The Multi-Age Classroom: What Research Tells the Practitioner

Sandra J. Stone

Foundations

Let's create a multi-age classroom. Picture kids of different ages in one classroom with one teacher for several years, and you are visualizing a trend in education reform. That's what a simple definition of a multi-age classroom dictates: A mixed-age group of children who stay with the same teacher for several years. A successful multi-age classroom, however, is more than this simple definition implies. It is a classroom founded on research and learning theory about how children learn and that guides developmentally appropriate practices. These foundations drive, empower, and uphold a model of education that seeks to support the well-being of children (Goodlad and Anderson 1987) by creating a structure that allows educators to fit the schools to children rather than fit the children to the schools (American Association of School Administrators 1992).

A multi-age classroom cannot be successfully implemented without an understanding of how children learn and of developmentally appropriate practices. Without these foundations, we will have classrooms labeled "multi-age" that do not embody what a multi-age classroom can be and do for children.

Two Different Systems of Education

Graded System

We have two distinct systems of organizing children for the purpose of educating them. In the graded system, which was brought to the United States by Horace Mann in 1843, children are organized by age into grades and proceed through a system of sequential grade levels and curriculums. The graded system is based on a factory model that was used to classify and manage the increasing needs of urban schools, which were mostly a product of the Industrial Revolution (Rippa 1988).

Multi-Age System

In the multi-age system, children are placed in heterogeneous family groupings for several years with the same teacher and are allowed to move at their own pace. The multi-age classroom provides a natural learning environment—an environment similar to that found in families.

Factory Model

Horace Mann made admirable contributions to public education, but the factory model views children and learning in a rigid manner that does not correlate with what research tells us about children and how they learn. The

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graded system assumes that all children are the same in development and needs; that they can be taught in the same way; that learning can be sequenced into discrete skills, becoming more complex from year to year; and that education is a product, not a process.

A Research-Supported View

Today's multi-age system sees learning from a completely opposite view, a view that is adequately supported by research. The multi-age system assumes that all children, even children of the same age, are different in their development and needs; that children construct their own knowledge in their own way; that learning should be child-centered, not curriculum-centered; and that education is a process, not a product (Piaget 1976, Piaget and Inhelder 1969). Multi-age classrooms also promote social learning—children learning from each other (Vygotsky 1978).

Classifying Children

The graded system and the multi-age system are at opposite ends of the pole. In most graded systems we have the same expectations for children in the same grade, at each grade level, regardless of their development or needs. Grade-level expectations become a tool for classifying children within the grade level (above grade level, at grade level, and below grade level). The child who masters the grade-level skills is a success; the child who does not is a failure. Children, labeled by grade-level expectations, fit nicely within the factory model; they enter the system on a conveyor belt, knowledge is imparted, and those who possess the knowledge are stamped "approved" and travel on to the next grade. Children who do not master the skills are retained. Goodlad and Anderson (1987) suggest that

Realities

> teachers and administrators must constantly subvert [grade levels] in order to deal with the realities of individual differences. Compromise, invention, adaptation and thoughtful disregard for grade-level standards are invariably practiced in grade schools, even though many teachers probably do not realize fully how unfaithful to gradedness they find it necessary to be in their daily work with children. That each child's unique needs must be accepted in good spirit is rarely resisted by such teachers, although abandonment of the labels and the administrative practices (e.g., competitive marking systems) that contradict such a view does not generally seem feasible to them (p. xxvi).

Uniformity

The sequencing of skills in the graded system is also designed irrespective of the variability in children's abilities and interests. The teacher teaches the sequenced skills from grade to grade. In this curriculum-centered system, there is a strong focus on the quality of the lesson, which may cause teachers to be narrowly defined as "givers of knowledge and skills," rather than "facilitators of learning." Lolli (1993) argues that a school organization based on a factory model of uniformity does not give children the time and opportunity to develop at their own pace, and it actually works against what research tells the practitioner about how children learn.

Developmental Learning

On the opposite end of the pole, the multi-age system embraces a developmental view of learning. The learning environment is structured over several years to support a child's natural development, and the teacher's role is defined as a facilitator of learning. Expectations for children are high, but appropriate. There are no grade levels, no grade-level expectations, no letter grades for the purpose of labeling, and there is no retention in grade. The focus is on giving every child the opportunity to find success and become a lifelong learner.

