

Challenges in Implementing Curriculum and Assessing
Student Learning in Multiage Classrooms

Matthew David Kemmis

Concordia University - Portland



A Thesis Presented to

The Graduate Program in Partial Fulfillment of the
Requirements

For the Degree of Master of Education in Administration

Concordia University-Portland

2011

Abstract

Educators are constantly looking for ways to increase student achievement and make their schools and districts more successful. While some of the changes that are implemented into schools are effective, many fail to make the desired improvements necessary for success. One change that many researchers are revisiting is the concept of the multiage classroom. This report reviews the studies that have been done and summarizes the research that has been published on the topic of multiage classrooms, specifically focusing on successful implementation, organization of curriculum and instruction and an evaluation of the cognitive and social effects on students. While there is a wealth of information on the topic of multiage educational models, a majority of the research is qualitative in nature and is based primarily on surveys and observations of those educators presently in multiage classrooms. The quantitative data that is available deals primarily with cognitive effects and the results do not lend themselves to a definitive conclusion supporting or opposing the multiage model. This research concludes that a multiage educational model can be a successful alternative to the traditional graded system, but specific consideration and attention to detail are vital for a successful program. The true benefit to the multiage model is in the social effects it can have on all students, specifically at-risk and minority population children. Cognitively, multiage classrooms simply are no better or worse than a graded classroom, they are merely an alternative that could potentially lead some students to success.

Challenges in Implementing Curriculum and Assessing

Student Learning in Multiage Classrooms

The current state of the American educational system has come under increased scrutiny as budget cuts continue to deplete schools of the resources they need, schools fail to make adequate yearly progress, and students continue to drop out across the nation. The media often reports about the direction public schools are headed, about low-test scores, and disparities in education. While many solutions keep coming forward to fix the problems, some of them are even more alarming than the problems themselves.

Clearly, some aspects of the present educational system need improvement, yet the recurring cycle of how it is approached remains the same. Take, for example, the most frequently occurring classroom method: One teacher in charge of a classroom of 30-40 students, with the task of ensuring that they all learn the same thing, at the same time with the same level of proficiency. While this is often a budget-friendly approach to education, it is absolutely at odds with everything that is known about how people learn and how the brain retains information (Hallion, 1994). The philosophy of how students are educated does not need to be revolutionized with new and innovative ideas. In the author's opinion, educators would benefit from pulling back a little bit and re-examining what is already known about the individual learner.

The purpose of education is to create individuals in our society who contribute thoughts, ideas, and innovations. Schools intend to prepare children for the world and equip them with the skills necessary to succeed and lead meaningful lives. These are the

ideas of our earliest educational philosophers (Hallion, 1994), whose ideas should be reflected upon and consulted when thinking of how to improve our schools.

One type of educational system that could potentially address some of the problems, as well as the needs of the individual learner, is the concept of the multiage classroom. A classroom where students are not bound by the restraints of “staying with the group,” where student centered learning is the norm.

The concept of the multiage classroom is not a new idea or a revolutionary shift in today’s educational system. In fact, the multiage classroom is one of the earliest forms of formal education and has “been an option of educational practice in the United States since the introduction of graded education in the 19th century” (Kinsey, 2001, p. 1). Before graded classrooms became the norm – the first being Boston’s Quincy Grammar School in 1848 (Hallion, 1994) – students of all ages were taught in one room with many grade levels being represented.

A true multiage classroom consists of intentionally grouping children from different ages forming one class, which spans a minimum of two grade levels, instruction and curriculum are integrated and cross-grade teaching is the norm (Lloyd, 1999). This type of learning environment requires a specific skill set from the teacher as the implementation and assessment of such programs is different than in a traditional classroom.

The ability to properly implement and teach in a multiage setting requires much planning and preparation. According to Joan Gaustad (1996) teachers need to have the knowledge and the skills to properly facilitate this kind of environment; this knowledge base can only come from training, time, and support if the teacher is to master this

complex setting. The training is not covered in traditional educational degree programs, but is often done inadequately during in-service settings or over a multi-day training session. “Most pre-service and in-service teacher training systems prepare teachers to teach in mono-graded schools” (Little, 2004, p. 2). As the classroom dynamic and student needs are different in a multiage classroom, one can postulate that the training required for such a situation is insufficient and could benefit from more research and training before being implemented into a school setting. The research of The Regional Laboratory for Education Improvement of the Northeast & Islands (1994) suggests that proper implementation and full preparation for a multiage classroom requires a two-year process, and an additional two to three years in order to become fully operational.

The assessment of a multiage classroom can also be a difficult task in the age of grade level standards and adequate yearly progress benchmarks. How can an institution adequately gauge the scope of student learning when success is measured in a way that dictates that all students learn the same way and at the same rate? The role of the multiage classroom, according to Song, Spradlin, and Plucker (2009), has declined recently as a result of No Child Left Behind, where grade level standards and testing have made multiage classrooms a difficult paradigm in schools. The function of the multiage classroom has been relegated in many cases to an alternative learning environment for students who have not found success in a traditional classroom.

Research shows that students in multiage classrooms have “more positive attitudes toward school, themselves and their peers. Many teachers report that there are fewer classroom management problems . . . and that multiage classrooms appear to be especially beneficial for children who need more time and/or ways of learning” (The

Regional Laboratory for Education Improvement of the Northeast & Islands, 1994, p. 7).

Additionally, studies of the cognitive effects of a multiage classroom have shown a positive effect in reading and mathematical achievement (Mobley, 1976).

To properly determine the relevance of multiage classrooms in today's educational system, as well as correct implementation and assessment strategies, one must look at the research and various examples where the multiage classroom configuration has succeeded and failed and ascertain why. One must also determine to what degree the multiage classroom affects cognitive and social growth as a means to improve student learning, as well as to identify what student population, if any, would benefit the most from the multiage model. Perhaps a multiage approach would engage the students who continuously slip through the cracks of the system or be a successful strategy in working to close the achievement gap and find success with the at-risk student population. By addressing the individual needs of the students who are most likely to fail, educators would simultaneously raise whole school test scores, reduce the number of student dropouts, and create a more positive school environment.



Chapter Two

Development of the Issue in Published Literature

Examination of the multiage learning model will provide insight into the cognitive and social advantages and disadvantages of this type of classroom configuration. An in-depth analysis of proper implementation, instructional strategies, assessment and historical perspectives of multiage classrooms will provide a complete picture of its value on today's educational system as a means to determine the multiage classroom's place in schools.

The definition of the multiage classroom is a concept that can be easily misunderstood and therefore can carry a negative connotation. A multiage classroom is more than simply having different age groups under the same classroom roof. A multiage classroom is created when students are *intentionally* grouped in a situation where there are various age and grade levels represented, spanning a minimum of two grade levels (Lauer, 2000). These groupings are an effort to provide the students with both social and academic benefits in an attempt to further their cognitive and emotional growth. Anne Bingham's (2000) publication on multiage classrooms further enhances the definition of a multiage environment by stating:

A multiage classroom is not two grades put together for convenience, nor is it a "combined" class in which separate curricula continue. A multiage class is a permanent class grouping of planned developmental diversity where that diversity is celebrated, valued as part of a natural community of learners, and is harnessed in subtle ways to support learning. (p. 1)

A configured system like this gives the students the opportunity to spend a minimum of two years with one given teacher or group of teachers. One could conclude that this exposure to the same instructor allows the student to remain comfortable when they return to school the following year, as they will know what to expect from their previous experience.

Common misconceptions about multiage teaching occur because of the terminology that is used to describe different teaching strategies. Confusion often takes place when people speak about such practices as looping, split-grade classrooms and non-graded classrooms. This misunderstanding of multiage classrooms has tainted some people's perception about what it really is.

Looping "is the practice of advancing a teacher from one grade level to the next along with his or her class" (Gaustad, 1998, p. 1). The teacher would stay with the same group for the two or three year cycle and then start over again. While looping has its benefits, it is important to see the difference between this strategy and a multiage classroom. The difference being the students' age and grade levels is homogeneous in a looping situation and heterogeneous in a multiage setting.

Split-grade and non-graded classrooms are similar to multiage classrooms but differ in viewpoint. Simon Veenman (1995) points out: "Multi-grade classes are formed out of necessity; multiage classes are formed deliberately for their perceived educational benefits" (p. 319). Multi-grade classrooms typically occur in smaller, rural communities that may not have the economic resources to afford more teachers or have a small student population. These classrooms have difficulty finding success because the teachers are treating the group as more than one separate educational unit.

