

Multi-age or non-graded classrooms tend to have “*an individualized, developmental focus, manifest in continuous progress rather than lock-step, graded curriculum for a class group of students varying in age*” (Russell, Rowe and Hill, 1998). The focus identified by Gaustad and by Russell et al represents an important conceptual foundation of multi-age classrooms. It reflects an emphasis on students’ individual needs and progression, with a style of pedagogy to support such needs, rather than the whole class progression through a prescribed curriculum at the same time and pace. It could be argued that the individualized approach appears out of step with many current provincial, state, or national policies, which stress grade- and age-level curriculum and outcomes, and which prescribe required measurements of such outcomes either through standardized tests or by the use of large-scale assessments.

The second reason for the existence of what are usually defined as multi-grade classes is more mundane, far more common, and was stated by Veenman (1995) to be:

“an administrative device used to cope with declining student enrolment or uneven class size.”

In this context, classes are combined because there are simply not enough students to form a single-grade class, for either of the two reasons stated by Veenman, or because of a school’s isolation, where combining grades may be the only economically viable option. By combining grades, small rural schools can continue to exist within a community, thereby making the community more cohesive and viable.

One reason for combining classes across ages and grades is therefore philosophical, and claims benefits (usually termed multi-age), while the other is economic, done out of necessity rather than choice (usually termed multi-grade). The economic justification for combining grade levels may be one reason why concerns surface most commonly from parents of children in split-grade classes in urban schools, who often argue that their child’s optimal educational placement is compromised by economic factors.

The debate about multi-age/multi-grade classrooms focuses on two areas: benefits or harm to students’ academic and social development, and teachers’ capacity to teach effectively while managing more than one grade level. Of these two, more attention in the research has been given to the effects on students. In one of educational research’s typically polite but lively exchanges, Veenman (1995, 1996) argues that “*there is no empirical evidence for the assumption that student learning may suffer in multi-grade and multi-age classrooms.*” He is challenged by Mason and Burns (1996), who suggest that Veenman “*may simply be wrong*”. The debate articulated in these papers provides the best consideration of this issue from the available literature.

Veenman’s 1995 paper reviewed 56 studies from 12 countries, including four from Canada (one of which was a 1991 study by Milburn, conducted in B.C.). Veenman examined the findings of

these studies to compare academic/cognitive and non-cognitive effects between multi-grade/multi-age and single-grade/single-age classrooms. The cognitive focus included subject-area breakdowns, while the non-cognitive focus considered personal and social adjustment, self-concept, attitudes towards school, and motivation. For cognitive effects, the study considered:

- a. Nine matched studies (where single- and multi-grade classrooms which appeared comparable were the subject of the study).
- b. Sixteen random sample studies, in which the effects of single/multi-grade could be isolated and compared from a larger body of data.
- c. Thirteen studies where single/multi-grade classes were compared but with no evidence of compatibility in areas such as student academic levels.

For non-cognitive effects, seventeen studies were reviewed.

In reporting his findings, Veenman separates 45 multi-grade classes (administrative device to cope with uneven class size/falling enrolment) and 11 multi-age classes (deliberate grouping of children of different ages for educational reasons). Of the 45 multi-grade classes, no consistent differences in achievement were found with respect to reading, mathematics, language, or composite scores. Of the studies looking at overall achievement, 28 of 38 found no overall effects. In four studies, significant and positive effects were found favouring multi-age classes, and six studies favoured single-grade classes.

Of the eleven studies looking at multi-age classes, no significant differences in areas of cognitive achievement were found in nine. In the non-cognitive areas, the multi-age classes generally scored higher but the differences were not significant.

Of the seventeen studies reviewed for non-cognitive effects, five of these reported significant non-cognitive differences in favour of multi-grade classes, but these did not translate into higher achievement, and in general there were no significant differences between single- and multi-grade classes.