Aims of Education

Many graded schools adhere to the same multi-age philosophy, based on research, and seek to provide child-centered education. The structure of the graded system, however, often hinders continuous, successful progress for all children. The multi-age structure allows for greater flexibility and fewer restraints than the graded structure, which most often is bound by practices from the factory model (e.g., grade levels, grades, retention, promotion). As Elkind (1989) suggests, there are two opposing aims of education: (1) to facilitate the development and personal construction of each child's knowledge, and (2) to produce children who score high on achievement tests. The multi-age system adheres to the first aim, while the graded system often finds itself chained to the second aim.

Mixing Philosophies

It is important to keep in mind the two systems and their inherent differences as we explore how research informs practice in the multi-age classroom. Mixing the two philosophies is often detrimental to implementing effective multi-age classrooms, and is the cause of great frustration for both administrators and teachers. Consider, for example, a multi-age teacher who is required to give graded report cards; a multi-age administrator who is expected to have a given percentage of his children master certain skills by the end of each multi-age level; teachers and administrators who are required by state legislators to meet grade-level equivalencies in their multi-age classrooms. All of these reflect graded practices that we are trying to fit into a multi-age system, but they don't fit! They simply do not fit with a developmental, continuous-progress model of education.

Research Foundations for Multi-Age Classrooms

Learning Theories

First, let's look at the research on how children learn—research that guides developmentally appropriate practice. Then we will look at how this research plays out in a multi-age classroom. You will find that successful and effective multi-age teachers integrate this research into their multi-age environments, instruction, curriculum, and assessment. Most of the research fits under two theoretical frameworks: constructivist learning theory or social learning theory.

Constructivist Learning Theory

Jean Piaget's (Piaget 1976, Piaget and Inhelder 1969) constructivist learning theory helps us understand how children learn.

Domains

1. *Children learn as a whole persons.* Children learn across multiple, interacting domains of human development (cognitive, physical, social, emotional, aesthetic, moral). Learning is an integration of all these domains (Bredekamp 1987, Dewey 1966). For example, if a child is learning to add (cognitive), and he is excited to learn (emotion), he will probably pursue addition with keen intent. However, if the child is tired (physical) or does not feel successful (emotion), he will probably avoid the task.

Affect

How affect (emotion) interacts with children's learning is a serious consideration in multi-age classrooms. The multi-age class promotes a risk-free, supportive, nurturing environment where every child is valued. The environment, instruction, and assessment is designed to be on the cutting edge of each child's cognitive, physical, social, and emotional abilities, thus taking each child successfully to the next level of growth. Shaffer (1988) suggests that children who feel successful about their academic and social competencies do better in school and have more friends than those children who feel socially or intellectually inadequate. Bloom (1981) also notes that success increases the probability that a child will develop a positive self-image and high self-esteem. In the multi-age classroom, children are provided a safe, challenging environment where affect (emotion) thrives. They are free to take risks, stimulated by choice and interest, and motivated by success.

Whole Persons

Because children learn as whole beings, the multi-age classroom chooses an integrated curriculum model (Fogarty 1991), which provides experiences across all domains. In a given day, children are involved in art, drama, social skills, and moral decisions, as well as the typical academic skills of reading, writing, and math. The multi-age concept not only recognizes that a child learns as a whole person, but also strives to address the child's needs across all domains.

Knowledge Construction

2. *Children construct their own knowledge of the world.* As Piaget suggests, children constantly assimilate new experiences into their existing knowledge. As they interact with the environment and people, they change and reorganize their knowledge (Piaget 1976, Piaget and Inhelder 1969). You cannot "give" knowledge to children; they must construct it and this construction is personal and unique.

In the multi-age classroom, children are given opportunities for personal interaction with the surrounding world, direct experiences with real objects, and interactions with other children of various ages—all of which enable children to construct their own knowledge. Teachers facilitate each child's development (knowledge construction) through a carefully planned environment and varied instructional strategies.

Stages of Cognitive Development

3. *Children progress through stages of cognitive development.* Piaget (1976) contends that children's intellectual capabilities are developing in four stages: sensorimotor (ages 0-2); preoperational (ages 2-7); concrete operational (ages 7-11); and formal operational (ages 11-15). A teacher who is knowledgeable of these stages supports and facilitates learning accordingly. For example, a child in the preoperational stage (age 2-7) may

not have attained reversibility of thought: The child is able to add, but unable to reverse his thought to subtract. Or a child may be able to compose a sentence, but may be unable to read it back. Reversibility of thought will come as the child develops cognitively.