The history of the multiage classroom goes all the way back to the beginning of traditional educational systems. Two hundred years ago, “families were larger, and infant mortality and a high fertility rate resulted in a wide variance in sibling age. Schools and classrooms contained considerable age diversity” (Pratt, 1986, p. 112). These factors forced schools to educate multiple age levels at the same time. The sheer fact that small rural communities had one or two teachers also created the need for the multiage classroom.

“In 1918, there were 196,037 one-room school houses, representing 70.8% of all public schools in the United States” (Miller, 1991, p. 1). While the number of schools has dramatically increased since this time, the number of multiage classrooms has all but disappeared. Yet students and teachers alike continue with many of the same struggles as in the early 1900’s, one being the language barrier. Then, and now, classrooms are filled with students who speak one language at home and another in school (Carter, 2005). The student brain and classroom demographic has not changed, but how students are educated has drastically been altered.

The cultural shift that changed the educational system from multiage classrooms to grouping by grade took place in the mid 1800’s when the Secretary of the Massachusetts Board of Education, Horace Mann, took a trip to Prussia to observe their graded system of education (Anderson, 1993). Mann was impressed by the system of separating students by age levels and this concept fit with the times in American history where our population was rapidly expanding. “The graded structure seemed to be a good way to educate the many immigrants pouring into the country at the time” (Hallion, 1994, p. 2). Mann observed that the graded system promoted nationalism and operated

efficiently as well as being very well organized. The country was also beginning the Industrial Revolution and the idea of mass production and the factory model worked its way into the classrooms. By separating students based on age the teachers would be able to specialize on specific areas of the curriculum and have a consistent set of benchmarks for each grade level. This new system streamlined education and made content delivery far more efficient for the teacher than the previous one-room schoolhouse model.

The shift to graded education also opened up a whole new industry of the graded textbook (Anderson, 1993). The first textbooks appeared in 1836 and were graded through six levels, these led to textbooks covering all subjects. Eventually these textbooks turned into the curriculum. “Teachers and parents alike came to equate adequacy of pupil performance with the ability to use the book designed for their child’s grade level” (Hallion, 1994, p. 3).

The change to graded classrooms did have many opponents. The (1996) research of Osin and Lesgold states:

In 1890 C. W. Eliot, the president of Harvard University, claimed that the ‘grouping together of children whose capacities are widely different’ was not only ‘flying in the face of nature’ but also the ‘worst feature of the American school.’

(p. 622)

Eliot was referring to the graded classroom that houses students solely based upon age.

John Dewey, “the father of progressive education,” believed that graded schools had become too “machine-like” (Hallion, 1994, p. 4). Other notable thinkers and philosophers restated both assertions from Eliot and Dewey at the turn of the century and

well into the following one. Included in the list of those opposed to the graded system, according to Andrea Hallion (1994), are:

- Frederick Froebel (1887) - The “father of Kindergarten” who urged a greater freedom to investigate and experiment.
- John Locke (1892) – Who first emphasized the value of curiosity and spontaneous play.
- J.H. Pestalozzi (1894) – Who argued for greater use of all the senses.
- Jean Rousseau (1894) – Whose work gave a new dignity and respect for childhood and the very nature of the child.
- Maria Montessori (1911) – Whose entire early work was based on her conviction that the freedom to explore led naturally to purposeful learning on the child’s own terms and that strength of personality and sense of competence were the only essentials in the early years.
- Dr. Benjamin Spock (1946) – Who urged schools to allow the child to learn in his own way and time.
- Anna Freud (1964) – Who contributed significant insight into the beneficial effects of grouping children in wider rather than more narrow, homogenous age groups.
- John Holt (1964) – Who attacked the status quo with the precept that where learning is piecemeal and lacking in continuity, failure and loss of self-esteem is often the result. (p. 5)

Although there was influential opposition to the graded education system, it still became more prevalent due to increasing populations and cultural migration toward the

cities where there was more opportunity to work. Modern day critics of the traditional educational system are quick to point out that the graded structure is used now out of tradition and convenience for the school districts. Many feel as though the needs of the student are second to the needs of the district to run their schools as an efficient business (Hallion, 1994).

Since the inception of The Quincy Grammar School, over 170 years ago, opponents and supporters of the graded educational structure continue to debate. While the arguments may remain similar, the times certainly have changed; the study of the problem has evolved as society moves forward. Andrea Hallion's (1994) research points to one major force that has drastically shifted the argument for the multiage classroom. Hallion points to the "Age of Information" (p.6) and the ability for information to be transferred at blinding speeds. She makes the argument that "Teachers can't possibly teach students all the factual knowledge that they will need to know in their lives. In the early 1800's...it was possible for a teacher to teach all of the knowledge necessary for the student to learn" (p.7).

Although Hallion's (1994) research does point out the modern day difficulties for the classroom teacher, she does not differentiate how this challenge is met in a multiage classroom as opposed to a graded classroom. Her discussion of the technological advancements is merely a put down of public education's "lockstep curriculum and competitive-comparative pupil evaluation system" (p.6), and not a sufficient critical analysis of the multiage model.

Despite the fact that the world is much different than it was a century and a half ago, the influential research of Joan Gaustad (1996) and Simon Veenman (1995) ask the

same questions and point to the same student benefits as the early critics of the graded classroom. The support for multiage classrooms, then and now, has focused on “the use of developmentally appropriate practices, yielding significant cognitive, social, and emotional benefits for students. Cooperative behavior, respect for individual differences, and a family-like sense of community are more easily achieved in multiage than single-age classrooms” (Gaustad, 1996, p. 2). These benefits echo the words of early critics such as John Dewey and Maria Montessori in the early 1900’s, as well as Anna Freud and John Holt in the mid 1960’s.

Simon Veenman’s (1995) research also points to the same benefits as the early advocates for multiage education. Veenman compiled a list of eleven cognitive and non-cognitive benefits:

- Students have a chance to form relationships with a wider variety of children than is possible in the traditional same-age classroom. This leads to a greater sense of belonging, support, security, and confidence.
- Teaching a diverse group of students demands individualized instruction.
- The development of a balanced personality is promoted by fostering the attitudes and qualities that enable students to live in a complex and changing social environment.
- The self-concepts of slower, older students are enhanced when they are asked to tutor younger students in class.
- More secure teacher-student relationships may be established as the student remains with the same teacher for two or more years.
- Fewer anxieties may develop because the educational atmosphere is

conducive not only to academic progress but also to social growth.

- Multiage grouping provides younger students with the opportunity to observe, emulate, and imitate a wide range of behaviors; older students have the opportunity to assume responsibility for less mature and less knowledgeable students.
- Multi-age grouping invites cooperation and other forms of pro-social behavior and thus appears to minimize competitive pressures and the need for discipline.
- Students in the lower grades can enrich their learning by attending to the material designed for the higher grades, while students in the higher grades can profit from opportunities to review the material designed for lower grades.
- Current concepts of cognitive development (e.g., the zone of proximal development and cognitive conflict) imply that children whose knowledge or abilities are similar but not identical can stimulate each other's thinking and cognitive growth.
- Finally, the multi-age grouping relaxes the rigid curriculum with its age-graded expectations, which are inappropriate for a large number of students (p. 322).

These fundamental benefits are certainly not a function of modern day society and address the same key points as when the graded classroom versus multiage classroom debate first began. In fact, there is nothing in Veenman's list that even remotely suggests that the study of the problem has changed over the course of time.

One can conclude by looking at the work of Andrea Hallion, Joan Gaustad, Simon Veenman and the historical outlooks provided by Bruce Miller, Robert Anderson, Paula Carter, Luis Osin and Alan Lesgold, that the scope of the multiage classroom debate has not fundamentally changed since the introduction of the graded system by Horace Mann in the mid 1800's. One may deduce that the reason the sentiments of the early scholars match so closely to those of the modern day researcher is due to the essential similarities in the experience of the learner. Students' success or failure in the classroom is affected by how the information is presented, and their ability to retain this information will determine their level of competency.