Veenman identifies four factors which he believes are the reasons for minimal differences in learning between single- and multi-grade classes:

- a. Grouping alone is unlikely to influence outcomes, as organizational factors are less important than instructional practices.
- b. Conscious criteria may be used in selecting students, so that students who can work independently and have fewer behavioural difficulties may be selected.
- c. Teachers receive no additional training for multi-grade teaching, and may be negative about teaching multi-grade classes. (This implies that with such training, students in multi-grade classes would perform better than those in single-grade classes, and has been interpreted by Mason and Burns to infer bias in favour of multi-grade arrangements.)
- d. If teaching multi-grade classes involves more preparation time and a greater workload for teachers, teachers use most of their energy ensuring their students achieve at a level they would manage in a single-grade class.

Veenman also reported findings linked to:

- optimal class size, with 20-25 reported as preferable for multi-grade classes, and with one study (Gayfer, 1991) reporting significantly higher achievement scores for Grade 6 students in single-grade classes larger than 26 students when compared to similarly-sized multi-grade classes.
- optimal combinations of grade levels, with considerable uncertainty about which combinations work best, as there exists minimal research into this area.
- reported positive student achievement effects from combining grades within one subject area, usually reading (Gutierrez and Slavin, 1992).
- six key variables identified by Miller (1989, 1991) for successful multi-grade teaching: classroom organization; classroom management and discipline; instructional organization and curriculum; instructional delivery and grouping; self-directed learning; peer tutoring.

The Mason and Burns (1996) paper argues that while multi-grade classes are good for some students, they are “potentially onerous” for most, and increase teacher stress. While they do not dispute Veenman’s findings that there are no significant differences in achievement between students in single- and multi-grade classrooms, they challenge both the interpretation and explanation of his findings. Multi-age classrooms, they argue, are selectively formed and offer lower quality instruction than single-grade classes. Selection is likely to increase student achievement, while lower quality instruction is likely to reduce it. They argue that the two cancel each other out, thereby causing no achievement differences. In contrast, they state that Veenman claims no selection bias and no difference in the quality of instruction, leading to no achievement differences.

Mason and Burns find evidence in the literature that:

“Principals, in an effort to reduce the burden on multi-grade teachers, place more able, more independent, and more co-operative students in multi-grade classes.”

They argue that by selectively placing such students in multi-grade classrooms, a negative effect on achievement is likely in any single-grade classrooms in the same school, as these classes must necessarily contain comparatively less able, less independent, and less co-operative students. If same-school single-grade students’ achievement scores were compared with the multi-grade classes in that school in a research project, the findings of the research would therefore reflect this. Mason and Burns believe that comparisons could be best made (but rarely are) between two sets of students who are randomly placed in both single- and multi-grade classrooms, rather than randomly selecting from students who are selectively placed (as they claim is more common in the research).

The claim of selection was challenged by Veenman (1996) in a paper responding to Mason and Burns, in which he stated that selection of the nature indicated by Mason and Burns was only found in four of fifty-one studies.

The second key argument made by Mason and Burns focuses on the quality of instruction, which they claim is lower in multi-grade classrooms. Their case is not that teachers in such classes are

inferior<sup>1</sup>, but that the demanding nature of multi-grade teaching reduces the quality of instruction. They identify two areas in which demands are greater: increased workload (more preparation/grouped instruction/teaching time) and more complex class organization (less instructional time, less individual attention, and greater management demands). They claim that:

“teachers are therefore faced with delivering two different curricula to students of twice the age range in the same amount of time – factors which make these two structures drastically different.... The two curricula that are part and parcel of these classes require more preparation, more grouped instruction, and more teaching time on the part of the teachers.... Teacher stress is exacerbated, and curriculum coverage and adaptive assistance are diminished, with negative outcomes.”

Veenman acknowledges the increased stress on teachers in multi-grade classrooms in his 1996 response, where he shared findings from interviews with teachers in Holland:

“Interview data showed the teachers in the multi-grade classes to be less satisfied with their jobs than their counterparts in single-age classes as a result of the heavy teaching load and demands for classroom management.”