Arbitrary Expectations

How a multi-age teacher nurtures this development is key. She does not expect children to accomplish tasks that are beyond their capabilities or current stage of cognitive development because she knows this often puts children at extreme risk of failure. Our graded system disregards this knowledge of child development by continuing to place arbitrary expectations on children that may be beyond their developmental stages. In the multi-age classroom, children are given time to develop cognitively. Their developmental needs, not grade-level curriculum, stand out as the "key defining characteristic of the multiage concept" (Miller 1996, p. 12).

Active Learning

4. *Children learn through active (rather than passive) and meaningful experiences.* Research informs us that children learn when they are actively engaged with their environment and the people around them (Piaget and Inhelder 1969, Piaget 1976, Katz and Chard 1989). In other words, the old adage "a child learns by doing" is still appropriate. For example, if a teacher wants a child to learn how to solve problems, the child must engage in solving an actual problem. And if the teacher wants a child to be social, the child must personally engage in social relationships. All learning should be in a context where the child is an active participant (Stone 1996).

Relevance and Choice

Research also suggests that children understand, learn, and remember best when the experiences are meaningful and relevant (Iran-Nejad, McKeachie, and Berliner 1990), and learning is more meaningful and more efficient when interest is heightened through choice (Barbour and Seefeldt 1993). A successful, effective multi-age classroom seeks to provide an environment that reflects this knowledge of how children learn through the use of centers, projects, and process learning experiences.

Process Approach

5. *Children learn through a process.* Research tells us that children develop intellectual capacities in predictable sequences that are a result of children's active construction of new understandings (Weikart and Schweinhart 1987). In other words, a child's personal construction of knowledge is an ongoing developmental process (Piaget and Inhelder 1969, Piaget 1976). Thus, the teacher of a multi-age classroom chooses a process approach to learning that is child-centered, rather than curriculum-centered. In a curriculum-centered approach, the skills are arbitrarily sequenced regardless of a child's personal construction of knowledge. In the process approach, skills are taught within the context of the process, and they fit the needs of each child. The teacher's role is one of facilitator within the learning process, helping the child become a better reader by reading, writer by writing, and problem solver by solving real problems. The teacher's responsibility is to support the child's own development through active involvement in the learning process (Stone 1995).

Learning Through Play

6. *Children learn through play.* Piaget states that

> children should be able to do their own experimenting and their own research. Teachers, of course, can guide them by providing appropriate materials, but the essential thing is that in order for a child to understand something, he must construct it himself, he must re-invent it for himself. On the other hand, that which we allow him to discover by himself will remain with him visibly, ... for the rest of his life (Piers 1972, p. 27).

Through play, children have the unique opportunity to make and internalize their own discoveries, which will belong them for the rest of their lives (Stone 1993). Bergen believes that "play has been undervalued as a curricular tool by educators and by parents because society has defined the goals of learning, especially school learning, very narrowly. . . . Play, which allows children to choose their learning focus and which fosters a broad range of developmental goals, should be included as an essential learning element. . ." (Bergen 1988, p. 1). Within the cognitive domain, play has been recognized as the highest form of research (Caplan and Caplan 1974). Dansky and Silverman (1973, 1975) conducted experimental studies and found a causal relation between play and creativity; creativity is considered the highest form of problem solving. Play also encourages cognitive flexibility in the solution of problems (Pelligrini 1981.) Socially, play helps children to "decenter" (Fein 1986). Emotionally, play helps children work through conflicting feelings (Fein and Schwartz 1986). And, of course, play provides opportunities for children to develop both fine and gross motor skills (Coleman and Skeen 1985, Corbin 1976).

Wasserman (1992) concludes that play allows children the opportunity to generate new ideas, take risks, avoid the fear of failure, and actively engage their minds and bodies. Play addresses the needs of the whole child, thus multi-age teachers promote play in the learning environment.

Developmental Variance

7. *Children's learning is individual.* Every child is unique in his own progress and development. Bredekamp (1987) notes that each child has his own "individual pattern and timing of growth, as well as individual personality, learning style, and family background" (p. 2). Children also have differing gifts in intelligences (Gardner 1983). In the multi-age classroom, teachers honor and appreciate the variance in development, learning styles, and intelligences. As Connell (1987) indicates, differences are considered natural and normal. The diversity of the multi-age classroom makes it impossible to view children as the same and to hold the same expectations for each child, as is often the case in a graded classroom. Stone (1996) notes that the multi-age concept "frees teachers to see children as individuals, which not only benefits each child, but also benefits the teacher" (p. 12). This freedom releases teachers from the traditional emphasis on teaching the curriculum and allows them to instead focus on teaching children.

