Pre school and Elementary Education
Reflections on Japanese
AND MINDS
HEARTS
EDUCATING
Educating Hearts and Minds

Teachers may appeal to "feelings" (of inanimate objects as well as people) to avoid a direct contest of wills with children. When teachers do intervene, it is often with strategies meant to bolster the "good child" identity and to foster children's connections to one another. In other words, the disciplinary arsenal aims at long-term "buy-in," not immediate compliance. By creating a lively, supportive yet self-critical environment, these disciplinary practices may have some important spin-offs for learning, as the next chapter explores.

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Learning and Caring

A Classroom Is a Place to Make Mistakes

A classroom is a place to make mistakes.
Let's raise our hands freely and make mistakes in our answers and ideas.
We shouldn't be afraid of making mistakes.
We shouldn't laugh at mistakes.
As we talk together, pooling our ideas, saying, "Isn't it this way?" "Isn't it that way?" in response to mistakes, we'll come to find something authentic.
And we'll all grow.
Let's feel easy about raising our hands.
Let's feel easy about making mistakes.
Let's create the kind of classroom where, if we make mistakes, someone will correct us, someone will teach us.
Sign posted in a Japanese fourth-grade classroom

At a time when the traditional structures of caring have deteriorated, schools must become places where teachers and students live together, talk with each other, take delight in each other's company. My guess is that when schools focus on what really matters in life, the cognitive ends we now pursue so painfully and artificially will be achieved somewhat more naturally.

Educational researcher Nel Noddings

My interest in Japanese education initially focused on discipline, group cooperation, and other aspects of children's social development. But as I spent time in Japanese classrooms, I came to see children's academic and social development as a single tightly woven fabric. To describe one without the other is to
rip threads from that fabric, to destroy its pattern and integrity. Earlier chapters argued that at the heart of Japanese elementary education is an emphasis on experiences of belonging, contribution, and sense of shared purpose. In this chapter, I argue that these qualities may be important not just as they shape children's social development but also as they shape intellectual development.

Here I explore four qualities of learning in Japanese early elementary classrooms. First, children's own contributions drive instruction to a remarkable extent. Lessons are deliberately designed to involve children, emotionally as well as intellectually, and to elicit their ideas and feelings. Second, learning is social. It's a community endeavor in which students listen to one another and teach and support one another. Third, learning emphasizes process as well as product. Wholeheartedness, persistence, and thoughtfulness, as well as mastery of subject matter, are strongly valued. Finally, learning is reflective; the ubiquitous hansei permeates learning. Students ask themselves, "Did anything about this lesson change my thinking?"; "What would I do differently next time?"; "What did I learn today?"

STUDENT CONTRIBUTIONS TO LEARNING

Although rote memorization and drill may dominate classroom education at the junior high and high school level in Japan, both ethnographic and large-sample studies suggest that Japanese elementary education emphasizes active student contributions to learning and deemphasizes rote memorization and drill, particularly in mathematics and science. For example, Jack and Elizabeth Easley contrast Japanese and American mathematics instruction:

Mathematics [in the Japanese schools studied] is treated more as a real-life, conceptual, theoretical subject to be thought about and explained to oneself than as a mechanical paper and pencil skill to be practiced. By second grade, children are writing the equations and complete answers for problems in permanent notebooks, often having to explain in their own words why something was done in a particular way. In America, primary school

math is generally regarded as a set of arbitrary skills—algorithms to be performed mechanically. . . . The idea of explaining reasons in notebooks does not fit into this conception, apparently. A study of first- and fifth-grade classrooms in Japan, China, and the USA concluded:

If we were asked briefly to characterize classes in Japan and China, we would say that they consist of coherent lessons that are presented in a thoughtful, relaxed, and nonauthoritarian manner. Teachers frequently rely on students as sources of information. Lessons are oriented toward problem solving rather than rote mastery of facts and procedures. . . . The role assumed by the teacher is that of knowledgeable guide, rather than that of prime dispenser of information and arbiter of what is correct. . . . Lessons are not rote; they are not filled with drill. Teachers do not spend large amounts of time lecturing but attempt to lead the children in productive interactions and discussions. And the children are not the passive automata depicted in Western descriptions but active participants in the learning process.

Learning Measurement in Mr. Yamamoto's Class

Mr. Yamamoto's first-grade mathematics lesson on measurement was typical of dozens of first-grade lessons I saw. One important idea shaped the lesson from beginning to end. The lesson quickly drew out children's own ideas, giving children many opportunities to evaluate their own ideas critically and to hear and respond to the ideas of other children. The classroom was noisy and active, as children worked both together and individually.