While scholars, educators and the public at large could debate the necessity of the multiage model forever, as they have been for the past 150 years, the educational community chooses to look to the data. There have been many comprehensive studies completed on the topic. The following research will focus on the last 25 years of data collection, direct and in-direct observation and compile the information and opinions presented by those who are the authorities in this field of study. By looking at the research, one can make reasonable recommendations as to the implementation of a multiage classroom, curriculum and instructional organization, and the cognitive and social impact this classroom may have on the students whom they serve.

Chapter Three

Review of Literature

The focus of this research is to take a close look at the multiage classroom and its place within the American school system. By looking at how a multiage classroom is organized in regard to implementation of curriculum and instruction, as well as the cognitive and social benefits of this alternative-learning configuration, one can evaluate whether or not these settings are a realistic and beneficial substitute to the typical graded classroom design.

There is an increasing worry in the United States that schools cannot reach the educational levels of other developed countries in the world. As this concern continues to increase educators have been trying to find the strategies that are the most effective and will lead to higher levels of student achievement (Smith, 1993). In looking for these new approaches some researchers have re-examined the concept of the multiage classroom, defined by Gaustad (1992), as the practice of teaching children of different ages and ability levels together, without dividing them into groups labeled by grade designators.

There have been many studies conducted on the topic of multiage education and a majority of the reports and implementation recommendations are based on the work of a select few researchers. These same researchers appear in almost all educational publications about the topic, and their work is valued and referenced by the educational community as they provide considerable empirical evidence to support their arguments.

The research of Bruce Miller (1994) has substantial weight in the educational community with his implementation handbook titled "Children at the Center,

Implementing the Multiage Classroom.” Miller’s research is a compilation of data that was collected through visits with four schools with excellent reputations for their work with multiage education, interviews with parents, teachers and administrators, document analysis as well as a variety of surveys given to those involved with implementing the program and participants in a national multiage conference on instruction. Due to the quantitative nature of his surveys, “data was analyzed with an eye toward counting frequency with which topics were mentioned” (p. 125).

Simon Veenman’s (1995) work is another of the often-referenced studies conducted on the topic of multiage education. Veenman’s work synthesized the research of 38 other studies into cognitive and non-cognitive effects on the elementary school level. His data inclusion criteria consisted of “only studies involving explicit comparison of multigrade and multiage classes with a single-grade and single-age classes” (p. 326). In addition his study met a number of methodological criteria including experimental and control groups, standard measures of academic achievement, comparability samples, duration of multiage grouping, normality of students sampled, same level of teacher training and equal numbers of experimental and control teachers.

The work of Mason and Burns (1996) is a counterpoint to Simon Veenman’s publication. Mason and Burns reviewed all the same studies as Veenman and came to a different conclusion based on the contention he overlooked “selection bias, novelty effects, additional training, and other such factors” (p. 309). Researchers looking for data and evidence regarding the multiage model are best served reviewing the work of Veenman and Mason and Burns, which will be analyzed later in this study, and forming their own conclusions.

Patricia Lauer's (2000) research was submitted to the Office of Educational Research and Improvement. Her study consisted of observing 37 multiage classrooms and a variety of interviews with district administrators and principals. Lauer also collected data from comparison schools in neighboring districts to form the basis of her conclusions. The purpose of her report was to:

- 1) Summarize the research literature on multiage classrooms;
- 2) to describe a study of a low performing school district which adopted multiage classrooms as its primary reform strategy;
- 3) discuss the implications of the findings for implementing multiage programs, and
- 4) to inform educators and researchers about nongradedness [sic] as a reform strategy. (p. V)

The above researchers and studies have been mentioned in advance as much of the educational community and publications on the topic of multiage education stem from these sources. The following research is a synthesis of these studies, and others, and will (a) provide an overview of difficulties in implementation, (b) examine ways in which the curriculum and instruction is organized, (c) evaluate the cognitive effects, and (d) assess the social implications of such mixed-age groupings.

Implementation Difficulties

The implementation of a multiage classroom is not a quick or easy process. The findings of The Regional Laboratory for Educational Improvement of the Northeast and Islands (1994) state that "it takes at least one or two years 'to get ready,' which includes training, reading, visits to other schools, and meetings. It will then take another two to three years for the multiage classroom to become fully operational" (p.12). Most teacher training programs are designed to prepare the individual for a traditional classroom. This

training is not adequate for the multiage model. Teachers require a wider range of instructional strategies than what they are typically trained to do. The Regional Laboratory for Educational Improvement of the Northeast and Islands (1994) study analyzed 36 schools that presently have multiage programs in New England and New York. Their qualitative research is a compilation of interviews with staff and observations within the schools themselves. By collecting data from the people who work in these multiage schools they can reliably say that a majority feel as though they were unprepared for the setting due to their pre-service training and that to properly implement a multiage classroom the individuals involved would need a minimum of three years to prepare.

The research of Joan Gaustad (1995) also points out the need for a wider range of instructional strategies where the teacher is able to facilitate positive group interactions, design different types of student learning groups, collaborate in different ways with colleagues, and “to know many different developmentally appropriate practices such as cooperative learning and thematic teaching” (p. 5). A majority of teacher training programs do not focus on all of these skills and many teachers are put into multiage situations without the preparation necessary to be successful.

Patricia Lauer’s (2000) research on implementation of multiage classrooms reported the results of an interview survey conducted by Bryant and Olstead (1995) to provide perspectives of teachers who had implemented multiage programs. The results of the survey are summarized as follows:

- Teachers need to prepare for the change, but it should be eased into without changing everything at once.

- Multiage grouping is not an end in itself but rather a total instructional approach with the goal of meeting students' individual learning needs.
- Multiage grouping requires much teacher time and effort accompanied by administrative support.
- Team teaching is essential, and it requires much work and time to be effective.
- Not everything is new: many previously mastered instructional strategies are effective in multiage classrooms. (p. 11)

The teachers in this survey also suggested taking at least two years to plan for the transition from single grade to multi-grade classroom configurations.

Lauer's (2000) research goes on to summarize the survey results of 98 teachers who work in a multiage setting. One section of her survey was specifically designed to filter out aspects of implementation problems related to staff development. Lauer's study highlights some of the main concerns regarding teacher preparedness and reports in her findings that the strongest areas of need are in "adapting curriculum in multiage classrooms (58%), writing instruction (52%), student motivation techniques (55%), computer skills training (54%), technology in the classroom (51%) and reading instruction (49%)" (p. 26).

When these same 98 teachers were asked for suggestions on how to improve instruction and student learning Lauer (2000) reports the following:

More staff training and development for multiage instruction (28%); more materials including instruction for the use of textbooks (19%); restructuring the multiage approach so that kindergarten is a single grade and there are two (not three) grades in a multiage classroom (15%); more preparation and planning time

(12%); more attention to special education/pullout staffing (9%); and, teacher choice about multiage and/or looping (8%). (p. 26)

The results of Lauer's survey show that the teachers who are in the multiage setting do not feel adequately prepared for such a situation. Although the collected opinions of the teachers do point to a need for a more adequate training program it should be mentioned that many teachers are not open to the shift in the educational configuration and it is often forced upon them by administrators or from the district. "According to the administrators, a major barrier to the multiage approach was the lack of effort on the part of many teachers to change instructional practices" (Lauer, 2000, p. 20). Many of the administrators that Lauer spoke with reported a lack of training and the abrupt manner that was used to mandate the multiage approach.

Lauer's (2000) research took place on an American Indian reservation in the Midwest where 99% of the students are Native American from low-income families. Three quarters of the 1,100 students in the district were eligible for free/reduced lunch benefits. The information that was collected came from 37 classrooms and interviews with principals and district administrators. At the time of the research study, the district was in their third year of a multiage restructuring strategy that was mandated from the superintendent. One can presume that this abrupt change left many of the staff feeling unprepared, which would account for the survey findings reporting additional training needs as well as materials. Lauer's descriptive study does allow for a sufficient comparison between the two classroom methods, although it should be noted that the teachers were not randomly allocated to classroom type.

The need for teacher buy-in to such a dramatic shift in the educational programs in

their schools deserves consideration. The Educational Policy Brief, presented to the Center for Evaluation and Educational Policy, by Song, Spradlin and Plucker (2009) also reports that many teachers have no preparation for teaching students of different ages in the same setting. This lack of preparedness makes teachers “doubt their abilities to assign the groups, carry out the materials, and efficiently create group work among student of different abilities and ages” (p. 5). One can conclude that these feelings of inadequacy may make teachers less supportive of the multiage setting. Song, Spradlin and Plucker (2009) go on to say that teachers who oppose the change from graded classrooms to multiage can “undermine well-meaning classroom teachers” (p. 3) which will create a fragmented staff and ultimately lead to an unsuccessful program.