These seven aspects of constructivist theory, which are part of the foundation for multi-age education, may play out to a degree in the graded classroom. But, as we've shown, the confines of a graded curriculum and grade-level expectations often conflict with the research on how children learn. The structure of multi-age classrooms, however, allows us to use what we know from research about children's learning.

Social Learning Theory

Social Models

One of the most compelling reasons for deliberately constructing classrooms with children of multiple ages resides in the research on social learning. Vygotsky (1978) developed the theory of the "zone of proximal development" in which a child's level of potential development can be enhanced by adults or more capable peers. Bandura (1977) also found that children acquire behaviors by observing and then imitating social models. In mixed-age settings, older children often become effective models for younger children. We will examine how mixed-age classrooms provide natural social learning environments that support cross-age learning across multiple learning domains. In addition, we will see how both younger and older children benefit from these mixed-age settings.

Scaffolding

Cognitive growth. Meltzer (1991) found that, in the context of social interactions, more capable peers can stimulate a child to use more sophisticated approaches to problem-solving tasks through the process of scaffolding. Stone and Christie (1996) also found that older children in mixed-age groupings led younger children to engage in more and varied literacy experiences.

Cognitive Conflict

In addition, cross-age learning occurs when children of different ages collaborate in learning experiences as they participate in "cognitive conflict" (Piaget 1976, Trudge and Caruso 1988). In cognitive conflict, differences in perspective compel children to explain themselves to one another. Growth occurs when they have to resolve their conflicting points of view. Cognitive conflict leads the less informed member to internalize new understandings (Brown and Palincsar 1986). Yet, both younger and older children in mixed-age social interaction benefit cognitively because they have to think through and articulate their differences (Theilheimer 1993). According to Roopnarine and Johnson (1984), younger children have significant positive interactions with older children. And as older children interact with younger children, they solidify mastery.

Intellectual and Communication Skills

The presence of younger children fosters both the development of intellectual and communication skills (Roopnarine and Johnson 1983; Konner 1972; Whiting and Whiting 1963; Furman, Rahe, and Hartup 1979; Allen and Feldman 1976) while the younger children benefit from observing and imitating the more competent behaviors of older children (Roopnarine and Johnson 1984, Stone and Christie 1996).

Social Skills

Social growth. In the multi-age classroom, older children are more sensitive to the complexity of social interaction when younger children are present (Graziano, French, Brownell, and Hartup 1976). The older children

are more socially active as they try to engage the younger, less socially skilled children in classroom learning. The younger children also benefit because they use more advanced skills to try to interact with older children (Brownell 1990). Brownell (1990) suggests that mixed-age settings are important contexts for young children to acquire and consolidate peer social skills.

Prosocial and Leadership Skills

Prosocial behaviors such as helping, sharing, and taking turns are also more evident in mixed-age groupings (Katz, Evangelou, and Hartman 1990). Children in mixed-age settings learn to nurture and mentor. The presence of younger children encourages the development of care-taking behaviors (Roopnarine and Johnson 1983, Konner 1972, Whiting and Whiting 1963, Furman et al. 1979, Allen and Feldman 1976). Stright and French (1988) found that mixed-age groupings provide better contexts for leadership skills to emerge than same-age groupings because each child has the opportunity to be a leader by virtue of age in multi-age classes. Stright and French (1988) found that "many children do not possess the skills and characteristics that enable them to emerge as leaders in a group of peers. With sufficient age disparity, however, any child can attain leadership status with younger children" (p. 513).

Cooperation

Emotional growth. In the multi-age classroom, the absence of competition for the same grade-level expectations offers a cooperative environment. Children help one another both academically and socially. Mixed-age interactions, through the years in a multi-age classroom, create a family atmosphere in which children enjoy emotional growth and stability.

Cross-Age Learning

As we closely examine the multi-age contexts for cross-age learning, the research shows that children prefer interacting with other children of varied ages rather than children their same age (Ellis, Rogoff, and Cromer 1981; Stone and Christie 1996). Research also suggests that children in three-year multi-age classrooms benefit more from cross-age learning than those in two-year multi-age classrooms (Stone and Christie 1996). In addition, cross-age interactions are beneficial to children of all age levels in the multi-age classroom, not just to the younger children (Roopnarine and Johnson 1984, Stone and Christie 1996).

How Research Guides Practice in the Multi-Age Classroom

All of the research explored thus far guides the major components of multi-age education: structure, environment, curriculum and teaching strategies, and assessment. You will find considerable interplay among these components. Let's begin with looking at the structure of the multi-age classroom.

