

Reclaiming Kindergarten: Making Kindergarten Less Harmful to Boys

Leonard Sax
Poolesville, Maryland

The kindergarten curriculum has undergone fundamental change over the past 50 years. The shift in curriculum in favor of reading preparedness has had the effect of emphasizing boys' weaknesses and girls' strengths. Two changes are proposed. First, alternative kindergartens emphasizing group activities and nonverbal skills must be established. Second, boys must be encouraged to enter such a kindergarten when they turn 5 years old. After 1 year of alternative kindergarten, the boy would enter contemporary kindergarten at age 6. Girls would continue to enter kindergarten at age 5. Most boys would therefore enter first grade at age 7, most girls at age 6. Substantial evidence suggests that such a change would have many benefits, particularly for boys.

Adults think it wise to focus children's education on what adults need to know, without considering what children are in a position to learn. . . . You should begin, rather, by studying your pupils more carefully. (Rousseau, 1938, p. 2)

Jean Jacques Rousseau (1712–1778) considered it a waste of time for children to read. "Reading is the plague of childhood. . . . Books are good only for learning to babble about what one does not know. I am convinced that in matters of observation, one must not read, one must see" (Rousseau, 1938, pp. 115, 575). Rousseau believed that books should be avoided completely at least until age 12, and used only sparingly thereafter. Children must first learn to develop their own minds, free of adult influence.

Swiss educator Johann Heinrich Pestalozzi (1746–1827) was the first to attempt a serious implementation of Rousseau's ideas. Pestalozzi's school, established in Frankfurt, Germany, in 1804, featured no lectures, almost no books, and—an extraordinary innovation—no flogging of laggard students. The trademark of Pestalozzi's method was the long walk through the countryside. Pestalozzi used these nature walks to teach botany, geology, and zoology. He shared Rousseau's conviction that education must be rooted in firsthand experience—such as the nature walks—and not in reading the reports of others (Gutek, 1968).

Friedrich Wilhelm August Froebel (1782–1852) worked as a teacher in Pestalozzi's school from 1805 to 1808. At that time, children less than 7 years of age were believed to be too young for school. Indeed, in

many German states it was *illegal* for children younger than 7 to attend any school. Froebel became interested in applying the ideas of Rousseau and Pestalozzi to the previously unthinkable realm of education for children ages 3 to 6.

In 1837, Froebel opened his first school specifically for children ages 3 to 6 in the Thuringian town of Blankenburg. In 1839, Froebel coined the word *kindergarten* to describe his new school. His neologism was deliberately ambiguous: the German word can mean either "children's garden" or "garden of children." "Children's garden" was appropriate for Froebel's kindergarten, because each child was assigned a small garden plot to cultivate under the teacher's supervision. There was also a larger plot that all the children worked together. This communal plot was organized with legumes in one corner, cereal grains in another, oil plants in another, and so forth, enabling the child to learn these categories firsthand (Brosterman, 1997). But *kindergarten* also can mean "garden of children" in the Rousseauvian sense of a Garden of Eden: a pure, nourishing place in which each child might flourish.

By the 1860s, Froebel's kindergarten had spread throughout Europe and into North America. Even before the kindergarten movement was firmly established in the United States, however, some American innovators tried to introduce preliteracy skills into the kindergarten. These educators brought on themselves the wrath of Elizabeth Palmer Peabody, the most prominent leader of the kindergarten movement in the United States from the 1860s until her death in 1894. Peabody denounced these "false kindergartens [that] cater to adults who want to see young children learn to read and write and study school subjects at an early age, rather than doing what is good for them—playing" (Beatty, 1995, pp. 60–61). Peabody defined

Correspondence concerning this article should be addressed to Leonard Sax, P.O. Box 108, Poolesville, Maryland 20837. Electronic mail may be sent to leonardsax@prodigy.net.

true kindergarten as “a company of children under seven years old, who do *not* learn to read, write, and cipher; nor to study objects unconnected with their own conscious life” (Beatty, 1995, p. 61).