Mr. Yamamoto began his lesson on measurement by asking children to clear their desks except for one pencil. He held up his own pencil. "How can we tell if yours or mine is longer?" he queried the class. No sooner were the words out of his mouth than a child volunteered, "Hold ours up next to yours," and children rushed to the front of the classroom to compare their pencils with Mr. Yamamoto's. "I won" or "I lost," Mr. Yamamoto exclaimed dramatically as he compared his pencil with each child's. Children were
noisily discussing whose pencils had won and lost when Mr. Yamamoto threw down the gauntlet: “Find the longest object you can and bring it up here. This time I will definitely win.” With a gleeful smile, Mr. Yamamoto pulled his pointer from a hiding spot behind his desk, and children rushed to the front to compare their objects with the pointer.

Children lined up with a remarkable array of objects that they thought might “defeat” the pointer: their own height, towels, belts from clothing, seat cushions dangling from long pieces of elastic. But the pointer was longer. Seeing this, an enterprising group of students pulled all the cleaning rags out of the closet and tied them together in a long chain. The class cheered on this group of students and then exploded in groans when the rag chain turned out to be a bit shorter than the pointer.

Suddenly four boys who had been kneeling and conferring noisily in front of Mr. Yamamoto stood up, one boy balanced on the shoulders of another, “chicken-fight” style, while the other two boys held them steady. “You win, you win, you’re taller,” said Mr. Yamamoto, laughing, and the class laughed and cheered. As the students returned to their seats, Mr. Yamamoto passed out mimeographed sheets that had two lines drawn on them. He posed the following problem: “You can compare objects easily if you can put them next to each other, but what about if they’re on paper and you can’t move them? Then how do you compare them? Please investigate which line is longer. Circle it, and write on the back how you investigated.”

Children spent several minutes investigating the lines. Some took out rulers or long or short objects (such as pencils or erasers) to measure the lines. Others used paper to mark the length of each line. Mr. Yamamoto asked children which line was longer; the whole class agreed on the answer. Then he asked them to explain how they investigated. Children discussed this for several minutes, with about one quarter of the class endorsing the idea that you can tell “just by looking.”

“If you think you can tell what is longer just by looking, let’s try this,” said Mr. Yamamoto, handing out another mimeographed sheet. This sheet also contained two lines – but arranged at angles in an optical illusion that made the shorter line look longer. Children discovered this as they measured, and they shouted out comments like “What’s going on here?,” “I thought this was longer,” “Weird, hah,” and “Unbelievable.” Mr. Yamamoto asked the children who previously thought they could tell length “just by looking” whether they still thought so; the children said no.

Then Mr. Yamamoto asked children to name all the different ways they investigated the length of the lines. The class discussed each one, and Mr. Yamamoto asked children to demonstrate on the board techniques that were not obvious to others, such as marking a piece of paper with the length of one line and then comparing it with the second line. “The students who are now fourth-graders discovered 10 different ways to compare the length of objects when they were in first grade. So let’s think of some more. Talk within your groups about other ways to compare the lines.”

Students conferred for several minutes and came up with some new ways, including using fingers to measure. Asking the whole class to measure the lines on the first printout using their fingers, Mr. Yamamoto posed the question, “Is the same line longer no matter what you measure it with?” Many children readily answered yes to this question, but the class discussed the issue for several minutes, as students attempted to explain why several classmates had obtained different results using different measurement methods. Class members offered explanations to the children who found contradictory results (“You used different fingers to measure”; “Maybe you didn’t measure carefully”), and the class discussed these comments for several minutes.

Mr. Yamamoto then posed another challenge: “Measure whether your notebook or your desk is longer without
putting them next to each other. And remember – it’s no
good to tell just by looking, as we already found out.” Stu-
dents spent a few minutes measuring, using a variety of
techniques; a child who used a small eraser said aloud to
himself as he worked, “What a tedious way to measure a
big desk.” Then Mr. Yamamoto posed the final problem:
“Let’s measure the two ends of the classroom to see which
is longer.” No sooner were the words out of his mouth
than the whole class sprang into action. Children pushed
desks away from the back of the classroom. Many children
spontaneously worked in pairs or small groups. Some
children got down on the floor with tiny 10-centimeter rulers
or pencils and carefully worked their way across the class-
room. Others counted the tiles across the classroom floor.
Several children lay down, hands outstretched, and mea-
sured the floor in human body lengths.
Measurements completed, students pushed the desks
back into rows and began to report all the different
methods they had used to measure the two ends of the
classroom. Mr. Yamamoto listened quietly to their discus-
sion, chiming in at the end to mention one method no one
had used: pacing off the classroom. Mr. Yamamoto con-
cluded the lesson: “Next time we’re going to try using a
ruler to measure. In preparation, I’m going to measure lots
of things at home.” He pulled a ruler from his drawer and
brandished it, smiling. The monitors stood to announce
that mathematics class was over.