Multi-Age Structure

Three-Year Spans

Mixed Ages. We know that in multi-age classrooms, children of mixed-ages stay together for several years. From research (Stone and Christie 1996), we find that the age span of three years (rather than two

years) offers greater opportunity for cross-age learning. Stone and Christie found that the older children (second graders) collaborated more with the younger children (kindergartners) in a K–2 multi-age classroom than with the first graders. A two-year range offers cross-age learning, but the three-year span greatly enhances this benefit for mixed-age learning. The structure of mixed-ages heightens opportunities, not only for children's cross-age learning in the academics, but also for children's social skills and prosocial behaviors. Research also documents the benefit of mixed-ages in helping children develop mentoring and leadership skills.

Children vs. Curriculum

From practice, we also find that with a two-year age span, teachers often teach two curriculums. With a three-year age span, however, teachers have to teach the children rather than the curriculum. A three-year span forces teachers to see children as individuals on their own continuum of learning and to seek out appropriate instructional strategies and assessments to accommodate the needs of all the children.

Family of Learners

Several years with the same teacher. Structuring the learning in multiple years with the same teacher allows the teacher to see each child developmentally, to know each child's strengths and needs, and to give each child the "gift of time" to develop. Several years with one teacher also allows the child to enjoy continuous progress, success, and support of a "family of learners." Several years with the same teacher honors the research on giving children time to construct their knowledge, on respecting children's personal construction of knowledge as an ongoing developmental process, and on respecting children's variability in learning rates.

Retention

No retention. Retention, a product of the graded system, is used to help children catch up with the grade-level curriculum. In the multi-age classroom, retention is not part of the structure. Learning in the multi-age classroom is viewed as a developmental process, so retention is not a necessary component. Each child is supported to make successful progress on his own continuum of learning, rather than to meet arbitrary grade-level expectations based on a sequenced curriculum that may be beyond the child's developmental level. Smith and Shepard (1987) suggest that retention is not in children's best interests. Retention can prove emotionally devastating for young children just starting their learning journey. Some children respond to retention as being a factor equal to a divorce or death in the family. Smith and Shepard's research also casts doubt on the effectiveness of retention. The structure of multi-age education supports continual progress and does not require the practice of retention. The curriculum fits the child's needs, rather than making the child fit an established curriculum.

Multi-Age Environment

Planned Environment

An effective multi-age classroom considers the environment an important learning place and tool. Research on how children learn (constructivist learning theory and social learning theory) is strongly reflected in the classroom environment. Stone (1996) emphasizes that the environment is designed for movement, hands-on learning, cooperative

social interaction, cooperative learning experiences, choice, autonomous learning, and enjoyment. The environment is carefully planned by the teacher to facilitate children's learning experiences at their own developmental level while increasing opportunities for cross-age learning.

Centers and Projects

A typical multi-age classroom is designed around a center or project approach. Learning tables and centers are used, not individual desks. Children keep their personal items in cubbies, so the room can be used in many flexible ways. The classroom space supports large-group, small-group, and individual learning activities. Centers are designed to be open-ended, so children can practice their skills and come in to the experiences at their own level of understanding and skill. Centers and projects also integrate the curricular experiences for more holistic learning. Free-choice centers allow children autonomy and responsibility for their own learning. Centers and projects allow children to interact cognitively, socially and emotionally. The learning environment should honor research on how children (1) learn through active, meaningful experiences; (2) construct their own knowledge of the world through hands-on experiences and personal interactions with others; (3) learn through cross-age social interaction ("zone of proximal development," "cognitive conflict," and imitation); (4) learn through play; and (5) show their interest in learning by having choice. See figures 1, 2, and 3 for examples.

Multi-Age Curriculum and Teaching Strategies

Process Strategies

Because of the diversity of learners in a multi-age classroom, the curriculum and instruction must reflect a child-centered approach rather than curriculum-centered approach. It is not appropriate for a teacher to use just one curriculum, and it is an impossible task to teach several curriculums. Within the process approach, the teacher is able to facilitate each child's successful growth on his own continuum of learning. Children learn to read by reading, write by writing, and socialize by having opportunities to be social. Skills are taught within the meaningful context of the process (Stone 1994/95), thus significantly affecting the learning of each child. The teacher comes alongside each child to help her become a better reader, writer, and problem solver. Shared reading, modeled writing, writer's workshop, literature circles, guided reading, developmental math, guided math, discovery science, and guided experiences in the content areas are process strategies that multi-age teachers use both in whole- and small-group instructional times.