Throughout the 1900s, there was an ongoing struggle between, on the one hand, educators who advocated a modified Froebelian kindergarten—emphasizing group activities such as music-making with cymbals and tambourines, modeling with clay, and outdoor games—and advocates of a math- and reading-preparedness curriculum. The launch of Sputnik by the Soviet Union in 1957 shifted the struggle within the American educational community decisively in favor of math skills and reading preparedness; the debate moved further still in that direction with the initiation of the Head Start program in the 1960s and with the publication of the federal report entitled “A Nation at Risk” in 1983 (Beatty, 1995; Ohanian, 1999; Sacks, 1999). In the past three decades, the kindergarten curriculum in the United States has swung so far in favor of reading preparedness and math skills that today’s American kindergarten is nearly the opposite of what Froebel conceived. It emphasizes that Froebel banned (books, arithmetic, and literacy skills), and gives short shrift to the play activities Froebel considered essential.

In a modern American kindergarten, the focus is on paper-and-pencil exercises, reading, and arithmetic drills, all of which would have been anathema to Froebel and Pestalozzi. The first-grade curriculum has been gradually but inexorably “pushed down” into kindergarten (Freeman & Hatch, 1989), prompting one journalist to suggest that the term *kinder grind* be used in place of *kindergarten* (Dickinson, 1999). National politicians compete in terms of who will propose the earliest possible preliteracy programs. One American presidential candidate recently boasted that he will insist on all *three*-year-olds knowing the alphabet before they turn age 4 (Broder, 2000). Books are prominently featured in today’s kindergarten.

In this article I argue, first, that these changes in the kindergarten curriculum have had the effect of emphasizing boys’ weaknesses and girls’ strengths. Five-year-old girls are more likely than 5-year-old boys to be capable of mastering a curriculum designed to accelerate the child’s reading and math skills. Thus, the girls—who are already, on average, outperforming the boys at this age in skills relevant to paper-and-pencil exercises—have gained a still greater advantage from the change in the kindergarten curriculum. Boys, on the other hand, now experience a greater sense of scholastic incompetence,

and at an earlier age. As a result, many boys enter first grade with a poor academic self-concept already established (Chapman, Lambourne, & Silva, 1990). Once he establishes this poor self-concept, the boy’s entire outlook on the school experience changes (Skinner, Zimmer-Gembeck, & Connell, 1998). School becomes a burden to be endured rather than a challenge to be enjoyed. I review evidence that this negative self-concept leads the boy into an external attributional style (i.e., into the belief that nothing he does in school has any contingent beneficial result).

Second, I propose the adoption of an alternative kindergarten curriculum, one more suited developmentally to a 5-year-old boy. The alternative curriculum is a two-year program. The 5-year-old boy, instead of beginning contemporary kindergarten, would instead enroll in an alternative kindergarten in which fine motor skills, math, and preliteracy are deliberately neglected in favor of nonliterary group activities utilizing gross motor skills—singing, dancing, sports, and so forth. This kindergarten would be organized into small groups, with the emphasis on group accomplishments and cooperation rather than on individual performance. Such a change would be designed to increase the likelihood that most boys’ introduction to the school setting would be a positively reinforcing and socializing experience, rather than a series of alienating failures and humiliations. After completing one year of this group-oriented curriculum, the 6-year-old boy would then enter today’s kindergarten—with its emphasis on pre-reading skills—along with the 5-year-old girl. After completing the two-year curriculum—one year of alternative kindergarten followed by one year of modern kindergarten—the 7-year-old boy would join the 6-year-old girl in first grade.

Considerable data already exist to suggest that this approach would preempt the harmful effects of today’s kindergarten on boys. I review these data, consider objections, and make suggestions for further research.

Sex Differences in Neuroanatomy, Neurophysiology, Sensory Function, and Reading Skills

My proposal for a delay, from age 5 to age 6, in the age at which the modal boy enters American kindergarten is grounded in the finding that girls mature faster than boys. Sex differences in maturation are apparent on every level of analysis, from the neurophysiological level (e.g., cerebral blood flow), to the level of sensory function (e.g., auditory acuity), to higher cognitive functions (language acquisition, reading skills, etc.). A developmentally appropriate

curriculum should recognize and accommodate these substantial sex differences. To understand this argument, however, it is important to have some sense of the magnitude of these differences and of the robust character of these differences across cultures.