Mason and Burns argue that the data concerning teacher satisfaction indicate that extra supports appear necessary to effectively manage multi-grade classrooms:

“... teachers will require considerable support and will need to expend considerable effort to reap rewards from these classrooms. Lacking such support, most teachers find multi-grade classes to be difficult classroom environments to manage, and they cope with the two grade levels and curricula as best they can.”

Both sides of this debate have something to offer, though Veenman’s evidence is more substantial, with a very wide-ranging international review of the literature on this issue. His views are supported by research completed after his review, in particular the work of Trusty and Beckenstein (1996) and Gorrell (1998). And both Veenman and Mason and Burns essentially agree that there are no significant differences in students’ academic achievement between single- and multi-grade classes. They also agree that the teaching load is heavier in multi-grade classes, causing reduced satisfaction and increased stress for teachers.

A report by Gomulchuk and Piland (1995) found that rural elementary teachers in northern British Columbia were more positive in their attitudes towards multi-age classrooms than were urban teachers. This result perhaps links more to the sustaining of community in such areas than to the pedagogical and organizational issues discussed by most of the researchers on this subject.

The Australian study by Russell, Rowe, and Hill (1998) provides evidence of significant and negative differences in terms of student achievement caused by the single variable of students being in multi-grade classrooms. They found some significant negative effects on achievement associated with multi-grade classes, and some non-significant effects. However, different results were found in two different years of data collection, and between literacy and numeracy, the dual

---

<sup>1</sup> Mason and Burns include what they admit to be “sketchy” evidence that more skilled and experienced teachers may also be assigned to multi-grade classrooms, though there is support from other studies (Russell et al, 1998) which supports this claim.

focuses of the study. In one year, the data collected for student progress in literacy “*revealed, among other things, a strong, direct negative effect of being in a multi-grade class.*” The following year’s data again showed negative effects, but these were not significant. Differences in mathematics showed negative effects for multi-grade classrooms, but these were not statistically significant.

In the qualitative research conducted by Russell et al, nine contextual factors were identified by teachers and administrators. These factors were “seen to have the power to exacerbate or moderate the level of difficulty” in multi-grade classrooms, and were:

- the choice of teacher, teacher ability, teacher skill in organization and planning
- class size
- balance in size of year-level sub-groups
- number of children with challenging behavioural problems
- range of student abilities, achievement, and styles of learning, especially independence
- arrangements for students to mix with their year-level peers in other classes for activities such as sports and excursions
- organization of a two-year curriculum, so that students do not miss out on curriculum coverage
- time taken to deal with additional parent pressure
- additional time and pressure from the demands of ongoing school-level changes.

Successful learning for students depends on a range of pedagogical and organizational factors within different classroom, school, and community contexts, all of which exist within the wider context of district or provincial policies. The promotion or consideration of any single variable or program should always be made with local factors and contexts in mind. A useful caution was provided by Veenman:

“The purpose of my review was not to encourage policy makers and practitioners to adopt the multi-graded form of classroom organization more frequently. Policymakers and practitioners should always proceed with caution in the application of research findings, and should not base policy decisions on research findings alone.”

The issue of context was also addressed by Russell et al, whose findings included varying perceptions of educators in different countries because of the educational or social contexts. Differences in emphasis on the use and importance of formal testing, for instance, could lead to radically different educator perceptions of the desirability and manageability of multi-grade classrooms. If such testing is linked to accountability, educators are less likely to be receptive to multi-grade classes. Whether one works or lives in a small rural community or in a metropolitan area appears to be an important contextual factor, with the former reflecting far more positive views of multi-grade classrooms from both teachers and parents.

Significant gaps in our understanding of the B.C. context exist, and there appears to be a minimal consideration of trends, prevalence, and potential problems linked to this issue. We do not know if there have been increases or decreases in the numbers of multi-grade classrooms in B.C., as no data are collected at the provincial level. If they are collected at the district level, they are not widely shared. With the provincial collective agreement, and in particular the K-3 class-size language, there may be increases in the numbers of multi-grade classrooms as districts juggle

class composition to meet the contract requirements. On the other hand, with new curriculum and changed provincial policies, there may have been a reduction in the number of those multi-age classes which were developed to reflect a philosophical approach supporting individualized, self-paced learning. Examples of such classes could be found in the immediate post-Sullivan era, reflecting an approach which has been rejected by the provincial government for most grade levels.