Another obstacle in the implementation of the multiage classroom is the need for schools to be accountable to their state’s guidelines as well as the federal requirements imposed by the No Child Left Behind Act. NCLB holds schools responsible for learning benchmarks at specific grade levels; this is clearly a difficult task for the multiage classroom as the students may not be at the level the state requires them to be when test time comes around. “In recent years, some schools have discontinued their multiage programs due to state level testing” (Song et al., 2009, p. 1). The required learning outcomes of a traditional classroom make meeting the state and federal standards a far easier task than in mixed age classes, as they are designed to follow a single grade, standards based format. This hurdle has reduced the number of programs nationally as many administrators are pressured to keep the test scores up (Song et al., 2009).

The seminal work of Joan Gaustad (1997) offers various recommendations for a successful implementation of the multiage classroom. She states “Where to begin is

much less important than beginning well” (p.3). Her study points out the importance of building a successful knowledge base for the teacher well before the multiage classroom begins. Gaustad (1997) also recommends beginning slowly by mingling various ages of students occasionally to collaborate on various projects. This gradual transition will give the teachers the confidence they need to be successful by allowing them to feel out the process and see how it can work.

In addition to time, effective implementation also requires financial resources that may be more than the budget of a single grade classroom. Gaustad (1997) states:

Multiage teaching takes years to master, and long-term staff development is expensive. So is hiring substitutes to enable teachers to attend workshops and plan changes with their colleagues. Other expenses include developmentally appropriate instructional materials for children, books and videotapes for adult learners, and outreach efforts to build community support. (p. 3)

As many districts face shrinking budgets, these financial resources may not be available for new programs or the sustainability of existing ones. A study conducted by the Oregon Department of Education and Ackerman Laboratory School (1994), also agrees with the financial assessment of multiage classrooms and site monthly in-service and curriculum development as essential financial requirements to sustain these programs.

In her report for The United Nations Educational, Scientific, and Cultural Organization, Angela Little (2004) addresses the issue of adapting curriculum for the multiage classroom. Little’s research findings are a compilation of the data collected by David Pratt (1986) where he reviewed 30 case studies in the United States and Canada, Bruce Miller’s (1994) research of 21 studies in the U.S., Simon Veenman’s (1995) work

as well as the studies conducted by Mason and Burns (1997).

In her report, Little points out “several conditions that need to be met in order to make learning and teaching in multi-grade settings beneficial for learners” (p.12). The areas of focus in her report are increased awareness, curriculum adoption, learning materials, teacher preparation and assessment systems. Little’s findings mirror those of Lauder (2000) and Song, Spradlin and Plucker (2009) but go on to propose an actual plan for successful implementation.

The area of increased awareness is one that is fundamental to successfully adopting a multiage classroom. “Many educational policymakers, planners, professional support staff and the public at large are unaware of the extent and nature of the needs of multi-grade classes” (Little, 2004, p. 13). People have become familiar with the single grade style of education and curriculum, materials and assessment are all geared toward this approach. Policymakers need to be made aware of the multiage reality, and aid in developing resources better suited for these classroom configurations. “Multi-grade teachers should not be expected to adapt the general system to their specific multi-grade circumstance” (Little, 2004, p. 13).

Curriculum adaption, as proposed by Little’s (2004) research, is seemingly the biggest hurdle in successful implementation of the multiage classroom. “Curricula premised on a single grade structure need to be adapted to meet the needs of the multi-grade classroom” (p. 13). This adapted curriculum should be a joint effort with teachers, and experts at a national level, and must be sanctioned by the Federal Department of Education. The published literature of curriculum adaption continuously sets forth four strategies that have proved to be effective. The first being “multi-year curriculum spans”.

In this strategy curriculum content is spread across 2-3 grades rather than one, all learners in the classroom work through common topics and activities (Daniel, 1988). In this format all students learn the same things at the same time, and by the end of the two or three year span they should all be accountable for the information, much like their peers would be in a single grade formation.

The second adaption approach is known as “differentiated curricula,” where students in the multiage class all study the same general theme or topic simultaneously. Students in each grade group engage in tasks suitable to their level of learning (Son, V., Pridmore P., Nga, B., My D., & Kick P., 2002). This is different from the multi-year curriculum span as the student learners have different outcome goals within the given topic, they are not all expected to master the concepts equally, but as appropriate to their given grade level.

The third adaption has been labeled “quasi monograde” (Little, 2004) and is seemingly the most difficult for the classroom teacher, as it requires a tremendous amount of preparation and management skills. Little states:

In this strategy, the teacher teaches grade groups, in turn, as if they were monograded. Learners follow the same or a different subject at the same time.

Teachers may divide their time equally between age groups. Or they may deliberately divide their time unequally, choosing subjects or tasks within subjects that require different levels of teacher contact. (p.14)

While this strategy has some merit, the necessity for large amounts of preparation time is obvious as is the need for extra help within the classroom from another teacher or support staff.

The last adaptation, “learner and material centered,” was proposed in Levin and Lockheed’s (1993) research. This tactic relies heavily on the learner and the materials provided by the teacher. Levin and Lockheed (1993) put forward that “curriculum be translated into self-study graded learning guides. Learners work through these at their own speed with support from the teacher and structured assessment tasks. Learning is constructed as involving a relationship between learner, learning materials and teacher” (p. 14). In order for a “learner and material centered” educational approach to be effective, the students must be highly motivated to learn and be shown how to self-teach the various topics to be covered.

The four previous strategies, “multi-year curriculum spans,” “differentiated curricula,” “quais-monograde” and “learner and materials centered,” all have benefits as well as certain disadvantages. They do share one common challenge: the preparation necessary to successfully implement is tremendous and cannot be undertaken with haste.

Angela Little’s (2004) research also pointed to the need of sufficient learning materials. She states:

Most researchers and practitioners agree that successful strategies for multi-grade teaching depend on adequate supplies of learning materials to support individual and group-based learning. This enables teachers to spend time with some groups of learners while other learners work alone, in pairs or in small groups. (p.16)

Although having appropriate materials is imperative for classroom success, the presence of them does not guarantee quality of learning. The materials need to be high value and pertinent to the learning outcome. These materials are not a substitute for effective teaching, but they do play a vital part in an integrated teaching strategy. Little also points

out that conventional school “textbooks are usually written on the assumption that lessons are teacher led” (p.16). Textbooks are also primarily designed for specific grade levels and rarely take into consideration that there may be a variety of ages working in them.

Teacher preparation is another vital area that needs to be properly addressed in order to facilitate a successful multiage learning environment. According to Little’s (2004) study, multiage teachers “generally have to rely on their training in the principles of diversity and differentiation in coping with the demands of the multiage class” (p. 17). While there are many in-service training options available, these are not an adequate means to ensure teacher success. These trainings are an introduction at best, although teachers may make “gains in their knowledge of useful strategies for multi-grade teaching...evidence for the incorporation of the training ‘messages’ at the classroom level was modest” (Little, 2004, p. 17).

The last condition that Little (2004) sets forth as an important aspect of the multiage implementation is that of a proper assessment system. One purpose of student assessment is the monitoring and accountability of the school and instructor, especially with NCLB and other state benchmarks examining the yearly progress of our schools. These grade-level standards create a difficulty for the multiage classroom, as they do not “recognize individual differences in learning, rather (they) treat all learners as if they were the same level” (p. 18). A new student assessment system must be addressed to encapsulate the multiage classroom learner.

Bruce Miller (1994) points out that proper implementation of a multiage classroom “represents a personal transition from the known to the unknown across many dimensions at the same time” (p.118). This massive transition in teaching methods can represent a

major challenge for those involved, a challenge that can trigger fear and apprehension for the change. Changing from the traditional graded classroom configuration to a multiage design is far more than “simply changing to a new textbook or learning a new strategy or program. Implementing multiage instruction and organization represents a major shift in classroom norms” (p. 118).

This shift in classroom norms can be seen when the two educational environments are compared side by side. Miller’s (1994) research provides a table (p.105) in which this comparison demonstrates the enormity of changes teachers must cope with.