Sex Differences in Neuroanatomy and Neurophysiology

Neuroanatomical differences between boys and girls can be considered in two categories: first, differences in the speed of maturation of brain structures (with girls' brains consistently more mature than boys'); second, neuroanatomical and neurophysiological sex differences that persist into adulthood.

Numerous reports have now documented the speedier maturation of the human female brain. Benes, Turtle, Khan, and Farol (1994) found that the brains of human females are, on average, more mature than the brains of human males, from age 6 through age 29. (Benes et al. defined maturity in this study by degree of myelination.) Although the magnitude of the girls' "head start" in brain maturity was most pronounced at age 6, the boys did not completely "catch up" until 29 years of age. Similarly, Caviness, Kennedy, Richelme, Rademacher, and Filipek (1996) found that the subcortical gray matter structures of the forebrain are already at their adult volumes in the 11-year-old girl, but the same structures in the male child do not approximate adult volumes until about 17 years of age. Likewise, Anokhin, Lutzenberger, Nikolaev, and Birbaumer (2000), using electrophysiologic measures of brain maturity to compare brain development in boys and girls from age 7 through age 17, found that the girls' brains were significantly more mature ($p < 0.05$) in all age groups. In this study, the magnitude of the difference in maturity in favor of girls actually increased somewhat from age 7 to age 17. Waber (1976) appears to have been the first to argue that girls' superiority in verbal skills reflects a more rapid maturation of the cerebral cortex in girls compared with boys.

Recent advances in technology have made it possible to identify substantial sex differences in the gross and microscopic anatomy of the adult brain, although the precise age at which these differences appear has not yet been determined. For example, Witelson, Glezer, and Kigar (1995) used a quantitative cytological analysis to determine that there is an 11% greater packing density of neocortical neurons in the adult female brain than in the male brain. The variance in this study was so small that although the mean difference was only 11%, there was no overlap in packing density scores between the sexes.

Some brain structures that are prominent in females, such as the massa intermedia of the thalamus, are smaller or even entirely absent in males. Allen and Gorski (1991) compared the massa intermedia in females with the same structure in males (including only those participants who had a massa intermedia). They found that the massa intermedia was, on average, 53% larger in the females, despite the fact that the male brains were on average 8% larger than the female brains. These investigators also found that the anterior commissure—which connects the right and left temporal lobes with one another—was, on average, 12% larger in the female brains. Although the exact significance of these findings is not yet clear, the important point for the present purpose is that there are substantial sex differences in neuroanatomy, and that these differences are present in childhood.

Besides sex differences in neuroanatomy, investigators have also identified substantial sex differences in the functional organization of the brain. Among the best known of these differences is that which was documented by the group led by Bennett and Sally Shaywitz at the Yale University School of Medicine. These investigators found that language functions appear to be organized in a qualitatively different fashion in men compared with women. Using functional magnetic resonance imaging, they reported that in right-handed adult men, the area of the brain most activated by phonological and semantic tasks is narrowly localized to the left inferior frontal gyrus, whereas "in females the pattern of activation is very different, engaging more diffuse neural systems that involve both the left and right inferior frontal gyrus" (Shaywitz et al., 1995, p. 607).

Gur and Gur (1990) reported a substantial disparity in regional cerebral blood flow between male and female participants. They consistently found that women have higher rates of cerebral blood flow than men, despite the fact that the male brain is, on average, 8% to 9% larger than the female brain. These differences were statistically significant ($p < 0.001$). The differences were largest in childhood and declined throughout adulthood, but the men did not "catch up" to the women until age 60.

Women also have somewhat better hearing than men do, on average, across a variety of auditory modalities (Velle, 1987). Corso (1959) found that girls and women hear pure tones at lower amplitudes than boys and men. For example, the mean threshold for a 2,000 Hz tone was 8.9 dB for male participants and 5.7 dB for female participants. In other words, the average girl heard a 2,000 Hz tone that was less than half as loud as the threshold 2,000 Hz tone heard by the average boy.

Elliot (1971) found that for any particular mid-range sound, girls experienced that sound as being about twice as loud as a boy experienced the same sound. To put Elliot's finding another way, the volume of an auditory stimulus must be doubled for a boy, if the stimulus is to be as salient to the boy as it is to the girl.

