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The End of the Never-Ending Line

Steven Levy

A simple task—drawing a straight line—teaches students important habits of mind and shortens the line of students waiting for the teacher's approval and feedback.



"Mr. Levy, is this done?"

"Mr. Levy, how's this?"

March 1999

The line of students stretches back from my chair, disappearing among the desks at which other students wait with fear and expectation for my verdict. Somehow, that line never ends.

Sometimes students present work that demonstrates care and a desire for quality, even though it might be incomplete. But more often I am disheartened by the primitive, careless work that my students turn in, expecting my approval.

"Have you read this yourself, Lisette? It doesn't make any sense. Read it before you show it to me."

"Is that all, Ross? You haven't even begun to describe what a pulley is, and your drawing is incomplete. Go back and read the directions."

The frustrations of inspiring students to produce quality work are well known to most teachers. We encourage and exhort them, but our efforts do not yield the intended results. How do I get my students to take responsibility for their work? How do I communicate that everything they do matters and that if something is worth doing, it is worth doing well? In short, how do I get rid of that never-ending line? My goal is to build into the culture of my classroom the habits of thought and work that will inspire my students to strive for excellence and that will equip them to achieve it in every assignment.

Building Habits, Establishing Culture

Habits are built from the bricks of repetition. They are not something we receive in one big block and call our own. We need to practice them until they become part of our nature. Habits are best mastered when formed with elementary tasks and then applied to more complex ones. To build habits that establish a culture in which quality is the norm, I begin with a basic but demanding task that each student can accomplish, yet all can improve: the challenge of drawing freehand a straight line. Through this assignment, I introduce, practice, and establish standards of quality that guide our work throughout the year. We begin to develop the habits of persistence, reflection, learning from past knowledge, and continual improvement.

I use the challenge, from the initial assignment to the final assessment, to free me and my students from the never-ending line. The three or four weeks that we spend working on a series of line drawings build habits that last throughout the year.

Experience. Every product my students create begins with an experience. When students forge concepts through experiences, they are more likely to remember and understand them. In designing curriculum, I consider what experiences the children have had that are miniature examples of the concept I want them to understand. For example, if I am teaching 4th graders about explorers, I need to find when in their own lives they knew the terror and the thrill of venturing into the unknown.

If no experiences parallel the concept I want to teach, I create one. If I am teaching about the American Revolution and I want my students to feel the injustice of taxation without representation, I tax them for sharpening their pencils or going to recess. They are better able to understand when their own passions are ignited and they can see the principle through the lens of their own experience.

Sometimes the experiences are major events; sometimes they are simple observations or challenges. I often begin with something very basic. To launch the line drawings in the first week of school, I told my students to look around the room and to gaze out the window.

"You will notice," I told them, "that everything you see is made up of some combination of straight lines and curves. Thus, if you learn to master the straight line and the curve you will be able to draw anything." They were mildly intrigued. The thought of being able to draw anything seemed a worthy and reachable goal. They were willing to explore the idea further.

I called on several students to come to the chalkboard and draw long straight lines. The class examined the lines, noticing the straight parts and the inevitable slants, bumps, or bends. We did the same with curves, making a large C-shaped form. Again the class noted the round parts, the symmetry, and the places that seemed flattened or stretched. I pushed them to attend to the finest detail. I wanted them to get the idea that everything they do in my class counts and would be observed and evaluated with the utmost rigor.

The assignment. After the group demonstrations, I distributed worksheets with a line-drawing challenge but few instructions. I wanted to see what the students would do on their own. The students followed the directions on the sheet, more or less.

Student work. The work varied greatly on this first assignment. Some students were careful and precise, whereas others rushed to finish. I chose to discuss several samples, each one illustrating one criterion that I hoped to elicit through class discussion.

Criteria and standards for excellence. As the students looked at the straight lines, I asked, "What do you like about this work?"

"The lines are all evenly spaced."

I wrote "even spaces" on chart paper and showed the next drawing. "What do you like about this one?"

"The lines are all the same size."

"Excellent!" I responded, and wrote "same size." "How about this one?"

"The lines are really straight."

I added "straight lines" to the list. "So these are the things we are looking for in your drawings: even spaces, same size, and straight lines."

We went through the same process for curves, diagonals, and circles. Looking at their own work to identify the standards clarified the assignment.

Practice. When I gave them another sheet to complete, they were aware of what I expected and worked with more focus and commitment to the standards.

The rubric. I let my students muck around a bit before developing the rubric. If I define the rubric too early, they tend to follow the rules rather than think creatively about the assignment. Although their first effort may lack quality, they often do interesting things that expand my idea of what the assignment might look like. We examine the first round of student work together and develop a rubric to assign value to the criteria and describe performance levels.

Examples. Although the rubric describes performance levels, students need examples of work at each level to effectively and objectively evaluate their own efforts. The next steps are to look at more work as a group and to evaluate drawings according to the rubric we designed. In this way, students can see what exemplary, accomplished, developing, or beginning work looks like.