Comparison of Teacher and Student Norms in Straight and Multiage Groups

<i>Classroom Norm</i>	<i>Single Grade Classroom</i>	<i>Multiage Classroom</i>
Belief about Student Ability	Competence and ability viewed as a fixed entity. Some students possess high academic ability while others have low ability.	There are many different forms of ability and competence. Every child demonstrates competence and ability on some instructional task. Therefore, many diverse activities and tasks are used.
Teacher Role	Presenter of curriculum content, grader of student accomplishment, manager of resources, and controller of student behavior.	Problem solver, tutor, facilitator, promoting all children to achieve learning objectives and to excel across a broad range of competency areas.
Basis for determining competence	Reading ability is used as the primary gauge of competence and ability.	Competence and ability are recognized in a variety of areas. Students demonstrate competence in reading, art, music, idea generation, cooperative skills, and so forth.
Task Structure	A narrow range of activities is used for learning. These are whole group instruction, independent study, seatwork, or small table ability groups.	Wide range of different activities for learning, where students can demonstrate a variety of competencies. These include individual, pair, small group, and large group activities.
Learner assessment and evaluation	Grades are arbitrarily curved and normally distributed, which ranks and labels learners. Evaluation is highly visible and comparative.	Focus is on identifying student performance strengths and needs across a wide variety of instructional areas and tasks. Growth is measured on a continuous basis and is private and individual.
Effects on Learner	For low achieving students there is a negative effect on self- concept, motivation and work effort. High achievers are reinforced and given greater opportunities to learn. Students also develop a dependence on the teacher.	Student academic self-concept, sense of efficiency (personal control), achievement, and motivation are enhanced. Students learn that everyone has ability and can demonstrate competence in some area. Self-direction and independence develop.

Miller (1994) does recognize that his research is not one size fits all and mentions that “it should be noted that many single grade classrooms operate as multidimensional learning environments, especially when using whole language, cooperative learning and other

highly interactive learning approaches” (p. 120).

Organization of Curriculum and Instruction

A fundamental aspect of a successful multiage classroom is the way in which curriculum and instruction is organized. This organization must be mindful of the four essential categories of learning, according to Lillian Katz (1988), knowledge, skills, disposition and feelings. Katz points out that the first two, knowledge and skills, are traditionally the focus of education, but to truly educate a child the second two categories of learning are equally important. A child may learn how to read and decode written words, but their attitude about reading may inhibit their educational experience. This positive attitude about learning is one of the key focuses when teachers organize their curriculum and how it is presented in the multiage classroom.

There are a variety of strategies a teacher can use to be successful when organizing the instructional piece for the multiage classroom. The research of Dr. Melanie Shaw (2008) suggests the promotion of flexible grouping. This grouping needs to be with older and younger classmates and will promote “student interaction, collaboration, enhancing motivation by encouraging students to work through problems” (p. 1). By creating a variety of grouping situations, the teacher can have the students work on projects of varying ability levels, allowing the lower-ability learners to work on aspects of the project that may not be as complex.

Shaw (2008) also emphasizes the importance of supporting mastery learning and points out the value of understanding the different educational levels each child may be at:

Mastery learning enables students to achieve objectives through varied learning

times as needed, because each student requires a different timeline to master basic skills and achieve curriculum goals. Teachers must allow adequate time for students to master tasks sufficiently and be responsible for their own rate of progress. (p. 1-2)

This concept is paramount to a successful multiage classroom. The idea of varying timelines is a concept that is necessary for students and parents to understand and it is the teacher's responsibility to clarify how this works for each individual involved.

Jo Hoffman's (2003) case study of multiage teaching strategies reveals four fundamental beliefs that are a commonality among teachers in these types of classroom configurations when organizing instruction. Her results were based upon interviews and classroom observations, are qualitative in nature, and construct a cross-case examination of four elementary teachers. Hoffman posits the four beliefs that are prominent across her study to be "differentiated instruction, social collaboration, flexible grouping and student interest" (p. 13). The results of the study indicate the need to place a high importance on accepting and celebrating the student diversity within the room. Meeting the needs of a diverse group is done through the aforementioned beliefs when the teacher assumes the role of facilitator or mentor. "Teachers in this role support student directed learning and are able to meet all of their students' needs, delivering direct instruction to small groups or individual students" (Hoffman, 2003, p. 2).

Although Hoffman's (2003) study sample is small, the results were consistent with all those who were interviewed and observed. Hoffman's findings also echo the beliefs of other formidable research done on the topic (Gaustad, 1992, 1997; Hallion, 1994; Miller, 1991; Katz, 1995). Even though her conclusions support the results she

expected, it would be negligent to avoid the fact that her four salient beliefs for multiage success also are important and essential in a traditional classroom.

The concept of differentiated instruction and student interest is also a common element within the literature review provided by Tomlinson et al. (2003) where they state:

Interest-based study is linked to motivation and appears to promote positive impacts on learning in both the short and long term. Modifying instruction to draw on student interest is also supported by theory and research as a means of enhancing motivation, productivity, and achievement. Questions and tasks that are interesting to students are more likely to lead to enhanced student engagement with the task, the student's sense that the work involved is rewarding, greater evidence of student creativity, increased student productivity, a higher degree of student autonomy, and a higher level of intrinsic motivation. (p.7)

Tomlinson et al. (2003) go on to suggest that student interest leads to a sense of confidence and self determination within the learner which will enable them to accept challenges, foster a positive attitude, and unlock their creative potential.

Successful curriculum organization and instruction is also dependant upon the classroom teachers learning to “share classroom management with their students, so that students learn to be responsible for themselves and others both in the work of the classroom and its maintenance” (The Regional Laboratories of Educational Improvement of the Northeast and Islands, 1994, p. 5). This empowerment of the student provides them with a sense of control and ownership over their learning and their learning environment. By providing this sense of ownership, the classroom becomes organized

around the learner and transforms the classroom from a teacher-centered environment to a learner-centered one (The Regional Laboratories of Educational Improvement of the Northeast and Islands, 1994).

According to The Regional Laboratories of Educational Improvement of the Northeast and Islands (1994) report, curriculum in a multiage classroom is most effective when it is “based on learning activities and materials that are age appropriate to the physical, emotional, social, and intellectual age-span in the cluster. The multiage classroom recognizes the individual personality, learning style, and family background of each student in the way learning experiences are designed” (p.5). The report goes on to characterize the ideal teacher prepared learning environment as:

- Use of projects and learning centers to stimulate inquiry and provide choices.
- Incorporation of student interest and suggestions to plan lessons and assignments.
- Interaction between students, between students and adults, and among students, adults and community resources.
- Time scheduled for individual reflection, small group work, and whole group meetings.
- Learning activities and materials that represent real-world tasks and are relevant to students’ lives.
- Involvement of parents in student-led conferences, opportunities to assist in classrooms, and home based activities to support learning.
- Assessment of individual progress through teacher observation and record-keeping, student portfolios, and videotaped projects and performances. (p.10)

The instructional strategies that work best in a multiage classroom as suggested by the most prominent researchers on the topic (Lillian Katz, 1988, 1995; Shaw, 2008; Hoffman, 2003; Gaustad, 1992, 1997; Hallion, 1994; Miller, 1991; Tomlinson et al., 2003; The Regional Laboratories of Educational Improvement of the Northeast and Islands, 1994) include cooperative learning and peer tutoring, planned theme or interdisciplinary units and a wide range of learning modalities. They also suggest process writing, whole language and whole math due to the developmental span of these classroom configurations.

Cognitive Effects

While there is data both supporting and refuting beneficial cognitive effects within students in multiage classrooms, the statistics on the topic appear to the researcher to be heavily biased depending upon the study and the assumed outcome of the proposed query. “Most research on examining the impact of multiage grouping has not made clear whether the multiage classroom provides a unique advantage in either the affective or academic realm beyond what can be achieved by simply employing developmentally appropriate practice” (Kinsey, 2001, p. 3).