ACTIVE LEARNING: DRIVEN BY IDEAS
What’s the difference between learning about measurement in Mr.
Yamamoto’s class and learning it, say, by sitting at a desk filling in a
workbook that provides measurement exercises? First, the lesson
drew out children’s own ideas in a way that a workbook could not:
Children were forced to recognize and examine their own assump-
tions about measurement (for example, that you can tell relative
length “just by looking”). The point of Mr. Yamamoto’s lesson was
not simply to build measurement skill (though students had many
opportunities to practice measuring) but to build an understanding
and appreciation of measurement: that you can’t tell size “just by
looking”; that different units (eraser lengths or finger lengths) can
be used for measurement; that these different units might yield
different numbers but should yield the same conclusions about
relative length. In this lesson, the thinking of other children was a
critical stimulus; learning was a social enterprise that entailed lis-
tening to fellow students and reconciling conflicting views, not
simply recording one’s own unchallenged ideas on a workbook
page. Interestingly, Mr. Yamamoto raised, but never answered, a
major conceptual issue: Is the relative length of two objects the same
no matter how you measure them? Too, Mr. Yamamoto made mea-
surement irresistibly interesting and important. It became a way to
explore the classroom, work with friends, playfully challenge the
teacher, and reveal deception.

Students’ active learning took them not only to the floor of Mr.
Yamamoto’s classroom but to many other places inside and outside
elementary schools. They went to surrounding neighborhoods to
make maps and study safe routes to walk to school. They went to
local parks to investigate playground equipment and rules. They
went into the schoolyard to sketch the growth of the morning glo-
ries planted by the students. They went to all rooms in the school,
including the utility rooms, to map them and meet all the people
who “help the school.” I quickly learned not to depend on electric
outlets for my tape recorder, since lessons (particularly science and
social studies) often took students outside the classroom.

All first-grade classes cared for animals and plants, and their
natural changes catalyzed a number of lessons. For example, when
three of six crabs in one first-grade class died over a one-week
period, the teacher devoted a science class to investigation of the
crabs’ demise.

Children observed the living and dead crabs and men-
tioned everything they noticed about them, including the
fact that they all “stunk.” Some children believed that the
crabs smelled bad because their water was dirty; others in-
sisted that crabs "naturally" smell bad and cited experiences at the seashore as evidence. The teacher asked how they could find out which was true. After students raised many possible strategies — including a trip to visit the crabs' natural habitat! — they settled on the idea of cleaning the aquaria and seeing whether the crabs still smelled bad. The teacher asked the class to reason through the strategy: "If I change the water and the crab still smells, then which is it, water or crab, that smelled?"; "If I change the water, and then the crab doesn’t smell, which is it, water or crab, that smelled?" The children raised their hands to predict which they thought would smell — water or crab — and the teacher tallied the predictions on the board. The class was about evenly split. The students then changed the water, cleaned the crab cages, and came up to smell the crabs again. Most thought that the crabs no longer stunk. The teacher asked several students to summarize what the class had done and found out and then offered his own opinion, focusing less on science than on responsibility training: "I think the water was so dirty the crabs died. Which do you think crabs like: clean or dirty water?" "Clean," answered most of the students. "All of you would rather be in a clean house, wouldn’t you?" the teacher reasoned, and added, "There’s a group to change the crabs’ water, but if the rest of you remember, remind that group to change it."

Finally, the teacher asked the class what to do with the dead crab. "Bury it!"; "Give it a funeral," volunteered the students, and one began humming a funeral dirge. The teacher agreed, and teacher and students took the dead crab out to the schoolyard, stopping at a utility closet on the way to get a shovel. Several boys argued over who would get to use the shovel and finally played "scissors-paper-stone" to select the grave diggers. The whole class now hummed the funeral dirge as they crowded around the grave. The period was over, and the teacher suggested that any students who wanted to make a grave marker and write an epitaph could do so during the upcoming 20-

minute recess. The students returned to the classroom. "Let’s take good care of the crabs who are still living," was the teacher’s final comment. Student monitors rose to announce, "Science class is over."

In another school, a mysterious white powder that appeared on some of the class’s cucumber plants provoked a lesson very similar to the investigation of the crab death. Students were encouraged to observe the plants closely, hypothesize why some plants were covered with white powder, and devise ways to test their ideas.