Real and Meaningful Experience

Experiential learning centers and projects also allow children to practice and build their knowledge and skills in the context of real and meaningful experiences. Opportunities for cross-age learning abound not only through the centers and projects, but also during whole- and small-group instructional times.

Range of Difficulty

In addition, multi-age teachers open up the curriculum for the mixed-age learners exposing all the students to much more material, covering a broader range of difficulty than a same-age classroom. The students come into the curriculum at precisely their own level of

FIGURE 1
Multiage Environment 1

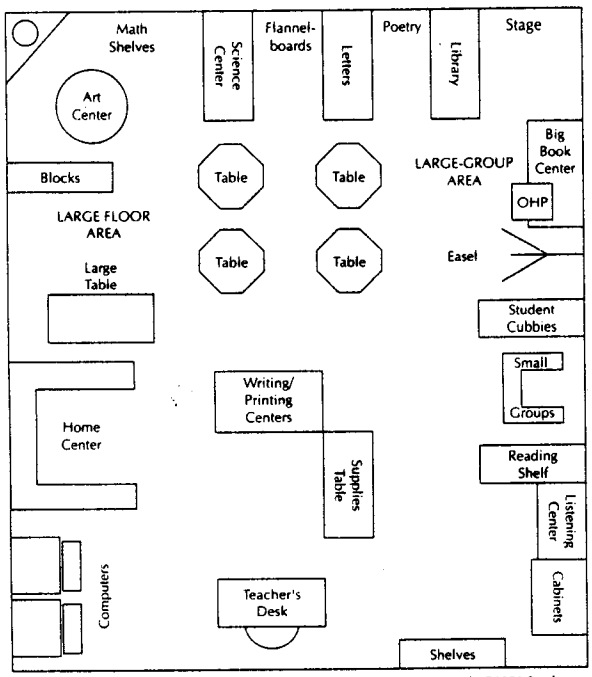


FIGURE 2
Multiage Environment 2

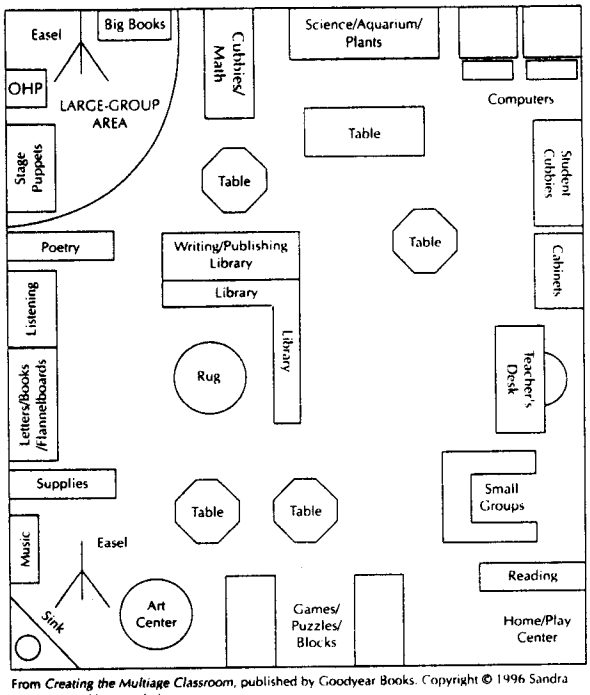
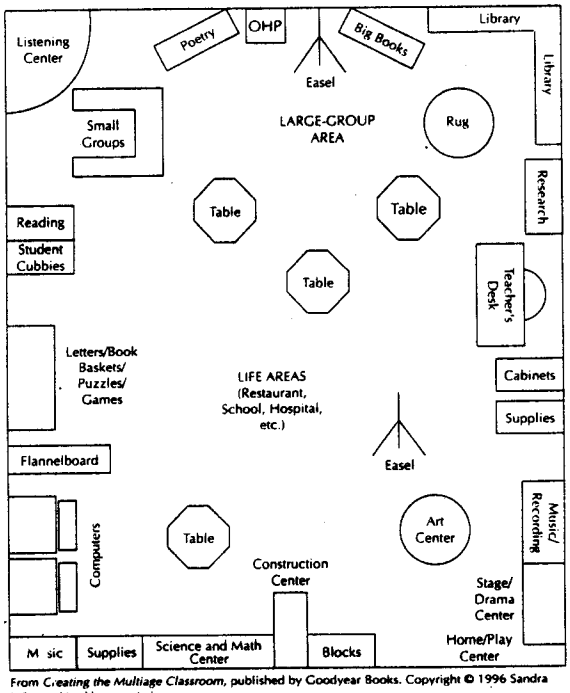


FIGURE 3
Multiage Environment 3



understanding. Brouchard (1991) notes that students in multi-age situations can "'plug into' curriculum at the appropriate level and yet be exposed to opportunities for review as well as for acceleration" (p. 30).