Sex differences in auditory function can be detected in babies less than 6 months old. Watson (1969) found that female babies 12–14 weeks of age were more aroused by an auditory stimulus than were male babies of the same age exposed to the same stimulus. Morlet et al. (1995) showed that the peripheral auditory system in the human female infant is significantly more advanced in development than in the male infant.

Sex Differences in Reading and Writing Skills

Girls' superiority in verbal skills becomes apparent at an early age. As soon as children begin to speak, girls articulate earlier and better than boys; girls' sentences also are longer and syntactically more complex (Maccoby, 1966). In reviewing studies of verbal fluency in childhood, Vogel (1990) concluded that there is "consensus that 2-year-old girls . . . are more verbally fluent than their male age-mates" (p. 45). Girls maintain that edge throughout the school years. They outperform boys in tests of verbal recall from early childhood through secondary school (e.g., Duggan, 1950; McGuinness, Olson, & Chapman, 1990).

Girls' superior verbal abilities appear to be independent of culture and race, to the extent that this issue has been examined. Owen and Lynn (1993) studied 16-year-old Blacks, Indians, and Whites in South Africa. In all three race categories, girls outperformed boys in verbal tasks. The magnitude of the difference was nearly identical across races. The authors concluded that "sex differences for the various tests among black, Indian and white 16-year-olds in South Africa are in general consistent among the three groups and also with those obtained in the United States" (p. 560).

Mann, Sasanuma, Sakuma, and Masaki (1990) compared Japanese high school students in Tokyo with American high school students in Miami, Florida. The Japanese high school was segregated by sex; the American high school was coeducational. They tested students on story recall and verbal fluency (all tests were prepared by native speakers of the respective languages). The girls outperformed the boys by a large margin: on the story recall test, $F(1, 289) = 39.78, p < 0.0001$; and on the verbal

fluency test, $F(1, 290) = 14.01, p < 0.0001$. The extent of female superiority was constant across the two countries on story recall (i.e., there was no interaction between sex and country). For verbal fluency, there was a small interaction between sex and country: The size of the sex difference was somewhat larger in Tokyo than it was in Miami.

Van Goozen, Cohen-Kettenis, Gooren, Frijda, and Van de Poll (1995) studied 35 women transsexuals in Amsterdam who were receiving large doses of testosterone in preparation for sex-change surgery. These investigators measured the visuospatial and verbal fluency skills of these female candidates for sex-change surgery before and after receiving testosterone. Visuospatial skills improved after the testosterone treatment, but verbal fluency skills declined significantly.

Hedges and Nowell (1995) reviewed studies of verbal ability administered nationwide in the United States between 1960 and 1992. In tests of verbal ability,

females performed substantially better than males in every year. Although average sex differences in mathematics and science scores [favoring boys] appear to have narrowed somewhat over time, sex differences in reading and writing scores [favoring girls] have not. . . . The large sex differences in writing ability suggested by the National Assessment of Educational Progress trend data are alarming, particularly because these differences were found on assessments that used actual writing samples. The data imply that males are, on average, at a rather profound disadvantage in the performance of this basic skill. (pp. 44, 45)

In a review of the literature, Halpern (1997) found that although "girls get better grades [than boys do] in every subject in school" (p. 1097; emphasis added), the difference is most apparent in subjects such as English and less pronounced in math and science.

In surveying the literature on learning disability, Finucci and Childs (1981) found that the male-to-female ratio among children classified as learning-disabled ranged from a low of 3:1 to a high of 15:1. Shaywitz et al. (1991) suggested that the overrepresentation of boys among learning-disabled children is an artifact of the slower rate of maturation of boys. If the brain of the average 8-year-old boy is functionally equivalent to that of a 6-year-old girl, but 8-year-old boys are tested alongside 8-year-old girls, then the boy will be more likely than the girl to score at the lower end of the distribution of reading ability, even in the absence of any qualitative underlying deficit.

Historical Overview

If sex differences are as significant as I have suggested, one should find that they are robust enough to be found wherever one looks for them, even during periods when girls were actively discouraged from learning. The first effort in America to measure performance of girls and boys on the same standardized examinations appears to have taken place among high school students in Boston in 1826, one year after the founding there of the first American high school for girls. The 133 girls in the girls' school had only one teacher. The city spent three times as much per pupil on the boys as it did on the girls. Nevertheless, after the improvised girls' high school had been in existence for just one year, meeting in crowded temporary quarters, the girls still outperformed the boys on citywide examinations. This finding promptly led the mayor, Josiah Quincy, to order the girls' school closed. There was no more high school education for girls in Boston until 1852 (Tyack & Hansot, 1990, pp. 126–128).