Not just children's predictions but also their active thinking of other sorts shaped the direction of many lessons. For example, problem creation (mondayzikuri) was a common technique in mathematics lessons. Children wrote their own word problems. Often children showed great eagerness to solve the problems they themselves had created: In one first-grade class devoted to creating word problems, children begged to extend mathematics class beyond the bell so that they could go on and solve the word problems they had written. (Maybe it helped that the students had suggested the kinds of candy, gum, and cookies they would “buy” in their word problems.)

A number of gamelike mathematics lessons featured the mathematics set each first-grader possessed: a box stocked with colorful tiles, gameboards, a clock, and other manipulative math materials. For example, in one first-grade class, pairs of students played the hand game "scissors-paper-stone" 20 times, with the victor coloring in one square in a 4 × 5 matrix after each round. The class then copied on the board different children’s game boards and discussed whether different arrangements of squares could really represent identical scores. An American undergraduate science major who observed the lesson with me wrote the following narrative notes:

Although the class period was designated for math, the actual time spent doing math problems was relatively small compared to the time spent playing and discussing the results of the game. I was particularly impressed with this because instead of spending class time on repetitive math problems, the teacher used the game to maintain the attention of the students as well as to induce them
to think about the relationship between the number and pattern of squares and the final outcome of the game. At each stage of the game the teacher asked her class to guide her in making the next step and as a consequence, I assume that she promoted much independent thought in the students. Throughout the process she used a warm tone of voice and kept a slightly puzzled facial expression in order to encourage the students to give answers to questions. I was very surprised by this because I expected Japanese math teachers to place more emphasis on practical problem-solving instead of on general conceptualization of mathematical and geometrical relationship.\(^7\)

Drill and practice accounted for a small portion of the school day in the first-grade classes I observed. While students might spend 20 to 30 minutes writing ideographs or 5 to 10 minutes at the beginning or end of mathematics class responding to flashcards, the vast majority of lessons involved children as active thinkers – and often as active doers as well. Several teachers explained to me that drill and practice were best left to homework and that school lessons should take advantage of possibilities unique to the group setting, such as having children work together and benefit from each other’s ideas. It’s important to note, however, that students’ ideas may have more opportunity to drive lessons in science and mathematics than in other subject areas, particularly as students advance through the grades.\(^8\)

"WET" LEARNING: AN EMPHASIS ON WHOLEHEARTED INVOLVEMENT

I have a criterion for deciding whether to save or throw away the papers my son brings home from school. Is there anything “of him” in the work? Any idea, feeling, memory, aesthetic impulse of his? Or has he simply filled in the blanks with prescribed answers? By this test, I would save most of the work done by Japanese first-grade students, whose essays, diaries, artwork, and notebooks speak richly about themselves, their families, their experiences at school, their daily encounters with nature and science. Japanese use the English loan words uteto and dorai ("wet" and "dry") to describe emotional styles. A “dry” approach is rational, logical, unemotional, and Western; a “wet” approach is personal, emotional, interpersonally complex, and Japanese. Most of the academic lessons I saw in early elementary classrooms were “wet” learning. Lessons were designed to spark children’s personal interest and contribution, grip them emotionally, and involve them intimately with classmates. Even when the content was science or mathematics, learning was often an emotional enterprise. Here’s how the first-graders of Ms. Hirabayashi’s class studied sinking and floating.

Students had prepared for this science lesson by bringing an odd assortment of plastic bottles from home. Ms. Hirabayashi explained that the class would make boats from the plastic bottles: “We’ll decorate the bottles, put sand in them, and float them in water. Think about how things float as you plan your decorations, and make the most wonderful decorations you can imagine.” After children met briefly in their small groups to share ideas about sinking and floating, they spent nearly 2 hours over the course of that day and the next transforming their bottles into boats, using colored paper and found objects. The results were extraordinary: dragon boats, dinosaur boats, floating European castles, a pirate ship complete with flag and crew, a “candyland” boat, and a panoply of superheroes and fairytale characters. (Before I knew it, I had used a whole roll of film on these fanciful creations.)

After 2 hours of work, the children lined up the bottles on a long counter to admire and study one another’s work. The colorful procession of bottles, looking like floats in a holiday parade, decorated the classroom until the next morning’s science class. The next day, Ms. Hirabayashi brought in several buckets of sand. With her instruction “Think about how your boat will float as you plan the sand,” children began funneling sand into their bottles. When children then moved outside to float their boats in the school’s fountain, the scene was dramatic. One or two boats floated with their decorations above water, but most toppled into the water, and a few sank. Children’s atten-
tion was riveted on the boats; children shouted, “The water got me”; “Godzilla’s soaked”; “Ultraman drowned.” After a few minutes of watching, shouting and laughing, they retrieved their soaked creations and returned to the classroom.