Simon Veenman’s (1995) research on the cognitive effects of a multiage classroom provides a compilation of 38 different case studies that have been done on the topic. Veenman was comparing the effect size of the cognitive data for all the case studies. Effect size, as explained by James Neill (2008), is reported in decimal form, with .00 meaning the experimental and control groups both performed the same, and 1.00 indicating a major difference between the two groups. His comparison of data came to this conclusion:

The findings from this set of studies do not favor the multiage classroom. In most of the studies, no significant differences were found. The median effect sizes for the two main categories of studies for which effect sizes could be estimated were: (a) $ES = +.03$ for the two best-quality studies with evidence of initial equality, and (b) $ES = -.07$ for the six studies lacking evidence of initial equality. For all 11 studies from which effect sizes could be estimated, the median effect size was $-.03$ ($M = -.08$). In the study by Marsh (1980), the largest significant achievement differences were found in favor of the single-grade classes, although significant pretest differences bring these findings into question. In terms of academic achievement, multiage classes appear to be generally equivalent to single-age classes. (p.319)

Veenman (1995) did point out that the studies were not all measuring the same variables and were performed in a variety of locations measuring the cognitive growth of varying socio-economic, ethnically diverse populations and different age levels.

The empirical data presented by David Pratt (1986) supports the findings of Veenman (1995). Pratt's work is a comparison of 30 separate case studies that looked at the cognitive growth of multiage classrooms in the United States and Canada over the span of 35 years. Pratt concluded, "the findings...suggest that multiage grouping has no consistent effect on academic achievement" (p. 113).

Critics of Veenman's (1995) work, such as Mason and Burns (1996) suggest that his conclusion, that there were no cognitive differences found between graded classrooms and multiage classrooms, were inappropriately represented. The research of Mason and Burns (1996) over a five year span of time, looked at factors that Veenman (1995) did

not. These factors, selection bias and lower quality of instruction, when included in the statistical data, shift the results to show that not only is there no positive difference in the multiage results compared to the single grade results, but rather have a negative instructional effect, as well as a severe consequence on teacher stress levels, motivation, and commitment to teaching.

Conversely, a study by Ward (1999), which looked at the side-by-side data of two classrooms within the same school, having the same socio-economic status, the same cultural make up and even the same teachers over the course of a year, found the results to be quite different. Ward (1999) reported an increase in the mean test scores in both math and reading. The data showed the multiage group scored an average of three percentage points higher in math and an average of three percentage points higher in reading as well. Although Ward's data shows an increase in cognitive ability, her sample size was quite small, but the fact that the student demographic and classroom teachers were the same does point to some validity in her study.

A compilation study conducted by Barbara Pavan (1992) examined 64 case studies that took place between 1968 and 1990. All of the studies had the three descriptors of academic achievement, mental health indicators and achievement for a variety of at-risk populations. The results of Pavan's (1992) study showed that "of those studies, 52 (91%) indicated that for all comparisons, the non-graded groups performed better (58%) or as well as (33%) the graded groups on measures of academic achievement . . . only nine percent did worse" (p. 22).

Pavan's (1992) comparative study also broke down the data to specifically look at the at-risk population of students. The results showed higher academic achievement test

scores for young boys considered to be at-risk, black students, underachievers as well as students of lower socioeconomic status. These results could be attributed to more individualized attention for these at-risk students, but they still do indicate a positive cognitive effect of the multiage environment.

The fluctuations in results are wide and varied, as it appears the pendulum swings in the direction of positive results in some situations and negative results in others, depending on the participants in the study and the researcher compiling the information. The work of Thomas and Shaw (1996) sum it up the following way:

One may conclude that when programs are correctly implemented, students may attain higher achievement levels and improved social skills. But students in multigrade schools which fail to adopt effective pedagogical techniques tend not to perform as well as their counterparts in single grade schools. The lesson to be drawn from this is that in order for a multigrade school to work well teachers must master and use effective teaching practices, be supported through training programs, and have appropriate texts and materials at their disposal. (p. 33)

One can deduce that decisive results on the cognitive effects of a multiage classroom are difficult to ascertain. Due to this difficulty, any researcher can extrapolate findings that will support their foregone conclusions about the topic. The research does indicate, however, that in a majority of case studies the cognitive effects of a multiage program is at least equal to their traditional classroom counterparts when teachers apply best practices for their students.

Social Implications

Although the literature and research does not point to clear results on the

cognitive effects of multiage classrooms the results of the social aspects of such a configuration are more concrete. Hallion (1994) compared the research of Pratt (1986) and Miller (1989) and came to the succinct conclusion that multiage classrooms are superior when it comes to “student affect, better self-concept, and a more positive attitude about school” (p. 14). Hallion (1994) also reviewed the work of Pavan (1992) and came to the same conclusion about multiage classrooms and stated: “...the results favored multiage in terms of both standardized achievement test scores and in terms of students’ attitudes about school. The effects were more marked the longer they were in the multiage program” (p. 14).

The concept of social benefits can be difficult to measure quantitatively as most of the research is descriptive in nature. The research of Ong (2000) points out that most of the studies revolving around the social benefits of a multiage classroom are done by scouring over field notes, testimonials from the participants and direct or indirect (video taped) observation. Ong (2000) concluded that:

There is no doubt about the growth in social and affective development (e.g., child-child and child-teacher interactions, problem solving, and peer assistance).

In particular, data on cooperative problem solving reveals noteworthy benefits in favor of multiage classrooms. Although many studies focus on social development, the impact of social gains on academic development, such as literacy, also has important learning implications. (p.10)

Other researchers agree with Ong’s (2000) assessment of social and affective growth despite the difficulties in measuring such variables. One aspect of this growth can be summarized by the work of Lilian Katz (1995) when looking at social

participation among mixed age children in the classroom. Katz highlights the value of younger students interacting with older children, and notes that through this participation they are able to contribute to far more complex activities than if they were by themselves or with strictly their own age group. In a multiage classroom the older students can set up the complex activity for the younger ones to participate in. Simple interactions like this empower the older student with a positive feeling of responsibility, and offer them an opportunity to share their knowledge with a younger student, thereby demonstrating ownership of learning (Katz, 1995).

Katz (1995) also discusses the social benefit for students who are developmentally immature in mixed age environments:

Research indicates that mixed-age groups can provide a therapeutic environment for children who are socially immature. Younger children will less quickly rebuff an older immature child than the child's same-age mates. Younger children will allow an older child to be unsophisticated longer than will his or her age peers. (p. 2)

Through Katz's (1995) work, the benefits for both the older and younger students in a multiage classroom are highlighted. The older students are empowered, shown how to take responsibility and are given the chance to be positive role models. The younger students benefit from the knowledge they glean from the older children. "They will spontaneously change the way they speak to suit the age of the listener. They change the length of the sentence, the tone, and the words they use" (p. 2). The mixed age classroom could potentially provide the context where students will appreciate their own levels of understanding as well as behaviors that they have grown out of as a means of recognizing

their own personal progress. These understandings will in turn allow the student to develop a sense of their personal development and self.

There are social risks involved with multiage grouping, as with every classroom configuration. “One concern with mixed age grouping is ensuring that younger students are not overwhelmed by older or more competent ones” (Katz, 1995, p. 4). Teachers have a significant responsibility to make certain the environment is friendly and the older students offer encouragement, explanations and directions to the younger ones. Teachers must also promote an atmosphere where the older children do not gloat over their accomplishments and abilities. Katz (1995) suggests various strategies to create this type of learning environment to avoid the pitfalls of a hostile age discriminatory situation. Having “older students read stories to the younger ones, and listen to younger students read . . . write things down for them, show them how to use the computer, in helping them find something, helping them get dressed for the outdoors” (p.3). This guidance in the classroom will foster a learning community where age can be used as a teaching tool and not as a distraction.

Older students also need to be shown how to safeguard themselves from being bothered by younger ones. Teaching older students how to explain to younger ones about patience and waiting their turn is a life lesson that is beneficial for both parties.

In summarizing Joan Lipsitz’s (1995) work, Katz states:

Teachers can also help younger students learn to accept their own limitations and their place in the total scheme of things, as well as encourage older children to think of roles and suitable levels that younger ones could take in their work or in their activities. The basic expectation is that children will be respectful and caring for

one another. (p. 3-4)

Creating a healthy environment in a multiage classroom teaches students how to behave in a community and helps them resist the temptation of age discrimination. A multiage classroom can offer a situation in which to educate students not only to value the stage of understanding or behavior they themselves recently had, but also to appreciate their own advancement and to grow a sense of the continuity of development (Katz, 1995).