The widespread introduction of secondary education for girls in the years after the Civil War led to a recognition among educators that girls were outperforming boys, particularly in literary skills. In 1873, educators in New York City found that 51% of grammar school girls received a grade of *excellent* in reading, compared with only 21% of the boys (Tyack & Hansot, 1990, p. 102). Two educators commented in 1900 that, "if we are not to have a comparatively ignorant male proletariat opposed to a female aristocracy, it is time to pause and devise ways and means for getting more of our boys to attend high school" and do well there (Tyack & Hansot, 1990, p. 174).

In the 1890s, a survey of failure rates by sex in Indiana cities and rural schools concluded that "the boys are much less successful than the girls . . . in practically all instances the per cent failures and also the per cent of conditions is noticeably higher for the boys than for the girls. In many cases it is more than double" (Tyack & Hansot, 1990, p. 142). Nineteenth-century educators consistently found "that girls learned to read earlier, won higher marks, served more frequently as class valedictorians, and created fewer disciplinary problems than boys" (Tyack & Hansot, 1990, p. 171). A Chicago high school principal reported in 1906 that

20 percent of the girls but only 2 percent of the boys held a grade average of 90 or better. Coeducation might have social advantages, he admitted, but academically it hurt the boys during adolescence. One reason was that boys were "one to two years less mature than the girls of the same age, and so unable to

approach the work with the same degree of seriousness and willpower." (Tyack & Hansot, 1990, p. 179; emphasis added)

In recent years, as the superior performance of girls over boys has become more obvious at higher levels of achievement, some educators have begun to express concern about the decline in male college enrollment. In 1950, 70% of college students were men; by 1970, that figure was down to 58% (Solomon, 1985). Judy Mohraz, president of Goucher College, recently warned that the proportion of male graduates from four-year colleges continues to decline. Today, Mohraz reports, only 44% of college graduates are men. If present trends continue, Mohraz (2000) warned, "the last man to graduate from college will receive his baccalaureate in the year 2067" (p. B7).

In 1995, the United States Department of Education (1995) reported that "the gap in reading proficiency between males and females [favoring females] is roughly equivalent to about one and a half years of schooling" (p. 13). The gap shows up early and remains more or less constant throughout the school years, at least through 12th grade. In a more recent report from the Department of Education, researchers found that the gap in *writing* ability may be closer to three years:

Females have consistently outperformed males in writing achievement at the 4th, 8th, and 11th-grade levels between 1988 and 1996. Differences in male and female writing achievement were *relatively large*. The writing scores of female 8th-graders were comparable with those of 11th-grade males. (U.S. Department of Education, 2000, p. 18)

An Alternative Curriculum for 5-Year-Old Boys

Educators agree that school curricula should be *developmentally appropriate*, although they do not always agree what this phrase means. Nevertheless, the consensus among professional educators remains that all children—regardless of gender—should enter kindergarten at the same chronological age. The school should then individualize services to match each child's needs after entry (e.g., Walmsley & Walmsley, 1996).

However, if one understands that the average 5-year-old boy is performing at a level of verbal skill that is, on average, at least one year behind the average 5-year-old girl, then it becomes clear that individualizing services to match each child's needs after entry creates extraordinary demands on the educator. There is considerable evidence that what is

actually happening to boys who cannot keep up is that they are sent to the family doctor's office to get a prescription for Ritalin, or they are placed in a remedial category, or both (Pollack, 1998; Vigue, 2000). LeFever, Dawson, and Morrow (1999) recently reported that in one Virginia city, an astonishing 63% of young-for-grade students were taking Ritalin at school. In this city, young-for-grade students were 21 times more likely to be taking Ritalin than students who were average-age-for-grade (95% confidence interval, 17.9 to 24.3).