Ms. Hirabayashi began the discussion by posing two questions: “Who was happy with the way your boat floated?” and “Who saw something about another person’s boat you’d like to try on your own boat next time?” A 20-minute discussion by the whole class ensued. Children talked about which boats had sunk, floated, or tipped in various directions and volunteered their ideas about why, mentioning amount and placement of sand. Ms. Hirabayashi pointed out the similarity or contradiction among children’s ideas and said, “What a magnificent reflection (hansei)!” to several children who had criticized their own designs. Finally, the students spent a few minutes in their small groups, discussing how they would decorate the boats and weight them with sand if they were going to do it again.

Why did Ms. Hirabayashi’s students spend 2 hours decorating their boats? Many lessons began with discussions or activities that – at first blush – seemed irrelevant. In the lesson about water volume described in chapter 4, Mr. Yanagi spent the first 10 minutes having each child “introduce” the bottle he or she had brought from home. Along the way, the children volunteered information about the favorite drinks or liquids that had inhabited the bottles: “This is my favorite juice”; “I love vinegar, just like my dad.” Mathematics lessons began with children naming their favorite sweets – and later making up word problems about buying those sweets. In Japanese class, students closed their eyes and imagined the sights and sounds of their recent field trip before writing about it. Art class – making pop-up cards for graduating sixth-graders – began with 10 minutes spent recalling the many ways the sixth-graders had helped the first-graders; students recalled, for example, how the “big brothers and sisters” of the sixth grade had cleaned the first-grade classroom and ministered to the first-graders who scraped knees on the playground. These beginnings were what some teachers called sasoi kake – invitations. “If the sasoi kake is good, the learning will be good,” one teacher told me.

Another illustration of “invitations” to learn comes from research on Japanese and American preschool teachers. Look at Figure 1 and imagine that you and a preschooler are facing each other. But instead of seeing each other, you each look at one side of the large easel that sits between you holding the four pictures shown in Figure 1. Your job is to describe the starred picture in such a way that the preschooler will select it from the four pictures. American teachers involved in this task significantly more often got right to the “point” and gave clues that immediately identified the target picture. Japanese teachers, in contrast, often invited children to the task by relating all the pictures to some shared experience of teacher and student or to the student’s interests. A Japanese preschool teacher used the following description to help 5-year-old Yuki-chan choose the correct picture from Figure 1:

Yuki-chan, a little while ago you were playing in the assembly hall, with Kazuo-chan. The principal and Teacher Hayashi were playing too. Remember? Everyone played with hoops. Remember how all the hoops were circles but there was just one hoop that was broken, at the top. Separated, by quite a bit. But I think the principal will fix it for us, because it is dangerous. At the top. Yuki-chan, which do you think it is? The one that’s separated, by quite a bit.

Only after the child selected the wrong picture did the teacher give further information: “Less than half is missing.” For the Japanese preschool teachers, the goal of having the child select the correct answer often took a back seat to the teacher’s efforts to interest children in the task and establish a feeling of mutuality.

The emphasis on personalized learning and on classroom goals of friendship, kindness, and helpfulness may have a cumulative impact on the way Japanese students approach learning. Researcher Keiko Moriga asked more than 1,000 English and Japanese children aged 7 to 17 to write everything they “felt and thought”
LEARNING AND CARING

A FOCUS ON PROCESS

Educating Hearts and Minds

Figure 1 Communication Game Illustration Child and adult set up on -
that chestnut looks on the paper. Can't you draw something to keep the chestnut company?" The same held true for compositions: "Some classmates were able to remember and write many things about our trip to dig sweet potatoes, others just a few. If you could write just a few, think and write at home, so we can all remember and write a lot on Monday." More elaborate work was valued, I think, as evidence of students' persistence and engagement.

The national curriculum, described in chapter 2, honors process in its emphasis on such goals as "Love of nature" and "Desire to contribute actively to family life." These goals can be measured only by emotional engagement, not by skills or knowledge. Sometimes process seemed to be the point of an entire lesson. One first-grade science lesson, called "juice play" (shiruiasobi), had children bring in a variety of flowers and fruits from home, extract colors from them, and use the colors to make fold-dyed paper during a subsequent art class.

Children spent the first 10 minutes of class introducing what they'd brought from home or picked in the class garden - grapes, a melon, an orange, a lemon, and many different kinds of leaves and flowers. The teacher asked students to introduce their flowers and leaves, telling the names and where they grew; she asked the children to predict what colors each would make. The children shouted out predictions, which the teacher wrote on the board. The teacher explained the three ways of extracting juice - grinding in a mortar and pestle (for leaves or hard fruits), massaging in a plastic bag with water (for flowers), and squeezing (for juicy fruits). She then instructed the students to work cooperatively with their four groupmates and to send one person from each group to obtain a container of water and a plastic bag for the group. Each student had an inexpensive, commercially produced "juice play kit" that contained a small mortar and pestle and an assortment of small dishes. Students set to work pulverizing, squeezing, and massaging. "I can't get any juice out of my leaves," shouted one child after about 5 minutes of grinding. "I think it just takes a long time," counseled a nearby child.