Integrated Curriculum

Multi-age teachers use an integrated curriculum model, so children read, write, and solve problems across the curriculum. Both the curriculum and strategies reflect the research on how a child (1) learns as a whole person; (2) progresses through stages of cognitive development; (3) learns through active, meaningful experiences; (4) constructs his own knowledge of the world; (5) learns as an on-going developmental process; (6) learns as an individual; and (7) learns through social interaction (cross-age learning). See Figures 4, 5, and 6 for examples of instructional days in the multi-age classroom.

FIGURE 4
Instructional Day—Model 1

(Based on New Zealand Literacy Model Approach)

A.M.

- **Opening (large group)**
  Calendar, news from home, shared book\poem.
- **Guided Reading Groups/Centers**
  Small Guided Reading groups meet with teacher while the rest of the class works at centers that focus on literacy.
  Centers: Big Book, Listening, Writing, Letters, Notes, Printing, Flannelboard, Drama, Home, Play, Science, Social Studies, OHP (Overhead Projector), Art, Music, Computer, Poetry, Library, Read-the-Walls.
- **Recess**
- **Modeled Writing (large group)**
  Journals and conferencing.

P.M.

- **Read to Children (large group)**
- **Independent Reading**
  Children read books from the library or book baskets. Reading may be individual or social. Social reading occurs in pairs and small groups.
- **Guided Math/Centers**
  Teacher meets with small groups of children based on need while the rest of the class works at centes with a focus on math, science, and social studies.
  Centers: Geoboards, tangrmas, puzzles, blocks, Lego®, math games, flannelboard, manipulatives, and open-ended math, science and social studies activities.
- **Sharing Time**
  Closing activies.

Multi-Age Assessment

Portfolio Assessment

In the multi-age classroom, assessment is made for the benefit of the children and not to label, sort, or rank children as is typical in the graded classroom. We know, from research, that children have their own time table for development, personally construct their own knowledge, learn as an ongoing developmental process, learn through active, meaningful experiences and social interaction. Assessment, then, documents each

FIGURE 5
Instructional Day—Model 2

A.M.

- **Opening (large group)**
  Daily news, shared book/poem, community time.
- **Independent Reading/Centers**
  Children monitor own progress with Reading Logs. After children complete reading, they choose literacy-based centers. Teacher works with individuals or small groups based on need.
- **Literature Circles (small groups)**
  Children work in small groups. Teacher may direct one group a day.
- **Recess**
- **Writer's Workshop/Modeled Writing (large groups)**

P.M.

- **Read to Children (large group)**
- **Guided Math/Centers**
  Teacher meets with small groups of students based on need while the rest of the class works at math, science, and social studies centers.
- **Project Time**
  Children plan and implement project plans based on topic or theme.
- **Sharing Time**
  Author's chair, Readers Theater, project presentations.

FIGURE 6
Instructional Day—Model 3

A.M.

- **Opening (large group)**
  Daily news, shared book/poem, community time.
- **Project Time**
  Children plan projects based on topic or theme, usually focused on science, social studies, or literature. Children are involved in all aspects of the curriculum during project time (e.g., reading, researching, computing, solving problems, designing, drawing, playing within topic, writing, composing). Most projects are accomplished through small, cooperative groups.
- **Recess**
- **Literature Circles/Guided Reading Groups/Centers**
  Children work in small groups. Teacher may direct several groups a day. Children also engage at literacy-based centers.

P.M.

- **Read to Children (large group)**
- **Writer's Workshop/Modeled Writing**
  Journals and conferencing.
- **Guided Math/Centers**
  Teacher meets with small groups of students based on need while the rest of the class works at math, science, and social studies centers.
- **Sharing Time**
  Project presentations, author's chair, Readers Theater.