I propose two corrective measures. First, delay the entry of boys into contemporary American kindergarten until age 6, while continuing to admit girls to kindergarten at age 5. Second, provide an alternative curriculum for 5-year-old boys, one more suitable to their developmental stage.

Delay

Simply delaying a boy's entry into contemporary kindergarten until age 6 would have substantial benefits. The 6-year-old boy, whose brain development and verbal abilities are on average more on par with the 5-year-old girl, would be better able to keep up with the 5-year-old girl than the average 5-year-old boy is. There is already evidence that boys who are slightly older than average when they begin kindergarten do better than boys who are slightly younger than average. Crosser (1991) found that males with summer birth dates (who would therefore be younger than average if they entered kindergarten at age 5) tend to do better academically if their entrance to kindergarten is postponed by one year. In Crosser's study, *advantage* was defined as improved reading ability as measured when the child reached fifth grade. Boys who were older when they entered kindergarten scored significantly higher than younger males in total reading subscores measured when the children reached fifth grade ($p < 0.01$). In this study, Crosser found that boys who postponed entrance to kindergarten by one year had a particular advantage in reading scores as measured when they reached fifth grade. These findings are in agreement with other studies demonstrating or suggesting that boys, especially younger boys, benefit if their entrance to kindergarten is delayed by one year (Ilg & Ames, 1965; Langer, Kalk, & Searle, 1984; Maddux, 1980). Breznitz and Teltsch (1989), studying children in Haifa, Israel, found that the magnitude of the difference between the youngest and oldest participants actually increased over the years; the older participants' advantage was more apparent in fourth grade than it had been in first grade.

Other investigators, however, have argued that the benefits of delayed entrance to kindergarten are small. For example, although Cameron and Wilson (1990) found that children whose entrance to kindergarten was delayed by one year did score significantly better on tests of reading in fourth grade than did their younger colleagues, these investigators pointed out that the effect, although statistically significant, was not large, $F(3,182) = 4.89, p < 0.05$. Furthermore, in this small study ($N = 332$), older children were no less likely to be retained in grade later in their academic career than were younger children. Cameron and Wilson concluded that students "did not appear to gain competitive advantage in achievement as a result of delaying entry to school" (p. 262).

May, Kundert, and Brent (1995) likewise insisted that there is little benefit to be derived from "delayed entry or other extra-year programs . . . [which, they believe], should not be used as an approach to attempt to reduce school failure. Children should not have to give up one or more years of their life to accommodate the schools; rather, it is the responsibility of the schools to meet the children's needs" (p. 293). However, the data actually reported by May et al. are not consonant with this position. Those data actually demonstrate a substantially *lower* rate of subsequent school retention among children whose entry to kindergarten was delayed by one year. Specifically, the rate of subsequent in-grade retention for delayed-entry students was 6%, or less than half the rate of subsequent retention for children who entered kindergarten at age 5 (13%). May et al. accounted for this finding by suggesting that "teachers are more reluctant to retain a student who is already older than the others in the grade" (p. 291). (May et al. did not comment on their finding that among those children who were both delayed-entry *and* later retained in-grade, 82% were boys.) Because May et al. did not find a significant superiority in subsequent school performance among delayed-entry children, they concluded that delaying entry to kindergarten is of no value. However, this conclusion is defensible only if one assumes that delayed-entry students are a random sample of the student population. Careful review of the data presented by May et al. suggests that this assumption is not warranted: Whereas only 7% of the general district population received special education services, 18% of the delayed-entry students received special education services. This disparity strongly suggests that students whose entry to kindergarten was delayed were delayed because they already had been identified as being lower-aptitude students. This possibility constitutes a major source of bias in stud-

ies that attempt to determine whether delayed entry to kindergarten is helpful or harmful. The decision to delay a child's entrance to kindergarten is not random; it is likely that less capable students will be over-represented in the delayed-entry group.

An Alternative Curriculum

If a boy's entry into contemporary kindergarten is deferred until he is 6 years old, what is the best use that could be made of his 5-year-old year?