The teacher announced that they would continue juice play for 25 minutes, "until the big hand is at the 10. So think about the time so you can do a good job within the allotted time." Children continued to grind, squeeze, and massage. Despite the difficulty of pulverizing the leaves in the mortar and pestle, a number of students seemed mesmerized by this task and kept grinding, making comments to neighbors like "Look, my leaves are totally smashed." Several students didn't move on to the other methods, despite a reminder from the teacher that "we'll end juice play when the big hand is at 10, so remember to try all the methods." Students traded fruits within their groups and shared the group's plastic bag. The classroom became wonderfully fragrant of melon, orange, and flowers. The teacher announced that the big hand had reached the 10; she was greeted by a loud chorus of protests. "We want more time" and "Not yet," shouted a number of children. "Well, OK, how much more time do you need?" They agreed on another 10 minutes, but students once again protested at the end of that time, and the teacher agreed to another 10 minutes. The children then saved the various juices in order to use them in their art lesson later that day: They would fold paper and dip it in the various colored juices, unfold it to see the patterns, and, finally, compare their predictions with the colors actually produced.

Many other researchers have commented on the Japanese focus on process, rather than product, particularly in learning the traditional Japanese arts. Researchers Robert Hess and Hiroshi Azuma describe the American teaching approach as "quick and snappy," the Japanese approach as "sticky-probing."

In a study of science education, Azuma and Walberg (1985) compared Japanese and American teaching processes. Fifth grade teachers, four in each country, were asked to teach their pupils about the dissolution of substance in water... All four American classes discussed what they planned or were going to do, the
MISTAKES: A NATURAL PART OF LEARNING

Learning mathematics, writing, reading, and even doing science are not easy for children. They often make mistakes when learning. But mistakes are a natural part of the learning process. When children make mistakes, they learn from them. Teachers can help by providing feedback and encouraging children to try again. The key is for teachers to focus on the learning process rather than just the correct answers. By doing so, children are more likely to feel comfortable making mistakes and learning from them.

Learning and Carving
Similarly, first-grade teachers often told students, “This is strange (okashii)” or “See if you can find anything strange about your paper” rather than explicitly identifying or correcting a mistake. The point was not so much to elicit the right answer as to foster thinking. Why correct a child’s shoes when the “funny feeling” of having them on the wrong feet might wreak a conceptual breakthrough? A common technique in mathematics instruction was to have several students copy their solutions onto the board—often, among them, one or more incorrect approaches. Students would explain their thinking, including that which led to mistakes. The comparison of the various correct and incorrect problem-solving strategies would form the core of a lesson. Jack and Elizabeth Easley have noted the importance of mistakes in Japanese mathematics instruction:

Children [in Japanese schools] are much less protected... from making serious mistakes in mathematics, a point which seems quite consistent with the Kitamaeno staff attitude toward social interactions. Be supportive, but don’t direct or take over what someone else is doing for himself or herself. . . . As the children themselves often put it, they were expected to learn from their mistakes. . . . In American math classes, expression of erroneous thinking or other differences of opinion are usually not encouraged, and the form of discussion is expected to be fairly uniform. . . . Often, no one knows what Johnny did wrong and why. In Kitamaeno School, we saw a larger variety of mistakes, presumably because the children felt free to explore their ideas openly.13

A COMMUNITY OF LEARNERS

At first I felt uncomfortable when children’s mistakes were bared for all to see. Don’t children feel humiliated when they put an incorrect math solution on the blackboard? Or when their drawings are singled out as looking like stick figures? Quite soon I was reassured by the sense of community in the Japanese classrooms I studied. Friendliness, cooperation, and persistence dominated classroom values, and these were arenas of achievement available to all children. Lessons were challenging, and hence mistakes were an inevitable part of learning. Like the optical illusions presented by Mr. Yamamoto, answers were not always obvious or easy. Often teachers asked for a show of hands from students who had obtained correct and incorrect answers to a problem, and the show of hands for incorrect answers was often substantial. As we’ve seen, students who criticized their own thinking were warmly acknowledged, as were students who explained the thinking behind their mistakes, so that, as one teacher said, “Everyone in the class can learn from the students who tried to solve the problem this way.” Mistakes became opportunities to help classmates rather than failures to be hidden.