Barbara Pavan (1992) looked at 64 research studies published between 1968 and 1990. To be included in this review “students in graded and non-graded schools with similar populations had to be compared using standardized test measures, or non-graded students had to be tested before and after the implementation of a non-graded program” (p. 22). Her study was comparing the mental health of students in these two educational situations. The data measured attitudes toward school, school anxiety and self-concept. The results of her study indicate:

Pupils in non-graded schools had more positive attitudes than those in graded schools, although they were likely to laugh more and less likely to raise their hands to get permission to speak. Students in non-graded schools scored higher than graded students on the Coopersmith Self-Esteem Inventory, except in one study, with no significant differences. The same pattern was noted in studies that used the Piers Harris Children’s Self-Concept Scale. (p.23)

The results of Pavan’s (1992) research conclude that 52% of the studies regarding mental health and student attitudes indicated multiage schools as better for students than traditional graded structures. Forty-Three percent found both classroom configurations to have similar influence on the student populations. The remaining 5% indicated that the

multiage classroom was worse on student's attitudes and self-concept.

Pavan (1992) also looked deeper into the 64 research studies and identified 18 that dealt primarily with at-risk students as defined by her study as "black students, underachievers, students of low socioeconomic status, and boys who seem to experience more difficulty in the early years of learning and are considered at risk" (p. 23). Seventeen out of the 18 studies indicated higher academic achievement in the non-graded schools for at-risk students as well as better attitudes toward school and themselves.

In all relative studies with data on black students "those in non-graded schools had better self-concepts and more positive attitudes toward school, teachers, and learning than those in graded schools" (Pavan, 1992, p. 23). The case studies revealed the same outcomes for underachievers and students of low socioeconomic status. One could conclude from Pavan's results that a multiage environment is the most beneficial for students who are considered at-risk.

Although a majority of the multiage educational studies reveal a positive social and emotional impact on students, a study conducted by Kelly Smith (1993) suggests otherwise. Smith created a "Multiage Attitude Survey" and administered it to 45 students in two different multiage classrooms in Perrysburg, Ohio. The students were in two different classes, one class was a third and fourth grade grouping and the other was a fifth and sixth grade class. The survey was designed "to measure attitudes, and identify individual concerns relating to multiage classes" (Smith, 1993, p.6). The survey consisted of 18 self-reporting items and represented six variables relating to the multiage classroom. The six variables being measured were "1) preferences at lunch time, 2) preferences in make up of classroom (multiage or homogenous), 3) preferences in

playmates at recess, 4) academic preferences, 5) preferences of who to invite to a party, and 6) performance on class work” (Smith, 1993, p. 6-7).

Smith’s (1993) study was attempting to examine differences of attitudes based on gender and grade level. Her findings regarding gender and attitudes showed that there was no significant difference in the mean attitude scores of females (2.76) and males (2.73) and therefore “attitudes toward multiage classrooms did not differ based on gender” (Smith, 1993, p. 7). There was a shift in her data when looking at attitudes based on grade level however. In both groups, the younger grade level reported liking multiage classrooms more than their older counterparts. The third grade students produced a mean attitude score of 3.06 toward liking multiage classrooms while the fourth grade students produced a mean score of 2.87. The results are the same for the older class where the fifth grade mean score was 2.89 and the sixth grade score was 2.17. Smith concluded from her study that younger students in a mixed age grouping have a more positive attitude toward their learning environment than the older students in the class.

Although Smith’s data shows an interesting correlation between age and attitudes in a multiage environment, it cannot be generalized to all multiage environments. The study took place in an upper middle class school with a predominantly (99%) Caucasian student population. This study is far from representative of multiage educational environments in our country.

Continued research of the literature on the implementation of curriculum, instruction, cognitive and social effects of the multiage educational model would yield similar results to all of the preceding research studies. While these results vary in regard

to drawing specific conclusions and show difficulties in extrapolating concrete evidence supporting or opposing multiage classrooms, the majority do suggest that multiage classrooms are at the very least equivalent to a traditional classroom, assuming effective teaching is taking place, and at the very best an environment where at-risk youth will find success.



Chapter Four

Summary, Conclusions, and Recommendations

The importance of examining the multiage classroom configuration will provide perspective as to the cognitive and social effects this type of classroom design has on students. Thorough analysis of proper implementation, instructional strategies, and assessment will present a complete picture of its value on today's educational system as a means to determine the multiage classroom's place in schools.

While there is extensive research on the topic of multiage classrooms the results are wide and varied. One can conclude that there are some positive effects of a multiage format. These positive outcomes include, but are not limited to, positive peer relations through the daily interactions within the classroom, the promotion of a constructive and encouraging classroom community and the ability to "cement" learning through peer tutoring opportunities (Hallion, 1994; Pratt, 1986; Miller, 1989; Pavan, 1992; Ong, 2000; Katz, 1995; Lipsitz, 1995). These positive aspects are important and ultimately what we want to see in our classrooms and our students, but they are not exclusive to the multiage classroom.

The effects on cognitive growth from the research show a smattering of results ranging from very positive (Ward, 1999; Pavan, 1992) to very negative (Mason and Burns, 1996) in the multiage model, although it is important to point out that a majority of the documented studies showed no significant effect on cognitive development (Kinsey, 2001; Veenman, 1995; Pratt, 1986; Thomas and Shaw, 1996). The simple conclusion that can be drawn from the available research is that the effect of a multiage model on students' cognitive abilities is neither positive nor negative in anyway, it is

simply an alternative approach to educating children and success is dependant upon quality of instruction.

The multiage approach is often used out of economic necessity in low population, rural areas. When this classroom design is used purposefully, for pedagogic reasons, it is often a policy choice made by schools and/or districts for the sole purpose of meeting the varied needs of its student population. The purposeful design is best suited for success as it is a reflection of careful consideration and planning, not mandated out of necessity, often financial (Gaustad, 1992, 1994, 1997; The Regional Laboratories of Educational Improvement of the Northeast and Islands, 1994; Lauer, 2000; Song, Spradlin & Plucker, 2009; Little, 2004, Miller, 1994; Mason and Burns, 1997; Pratt, 1986, Veenman, 1995; Katz, 1988).

One can also conclude from the research that the implementation of a successful multiage classroom is a process that requires much thought and planning. Teachers in these situations have repeatedly expressed the need for more training, materials and support (Gaustad, 1995, 1997; The Regional Laboratories of Educational Improvement of the Northeast and Islands, 1994; Lauer, 2000; Song, Spradlin & Plucker, 2009; Little, 2004). Successful implementation needs to begin in our colleges and universities as part of a complete teacher-training program. Students in pre-service teaching programs are taught grouping strategies and about the diversity within the classroom, but this is not enough. Approaching a classroom of mixed age students requires much more than the basic ability grouping strategies that are taught in teacher training programs.

Although the research shows a mixed review of the successes in the multiage classrooms, these learning environments will continue to exist. In order to create the best

possible outcomes for a multiage classroom and school, the following recommendations should be considered:

- Increased awareness among the policy makers and curriculum designers. Many of those who dictate the direction of our schools are unaware of the needs of multiage classes. This is especially problematic in the age of No Child Left Behind where grade level standards dictate what is taught and when. These grade level benchmarks pose a major obstacle for the multiage teacher.
- A curriculum needs to be adapted from a single grade structure to meet the needs of a more diverse group. This curriculum needs to be designed to span two or three grades instead of one, and needs to ensure that all students are working on topics and themes that are appropriate to their level of learning.
- The philosophy of learning needs to be altered from one that focuses on learner homogeneity and standardization of teacher instruction to one that acknowledges learner diversity and the necessity of differentiation of instruction.
- A shift in available learning materials needs to be made. Traditional textbooks are written on the postulation that lessons are all teacher led. In a multiage classroom, this is not always the case and the books need to be revamped for the self-studying learner. This allows the instructor to spend time in one group while other learners work alone or in pairs. The placement of these materials in the classroom does not guarantee quality of learning, but if they are of value and high-quality they can become part of a successful integrated teaching approach.
- Pre-service teacher training is vital. While teachers are trained in our universities about the principles of diversity and differentiation, this is not nearly enough. Proper

training would eliminate the negative attitudes that are present in many multiage buildings.

- The assessment systems need to encourage teachers to distinguish individual diversity in learning, rather than treating all students as if they should all fit into the same box.

Formative assessment is a necessary means for both teacher and student.