From what is known of the abilities of the typical 5-year-old boy, it seems reasonable to posit that the ideal alternative would (a) provide scope for development of the child's motor and sensory abilities; (b) encourage and guide development of the child's social and interactive skills; and (c) not dwell on developmentally inappropriate skills, such as reading and writing. Little active research is being done in North America on alternative kindergartens that meet these criteria. However, there is currently very active interest in Europe in developing just this sort of kindergarten. The movement is most popular in Germany, Austria, and German-speaking Switzerland in kindergartens called *Waldkindergarten* ("forest kindergarten"). Variations such as *Wandergruppe* (hiking groups) and *SCHUB* (an acronym for *Schule auf dem Bauernhof*, "school on the farm") are also increasingly popular.

Organizers of the *Waldkindergarten* movement generally agree that a *Waldkindergarten* must meet at least three criteria: no classroom, no books, and no manufactured toys (Miklitz, 2000). These kindergartens truly have no classrooms. The children spend all their time outdoors, even in rain and snow. Critics often ask what happens on days in which the weather is bad. The popular slogan offered in response is, *Es gibt kein schlechtes Wetter, nur ungeeignete Kleidung*: "There's no such thing as bad weather, only unsuitable clothes."

There are no books. Organizers of *Waldkindergarten*, following the position set forth by Rousseau more than 200 years ago, argue that a child cannot enjoy a book about a river or a mountain if he has never actually climbed a mountain or looked for tadpoles in a river.

There are also no toys. The children make or invent their own toys every day. A stick, a hole in the ground, and a child's imagination can make for a dramatic game or narrative, particularly if the children are led by an inspired teacher.

A typical day may consist of a hike through the woods organized around a particular theme—for instance, how trees grow. Children look for acorns.

Once a few acorns have been found, the instructor explains the different parts of the acorn. Then the children look for saplings. The instructor then shows how the mature tree produces acorns. Publishers have recently released a variety of workbooks to guide teachers in leading these outdoor activities (e.g., Michael-Hagedorn & Freiesleben, 1999; Sandhof & Stumpf, 1998).

The important question for our purpose here is, how do graduates of *Waldkindergarten* perform later on in their elementary school years? The *Waldkindergarten* phenomenon is still too new for this question to be answered definitively. The first *Waldkindergarten* in Germany was launched less than 10 years ago, although there are now more than 100 such kindergartens operating in Germany alone. However, Roland Gorges of Darmstadt College has been studying this question for the past three years. So far, he has found that "the results clearly show that child-graduates of *Waldkindergarten*, in their subsequent years in elementary school, consistently perform about the class average in all areas, including social behavior, cooperation, reading, mathematics, music, art, and sports" (R. Gorges, personal communication, July 12, 2000; see also Gorges, 1999, 2000).

I mention *Waldkindergarten* not to suggest that this alternative is the single best choice for American boys, but merely to illustrate that modern alternatives to contemporary American kindergarten do exist and appear to be doing well. Many questions remain with regard to the possibility of importing *Waldkindergarten* to America. The most difficult of these questions is how to apply the techniques and methods of *Waldkindergarten* in locations such as densely populated cities, where no forest is nearby.

Improved Self-Esteem

The experience of trying to learn to read before you are ready, failing, and watching other children succeed while you fail is likely to harm a 5-year-old's self-esteem. Indeed, a boy's ability to read appears to be the principal determinant of his academic self-concept. Chapman et al. (1990) found that academic self-concept was almost completely determined by a child's achievement in reading. Other factors—including mother's intelligence, mother's expectations for school performance, family socioeconomic status, and even the child's IQ as measured on the revised Wechsler Intelligence Scale for Children—were not *independent* predictors in this study of the child's academic self-concept. If the child is not reading well, then that child is likely to have a poor academic self-concept, even if the child has above-

average intelligence and comes from a supportive home.

The danger of exposing a boy to a preliteracy curriculum before he is ready is that he will fail while others succeed. This experience of failure creates expectations of further failure, expectations that are likely to be fulfilled. Only a few such experiences appear to be necessary to create a feedback loop in which the child's low expectations and dread of the school environment lead to further failures, which lead to a further lowering of expectations. Skinner et al. (1998) reviewed considerable evidence that poor performance very early in a child's school career changes the child's *attributional style*.