Students’ active role in managing academic activities was often as striking as their active role in managing discipline (see chapters 5 and 6). Students clapped for each other, gave each other permission to speak, evaluated each other’s performance, and responded to each other’s ideas. In some classrooms, students used hand signals to signify their agreement or disagreement with the student who was speaking or their desire to add a new idea; this allowed the student or teacher to lead a smooth, ordered discussion by knowing the category of contribution each student wanted to make. Often students ran discussions, with each student choosing the next student to speak or with the daily monitors serving as discussion leaders. Many classroom rituals emphasized students’ role in each other’s learning. For example, in many classrooms students routinely asked permission from their classmates before they read aloud and routinely asked, “Is this all right?” after they wrote on the blackboard. In many schools, students had pieces of blackboard which attached magnetically to the front blackboard, so that they could easily share their individual work with the class. A first-grade mathematics lesson illustrates a number of these themes.

Ms. Ogawa read a word problem to the class: “Seven children boarded a train, two got off, and three more boarded the train. How many were finally on the train?” She asked children to write equations to represent the problem, and she asked several children, who had each written a different equation to represent the problem, to
LEARNING AND CARING

REFLECTION

Looking into the classroom and seeing the students engaged in their work, it was clear that the lesson was progressing as planned. The students were participating actively, and the teacher was guiding them effectively. However, there were moments where the emphasis shifted from individual growth to group interaction. The teacher's role in orchestrating discussions and facilitating group work was evident, but there was a need to balance the individual learning experience with collaborative tasks.

Educating hearts and minds involves fostering an environment where students feel safe to express themselves and learn from each other. The teacher's approach was effective in promoting this, but there were instances where the pace of learning needed to be adjusted to ensure all students were on the same page. Classroom management and time allocation were areas for improvement.

Overall, the lesson was a success, with students showing increased participation and engagement. The teacher's adaptability and willingness to modify the lesson based on student feedback were commendable. Continuous reflection on teaching practices and strategies will further enhance the learning experience.
school, a fifth-grade teacher told his class they would devote the day’s mathematics lesson to “discovering the beauty of using letters to represent unknowns.” Students spent the entire class period suggesting the advantages of letters to represent unknowns, compared with question marks or the geometric shapes (rectangles, triangles) often used to represent unknown quantities in primary grade textbooks. The students came up with several advantages. For example, the alphabet, unlike a question mark, can distinguish multiple unknowns — one to represent the price of pencils, another to represent the price of erasers, and so forth. Letters, unlike geometric shapes, are standard symbols that can be written easily in horizontal formulas. The students continued to suggest, discuss, and list on the board or discard potential advantages of letters as unknowns, but the teacher continued to ask, “Aren’t there more advantages?” The lesson ended with the teacher’s comment “Did we think of all the reasons letter unknowns are useful? See if you can think of more.” After each of these lessons, I found myself puzzling: What are the various types of word problems? What are the advantages of letters used to represent unknowns? The fact that I continue to puzzle over these issues years later is, I think, precisely the point.

**TOLERANCE OF DIVERSITY**

Recent educational reforms in Japan have focused on the need for increased “individuality” and “internationalization” in Japanese schooling. It’s easy to see why these areas have been identified for improvement. The 627 hours devoted to social studies (and its primary grades precursor, Daily Living) during the elementary years focus almost exclusively on the students’ school, community, region, and country, until sixth grade, when some attention is given to international cultural, sports, and peacekeeping organizations.

Although U.S. elementary curricula, too, tend to start with a local focus, by sixth grade most American students have studied some foreign countries; many have had the opportunity to study some other cultures in depth and to study cross-cultural issues such as the immigrant experience and cultural conflict. In many American elementary schools, a wide range of artistic, literary, and research activities are designed to build students’ empathy for and interest in diverse cultures. American elementary teachers sometimes criticize America’s multicultural education for failing to go beyond “the three F’s: food, festivals, and famous people.” Yet our exposure to diverse cultures is considerably more than many Japanese students receive. The call for “internationalization” of Japan’s curriculum is relatively recent, and it remains to be seen how elementary schools will respond.

As noted above, visitors to Japanese classrooms are often struck by the single “right” way to do things: to stow desk belongings, to fold the chef’s apron after serving lunch, to choose the belongings to bring to school. Sometimes, too, there are “right” answers to questions of culture. I observed one first-grade social studies lesson that asked students to brainstorm items — holidays, flowers, foods, and so forth — associated with each season of the year. When one student volunteered “Christmas” for the list of winter items, the teacher declined to put it on the list, asking, “Can’t you think of a more Japanese winter holiday?” The teacher passed over several responses until finally a student mentioned Japanese New Year. Similarly, the teacher ignored students’ protests that they could swim and play baseball year-round, and she put these items only in their “proper” seasonal categories. In another first-grade class, studying “how our mothers spend their time,” the teacher ignored children’s reports that their mothers worked outside the home. By recording in the class bar graphs only the time mothers spent on traditionally female tasks, such as cooking, cleaning, and childcare, the teacher sent a strong message about the proper work of mothers.