Self-Esteem and Motivation

child's learning growth and development within the process and contexts of the actual learning. Portfolio assessment is the best tool for mixed-age classrooms. It allows the teacher not only to document each child's growth on his own continuum of learning, but also to use the knowledge from the assessment to support and guide instruction. In addition, the portfolio communicates each child's successful growth to both the child and his parents (Stone 1995). Research shows that children who feel successful about their academic and social competencies do better in school, develop a positive self-image and high self-esteem. Success also motivates children to keep on learning. Portfolio assessment comes alongside the learning process in multi-age classrooms, allows for the variability in diverse learners, and documents what children can do, respecting each growth step so each child can find success.

Letter Grades

Typically, the portfolio is used along with a narrative report card or a report card without letter grades. Letter grades are often labels that report a child's competency within a sequenced, graded curriculum. In the multi-age classroom, however, children are evaluated on their own achievements and potential (Anderson and Pavan 1993), rather than in comparison to norms or grade-level expectations. Grades hold no value in multi-age education. Figures 7 and 8 show examples of a multi-age narrative report card that is part of a child's portfolio.

Conclusion

Philosophical Foundations

Of the multi-age classrooms schools are implementing throughout the United States, many are grounded in research on how children learn and on multi-age philosophical foundations. Other multi-age classrooms are simply a means of managing few students in several grades. These classes are often combination classes. Two grades are taught separately, using traditional graded curriculum—with few opportunities for cross-age learning experiences, and traditional graded report cards. The combination class fits in with the graded system. If a classroom with two or more grades follows the graded model, then it should be called a "combination class."

Choices

Educators who wish to venture into effective multi-age education must make critical choices about the structure, environment, curriculum and strategies, and assessment that are compatible with the research on how children learn and on multi-age philosophy. Don't try to mix a graded philosophy with a multi-age philosophy. The graded system has many holdovers from the factory model of managing children. On the other hand, the multi-age philosophy has strong foundations in research that significantly impact multi-age practices, practices that are designed to benefit children, rather than simply manage them. The multi-age concept promotes "fitting the schools to the children" rather than "fitting the children to the schools." The multi-age classroom is more than a simple group of mixed-age children staying with the same teacher for several years. Let the research on how children learn guide the practices in your multi-age classroom, and you will discover how successful and beneficial it can be for the well-being of your children.

FIGURE 7
Student Progress

READING

Mary has developed into a Fluent Reader: She uses strategies that good readers use. She has excellent comprehension skills as well. Mary is always prepared for Literature Circle. She often leads the study. Mary is also reading different kinds of books this year. She completes her Literature Log with great detail, which also shows a high level of understanding. Mary is becoming a dedicated, lifelong reader. I am thrilled with her progress.

WRITING

Mary eagerly participates in Writers' Workshops. She has published several books this semester. Her books continue to be of high quality. She is using more writing genres and becoming quite competent in establishing stories with a beginning, middle, and end. During Modeled Writing, she is learning to use adjectives and adverbs effectively. She is working on writing more complex sentences in her learning journal.

MATHEMATICS

Mary continues to develop in her math skills. She has mastered ordering numbers to 1,000 and place value up to five digits. She continues to develop in her skills of adding three-digit numbers. Problem solving is challenging for her, but she is a risk-taker, and does not give up trying. I see her mastering word problems very soon. Mary likes math and uses it effectively at centers and with projects.

SCIENCE

Mary has enjoyed our science centers this quarter. She is using science process skills effectively. Her skills in observing and communicating are particularly good. She completed a science experiment on soil composition. She is improving in her ability to hypothesize and control variables.

FIGURE 8
Student Progress Report

SOCIAL STUDIES

Mary has enjoyed studying geology this quarter. She and her classmates completed their project on gems and presented it to the class. Their research information was eceptionally well done. Mary contributed to this project by securing books from the library and writing several key reports. She was enthusiastic and creative and demonstrated strong leadership skills. She continually improves in locating and organizing information. I am particularly pleased with her interpretation of information.

SOCIAL GROWTH

Mary is a kind and caring person. When working at centers or in small, cooperative groups during projects, Mary is exceptionally good at mentoring younger children. She helps them find answers and solve problems for themselves without giving them the answers. The opportunity to mentor has helped Mary gain confidence in herself. Mary is becoming a quite competent leader. She also demonstrates excellent social skills. She is well liked by both younger and older classmates.

CREATIVE ARTS

Mary is demonstrating strong aesthetic awareness. She enjoys creating, discovering, and exploring with art, music, movement, and play. She created an outstanding painting for our theme on plants. She also demonstrates high imaginative abilities in our play center. She initiates elaborate stories and skillfully involves the other children. Music is a new area that Mary is exploring. I see her integrating music and movement in the near future.

Resources

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