With substantial numbers of teachers retiring in the next ten years, will the pool of skilled and experienced teachers be adequate to effectively teach multi-grade classes? What forms of pre-service and in-service training and support may be appropriate to develop or extend the skills which are necessary to effectively teach in such classes? Are assessment or reporting issues problematic in, say, a Grade 3-4 split, where different requirements may exist for the two grades? Are there substantial numbers of relatively new, but not necessarily inexperienced, teachers with, say, five years' teaching experience, who have predominantly taught at one grade level without the experience of teaching students in other grades or in a classroom with combined grades? These represent but some of the questions that might be addressed in the B.C. context.

With the "economic necessity" case for multi-grade arrangements, one might expect to see more of them as districts seek to make economies wherever possible. If multi-grade classes are becoming more prevalent, and if the justification stems from economic or collective-agreement considerations, how do we meet the learning needs of students, and support the professional capacity of teachers? As the political winds changed to reduce support for the philosophy of multi-age classes, has an economic wind shifted schools and districts back towards a more mundane version of them, but with minimal consideration of how students learn, and how teachers teach in such classrooms?

Charlie Naylor,  
BCTF Research

## REFERENCES

- Feldman, J., Gray, P. (1999). "Some Educational Benefits of Freely Chosen Age Mixing Among Children and Adolescents." *Phi Delta Kappan*. Vol. 80, No. 7, 507-512.
- Gayfer, M. (Ed.) (1991). "The Multi-Age Classroom: Myth and Reality. A Canadian Study." Toronto, Ontario: Canadian Education Association.
- Gaustad, J. (1997). "Building Support for Multiage Education." ERIC Digest #114, July.
- Gomulchuk, S.L., Piland, W.E. (1995). "Teacher Attitudes Towards Multi-Age Classes." *Education Canada*, 35, 4, 28-32.
- Gorrell, J.L. (1998). *A Study Comparing the Effects of Multiage Education Practices versus Traditional Education Practices on Academic Achievement*. Master's Thesis, Salem-Teikyo University. ED 424008.
- Gutierrez, R., Slavin, R.E. (1992). "Achievement Effects Of The Non-Graded Elementary School: A Best Evidence Synthesis." *Review of Educational Research*, 62, 333-376.
- Mason, D.A., Burns, R.B. (1996). "'Simply No Worse and No Better' May Simply Be Wrong: A Critique of Veenman's Conclusions About Multi-Grade Classes." *Review of Educational Research*, 66 (3), 307-322.
- Miller, B.A. (1989). *The Multi-Grade Classroom: A Resource Handbook for Small, Rural Schools*. Portland, Oregon: Northwest Regional Educational Laboratory.
- Miller, B.A. (1991). "A Review of the Qualitative Research on Multi-Grade Instruction." *Journal of Research in Rural Education*, 7 (2), 3-12.
- Russell, V.J., Rowe, K.J., Hill, P.W. (1998). "Effects of Multi-Grade Classes on Student Progress in Literacy and Numeracy: Quantitative Evidence and Perceptions of Teachers and School Leaders." Melbourne, Australia: University of Melbourne.
- Trusty, E.M., Beckenstein, S. (1996). *A Comparative Study of Single-Graded versus Multi-Graded Classrooms*. Virginia, USA: ED417014.
- Veenman, S. (1995). "Cognitive and Non-Cognitive Effect of Multi-Grade and Multi-Age Classes: A Best-Evidence Synthesis." *Review of Educational Research*, 65 (4), 319-381.
- Veenman, S. (1996). "Effects of Multi-Grade and Multi-Age Classes Reconsidered." *Review of Educational Research*, 66 (3), 323-340.