With respect to emotions, too, one sometimes senses a careful socialization of the “correct” emotions. On one level, it’s refreshing to enter a Japanese classroom and see that the month’s goal is “Let’s be cheerful” or “Let’s be energetic” — goals that recognize that children’s needs go beyond academics. Yet these goals too suggest a “correct” way to feel. Why should children make an effort to be cheerful if it doesn’t come naturally? One comparison of Japanese and American preschools found that Japanese educators tended to
emphasizing the yet unexpressed, unarticulated, and unspoken. The difference is profound and significant in the way that Japanese education would be structured by expanding the horizons of inquiry and understanding. In this context, I would make the following observations.

Japanese education, in contrast, is unique and distinct from Western education systems. It is characterized by a strong emphasis on discipline, respect, and the cultivation of a deep commitment to learning. The Japanese classroom is typically structured around the concept of the "sensei," or teacher, who holds a position of authority and is respected by students. Learning is often perceived as a collective endeavor, with students working together to achieve common goals.

The Japanese system places a high value on discipline and work ethic, which are seen as essential for success in both academic and professional life. This emphasis on hard work and perseverance is reflected in the classroom through严格的要求 (rigorous demands) and a strong focus on achieving excellence. Students are expected to be diligent and to strive for perfection in their studies, with a strong emphasis on self-discipline and personal responsibility.

In contrast, Western education systems tend to place more emphasis on critical thinking, creativity, and individual expression. Students are encouraged to explore ideas and to question assumptions, with an emphasis on developing problem-solving skills and critical thinking abilities. The classroom environment is generally more collaborative, with students working together to solve problems and to develop solutions.

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SUMMARY

There's an extraordinary gap between the American media's portrayal of drill and memorization in Japanese elementary schools and the active, idea-driven learning that researchers have observed. Media portrayals may reflect an assumption that Japanese elementary schools are, like Japanese secondary schools and cram schools, focused on drill and memorization. Too, media coverage may reflect Americans' own assumption that academic achievement is produced by a focus on drill and performance, not a focus on understanding. Although more research is needed, particularly outside the areas of mathematics and science, I think existing research supports the following tentative conclusions about Japanese early elementary education:

- That skills tend to be learned as part of some larger, meaningful pursuit – not as an end in themselves.
- That lessons elicit children's own ideas and feelings and help children reflect on them.
- That teachers work hard to create a community of learners who respond supportively to one another's thoughts and feelings.
- That teachers emphasize the process, as well as the outcome, of learning.
- That wholehearted involvement, persistence, and thoughtful problem solving are regarded as important goals for children's learning.
- That reflection (hansei) is a pillar of academic learning.

Early elementary lessons generally rested on a view of children as active learners rather than simply passive recipients of information. This view recognizes that children have their own powerful ideas about how the world works – scientifically, socially, morally – and that learning must engage and shape those ideas, not simply superimpose information or procedures that children memorize and then forget. Again and again I found Japanese lessons striking for the welcome they gave children's own powerful ideas and the help they gave children to examine these ideas in a thoughtful, critical, sustained way.

Do you have the same amount of water if you pour it into a taller, narrower glass? Do 10 colored boxes scattered across a sheet represent as big a score as a block of 10 boxes next to one another? What are the reasons for rules in a park? Children's powerful ideas were welcome in part because of the structure and content of the lessons: a sustained, relaxed focus on a single major issue over one or more entire class periods; plenty of "invitations" to connect the lesson with personal experiences; activities that engaged children (often physically and emotionally as well as intellectually) with what was being studied.

I was impressed by the faith teachers seemed to place in children's own capacity for self-evaluation and by teachers' reluctance to short-circuit children's own reflection by providing answers and judgments. Yet the welcome for children's ideas may hinge as much on sense of community within the classroom as it does on lesson content and presentation. Children listened and responded to one another's ideas – clapping for one another, correcting, congratulating, devising explanations for students who were having difficulty. Would any of this have been possible without the community-building and group-building efforts described in chapters 3 and 4?

Both American and Japanese educators recognize the importance of opportunities for children to learn from their mistakes. But the crucial infrastructure for exploring mistakes – or for any kind of challenging learning – may be a classroom where all students know and care about one another as people, know how to talk and listen to one another respectfully, and have the safety provided by strong, shared class norms of kindness, helpfulness, and "putting our strength together."