Poor performances led children to increasingly doubt their own capacities and to believe even more strongly in the power of luck and unknown causes . . . [these children] were more likely to develop beliefs that emphasized external causes; these profiles of control predicted escalating classroom disaffection and lower scholastic achievement. (Skinner et al., 1998, pp. v, vi)

Such students are likely to agree with statements such as, "I can't get good grades, no matter what I do"; "I'm just not able to get along with my teacher"; and, "When it comes to grades, I'm unlucky." The child attributes bad academic outcomes to causes that are external to himself and outside of his control. This attributional style, once established, is very resistant to change (Skinner et al., 1998).

Objections to the Alternative

Objections to this alternative can be categorized under three headings.

Not Every Boy Needs This Alternative. How Would You Determine Who Is Who?

In any system, there must be a default. The current default is that all children enter kindergarten at the same chronological age, at or about age 5. There is no research-grounded basis for this policy. It has merely evolved as the path of least resistance, the option that seems to require the lowest expenditure of resources. As psychologist Craig Ramey observed, "We group kids by age because it's administratively efficient, not because it's good educational practice" (Renkl, 2000, p. 143). Parents already have the option, in almost every jurisdiction in the United States, to delay the entry of their children to kindergarten by one year.

My proposal changes the default age for boys' entrance to kindergarten from age 5 to age 6. For the great majority of boys, entrance to kindergarten at

age 6—preceded by a year of alternative kindergarten, such as *Waldkindergarten*—will be the best choice. What about the other boys? Consider the case of a boy who could have done well in contemporary kindergarten at age 5, but who is instead enrolled at age 6. That child's subsequent academic career will not suffer, and may very likely benefit, from a year in a nonthreatening, nonevaluative, noncompetitive environment.

Consider, on the other hand, the hazards of the current system. If a boy who is *not* ready to do kindergarten work (i.e., preliteracy work) at age 5 is nevertheless enrolled, by default, in kindergarten at age 5, he is likely to be labeled as *developmentally delayed*. His first experience of school is likely to be the experience of failure, repeated day after day, month after month. His self-esteem, especially his beliefs about his own ability to do well in school, is likely to be permanently and irrevocably harmed.

It Is Too Expensive

My proposal adds a year to the education of boys. The extra year would entail extra cost. On the other hand, the United States Department of Education reported that 17% of boys are now being retained in-grade in grades K–12, as opposed to 10% of girls (National Center for Education Statistics, 2000). Inserting a year of alternative kindergarten at the beginning of a boy's education might decrease the likelihood that the boy would be retained later. Adding a year of alternative kindergarten might also decrease the need for remedial classes later.

There is another dimension of cost savings in this proposal. Thompson, Lampron, Johnson, and Eckstein (1990) found that children with low self-esteem were more likely to misbehave, disrupt the classroom, damage school property, etc. Conversely, Jones and Offord (1989) found that an extracurricular program that focused entirely on nonliterary skills—such as crafts and carpentry skills—led to a reduction in antisocial, destructive behavior. They reported that "a cost-benefit analysis indicated that potential savings, primarily in reduced vandalism but also in reduced police and fire costs, greatly exceeded the cost of mounting the program" (p. 737). These findings suggest that investment in an alternative kindergarten might, at the very least, pay for itself.

What About Title IX?

Title IX of the Education Amendments of 1972 reads as follows: "No person in the United States shall, on the basis of sex, be excluded from partici-

pation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance." It would be difficult under the provisions of this statute for any American public school to create an alternative kindergarten exclusively for boys. However, a girl would be welcome to attend if her parents wanted her to enroll. Likewise, parents could exempt their sons from the alternative kindergarten if the parents were convinced that their son would not benefit from such an experience.

Recommendations for Further Research

The best test of my proposal would be to randomize boys in either a two-year program—for example, one year of *Waldkindergarten* followed by one year of contemporary kindergarten—or one year of contemporary kindergarten. However, it is unlikely that parents would be comfortable with the idea of their son being randomly assigned to one of two different educational tracks. Nevertheless, even a nonrandomized study comparing boys who enrolled in my proposed two-year curriculum to boys who followed the current one-year curriculum would be helpful. Such a comparison could examine not only the reading abilities of each group of boys later in their academic career, but also differences in parameters unrelated to reading. For example, would graduates of the two-year program be less disruptive when they reached middle school? How would they compare in measures of group cooperation? In team sports? In art? In music? In academic self-esteem? In overall self-esteem?

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