One should also acknowledge that every school and population is different and the above recommendations are just starting points and not the entirety of creating a successful program. There is a continued need for constant program assessment and adaptations as necessary.

Educators and school districts that are interested in shifting to the multiage model of education are encouraged to directly observe schools and settings where they already exist. In-depth awareness of how the program works is vital to a successful implementation, this knowledge would come from conversations with staff to glean an appropriate understanding of the obstacles they may face. Further study of successful and failed programs would be an essential piece of information for anyone looking to transition from a traditional graded structure to a multiage model. As no two schools are the same, and district demographics constantly change, the information and materials gathered would need to be specifically matched to the students who are being served. This represents a significant amount of time and research, and the multiage educational model is not one that can be adopted quickly.

So where does the multiage classroom fit into today's educational system? Clearly it can be implemented as an alternative to the traditional classroom structure and produce comparable academic results as long as best teaching practices are applied. The bulk of

the research points out that *all* students can benefit from a multiage classroom, at least on the social and emotional level. But this is not where the multiage model is best served.

One true benefit can be seen with at-risk students who are not finding success in a traditional classroom, students who have more behavioral and emotional needs than their peers, and students in minority groups that traditionally fall behind their same age counterparts. When schools and districts struggle to find an educational solution for these student groups they would benefit from exploring the option of a multiage configuration.

This research concludes that the multiage classroom model is a more attractive option than the traditional system based solely upon the social benefits for the individual learner. These classrooms produce empowered students with positive attitudes about school and learning, more confidence, a better self-concept, and most importantly the ability to positively relate and contribute to a diverse society.



References

- Anderson, R. (1987). Shaping up the shop: how school organization influences teaching and learning. *Educational Leadership*, 44(5), 44-46. doi: 5527152
- Anderson, R. (1993). *The return of the non-graded classroom*. Palatine, IL: IRI/Skylight Publishing.
- Bingham, A. (2000). *Exploring the multiage classroom*. York: Stenhouse Publishers.
- Berry, C. & Little, A. (2001). Multigrade and multi-age teaching in classrooms in London, England, in Little, A. *Education for all: the challenge of multiage teaching*, Amsterdam, Kluwer.
- Bryant, B., & Olstead, K. (1995). Establishing a multiage program: learning from experience. An ERS interview with Robin Sweeney. *ERS Spectrum*, 13(2), 3-11.
- Carter, P. (2005). The modern multiage classroom. *Educational Leadership*, 63(1), 54-58.
- Cummings, C. (1990). Appropriate public school programs for young children. (ERIC Document Reproductive Service No. ED321890).
- Daniel, I. (1988). Doing the splits: core French in elementary schools. The impact of combined classes on students. *The Canadian Modern Language Review*, 45(1), 146-154.
- Gaustad, J. (1992). Nongraded primary education. *Research Roundup*, 9(1), 2-5.
- Gaustad, J. (1995). Implementing the multiage classroom. (ERIC Document Reproductive Service No. ED381869).
- Gaustad, J. (1996). Implementing multiage education. *Research Roundup*, 13(1), 2-5.
- Gaustad, J. (1998). Implementing looping. (ERIC Document Reproductive Services

- No. ED429330).
- Hallion, A. (1994). Strategies for developing multi-age classrooms. *Proceedings of the Annual conference of the national association of elementary school principals association*, <http://eric.ed.gov:80/PDFS/ED373899.pdf>
- Hoffman, J. (2003). Multiage teachers' beliefs and practices. *Journal of Research in Childhood Education*, 18(1), 5-17.
- Katz, L., Evangelou, G., & Hartman, J. (1990). *The case for mixed-age grouping in early education*. Washington, D.C.: National Association for the Education of Young Children.
- Katz, L. (1995). The benefits of mixed age grouping. (ERIC Document Reproductive Service No. ED382411).
- Kinsey, S. (2001). Multiage grouping and academic achievement. (ERIC Document Reproductive Service No. ED321867).
- Lauer, P. (2000). Instructional practices and implementation issues in multiage classrooms. (ERIC Document Reproductive Service No. ED450099).
- Levin, H., & Lockheed, M. (1993). *Effective schools in developing countries*. Washington, D.C.: Falmer Press.
- Lipsitz, J. (1995). Prologue: why we should care about caring. *Phi Delta Kappan*, 76(9), 665-667.
- Little, A. (2004). Learning and teaching in multigrade settings. *Proceedings of the UNESCO 2005 EFA monitoring report*, <http://siteresources.worldbank.org>
- Lloyd, I. (1999). Multiage classes and high ability students. *Review of Educational Research*, 69(2), 187-212.

- Mason, D., & Burns, R. (1996). "Simple no better and simply no worse" may simply be wrong: A critique of Veenman's conclusion about multigrade classes. *Review of Educational Research*, 66(3), 307-322. doi: 10421532
- Miller, B. (1991). Teaching and learning in the multiage classroom: Student performance and instructional routines. (ERIC Document Reproductive Service No. ED335178).
- Miller, B. (1995). *Children at the center: implementing the multiage classroom*. Eugene, OR: Northwest Regional Educational Laboratory.
- Moberly, C. (1976). A comparison of the effects of multiage grouping verses homogenous age grouping in primary school classes of reading and mathematical achievement. (ERIC Document Reproductive Service No. ED128102).
- Neill, J. (2008). *Why use effect size instead of significant testing in a program evaluation?* Retrieved from <http://www.wilderdom.com/research/effectsizes.html>
- Ong, W., Allison, J., & Haladyna, T. (2000). Student achievement of 3rd graders in comparable single-age and multiage classrooms. *Journal of Research in Childhood Education*, 14(2), 205-215. doi: 59428202
- Oregon Department of Education, Ackerman Laboratory School. (1994). *Mixed-age programs*. Salem, OR: Oregon Department of Education.
- Osin, H., Luis, M., & Lesgold, A. (1996). A proposal for the reengineering of the educational system. *Review of Educational Research*, 66(4), 621-656.
- Paven, B. (1992). The benefits of nongraded schools. *Educational Leadership*, 50(2), 22.
- Pratt, D. (1993). *On the merits of multiage classrooms*. Palatine, IL: IRI/Skylight

- Publishing.
- Shaw, M. (2008). Instructional strategies for multiage classrooms. *New Teacher Advocate*, 16(1), 12-13.
- Smith, K. (1993). Attitudes toward multiple aged classrooms of third, fourth, fifth, and sixth grade students. (ERIC Document Reproductive Service No. ED361088).
- Son, V., Pridmore, P., Nga, B., My, D., & Kick, P. (2002). *Renovating the teaching of health in natural and social sciences (grades 1,2,3) and science (grade 5) multigrade primary school: a teacher's guide to health*. Hanoi, VN: British Council and the National Institute of Educational Sciences.
- Song, S, Spradlin, T, & Plucker, A. (2009, January 15). *The advantages and disadvantages of multiage classrooms in the era of NCLB accountability*. Retrieved from http://ceep.indiana.edu/projects/PDF/PB_V7N1.pdf
- Stone, S, & Christie, J. (1996). Collaborative literacy learning during socio-dramatic play in a multiage (k-12) primary classroom. *Journal of Research in Childhood Education*, 10, 123-133.
- The Regional Laboratory for Educational Improvement of the Northeast & Islands. (1994). Multiage grouping. *Occasional Paper Series*, 9(1), 1-15.
- Thomas, C, & Shaw, C. (1996). Issues in the development of multigrade schools. *World Bank Technical Paper*, 172. Retrieved from <http://ideas.repec.org/p/fth/172.html>
- Tobias, S. (1994). Interest, prior knowledge, and learning. *Review of Educational Research*, 64, 37-54. doi: 10.3102/00346543064001037
- Tomilson, C.A., Brighton, C., Hertburg, H., Callahan, C., Moon, T., & Brimijoin, K. (2003). Differentiating Instruction in response to student readiness, interest, and

learning profile in academically diverse classrooms: A review of literature.

Journal for the Education of the Gifted, 27(2/3). 119-145.

Ward, G. (1999). *The multiage classroom*. Unpublished master's thesis, Rowen University, Glassboro, NJ.

Veenman, S. (1995). Cognitive and non-cognitive effects of multi-grade and multiage classes: A best-evidence synthesis. *Review of Educational Research*, 65, 319-381.



CONCORDIA
UNIVERSITY