Self-evaluations. Self-evaluation helps students establish a sense of responsibility for their own learning and increases their familiarity with the standards. Students initially saw the criteria when they received the assignment. But the criteria did not mean much until students brought the standards into their consciousness and used them to guide their work, which explains why a rubric alone would not enhance quality for most students.

When students used the rubric to evaluate their own work, they became aware of where their work met the standards and where it fell short. They were better equipped to revise meaningfully and effectively. They knew specifically what to work on and what excellent work looked like. The never-ending line began to diminish, but was not yet eliminated.

The students evaluated not only the finished work, but also the process. I wanted them to plan consciously. Many students rushed into the assignment, made mistakes, and asked for another sheet. At the other extreme, perfectionists erased until the paper tore. I instituted a new policy: Students were allowed only one sheet of paper and could not erase. Careful planning became essential. I taught them to approach the task by drawing light lines first; to look for straightness, spacing, and size; and only then to darken the lines. I encouraged students to go over the lines if they were not straight. I wanted them to experience the straightness in their hand, to see it with their eye.

Because the process of planning is directly related to the quality of the product, I wanted them to reflect and become conscious about their planning strategies. Did they start with light or dark lines? Did they plan what to do, or did they just start drawing? Establishing a habit of planning improves the quality of work. Planning how and where to draw a line develops the habit of controlling the impulse to race ahead and just "get the work done."

I also wanted them to commit to improving each time they drew. Some students drew neat first lines and then got sloppy. I wanted them to develop the habit of persistence, of applying what they learned from past experience to improve their next drafts. So a section in the self-evaluation asked them to observe whether their work was improving, inconsistent, or deteriorating as they practiced.

Peer evaluation: Critique. My students had some experience with the four steps of peer critique that I adapted from a critique process developed by a colleague, Ron Berger.

1. Say something positive. This response creates a climate of support and collaboration. If students offer their work for critique, they know they will get some compliments.
2. Observe something that can be improved. The person giving feedback identifies some aspect of the work that could be developed further to meet previously established criteria.
3. Be specific. Here is where I intervene most. For feedback to be useful, it must be specific. If you tell me that my work is sloppy, I am not sure what you mean or how

to make it better. If you tell me that the last three lines slant to the left, I can observe that situation and work to revise it. The question is always, What is the evidence? Describe the evidence you see to support what you say.

Teaching students to give detailed feedback clarifies the standards and develops a culture of effective collaboration. It also directly affects the length of the never-ending line because students ask one another for feedback instead of relying entirely on me. They develop the habit of precision in language and thought.

4. Speak about the work, not about the author. Don't say, "You are careless." Do say, "Every line from the third one on gets smaller." The work takes on an objectivity of its own. The lines are being judged, not the person.

After much modeling and critiquing the critiques as a whole class, pairs of students held critique sessions. Before joining the never-ending line, they had critique sessions with three other students. This process worked because they knew the standards, they knew how to critique, and they could actually give one another helpful feedback.

Revision. Once students clearly understood what I expected and what quality work looked like, they were ready to practice with a purpose. One morning, they found a worksheet on their desk and received another for homework. They applied what they had learned from previous drafts to each new attempt. They developed persistence as they practiced ("Not again, Mr. Levy!") until they decided they were ready for their final evaluation.

Teacher feedback. Students worked on this drawing for about a week and received my feedback before completing their final product. They came to me only after three other students had critiqued their work. My critique was the last one before their final drawing.

Final product. Students could do their final work any time they felt ready after completing all the foregoing steps. In more complex projects, I try to have authentic experts from the community be part of the evaluation process. The students are scored according to the rubric they helped design.

Because students worked at different paces, I had a series of six increasingly complex drawings for them to work on after they finished the first. These successive drawings challenged my students and gave them an opportunity to practice the strategies and processes that I was trying to establish as habits. Not all students mastered all six drawings, but everyone learned the importance of striving to do his or her best work. They practiced the processes of planning, reflecting, revising, and giving and receiving feedback.

Most of all, they learned that they are in an environment where everything counts. If I go crazy over drawing a straight line, what am I going to do when the assignment involves something really significant? I teach them to pursue quality in the small things, and they use the habits they establish in more important tasks.

Habits in the Real World

I always try to connect class work to something real in my students' lives. The line-drawing exercises improved the students' handwriting and sense of form. But as a real application of their habits and skills, I taught my students the basic calligraphy alphabet, which they used to create beautiful programs for our seasonal performances of music, poetry, and dance.

Practicing these drawings is a particularly effective way to begin the year because everyone has equal access to the assignment. No one can do it perfectly, so everyone is challenged. No one is left out because everyone can work and improve.

When students have learned this process of producing quality work, they are ready to apply it to more complex tasks. We now go through the same process to develop standards for writing, for presentations, and for major projects. We do not follow the exact steps in the line exercises for everything we do. Sometimes I give more explicit instruction or direction at the beginning. At other times, depending on the effectiveness of the students' work, I recommend additional critique sessions or more practice of discrete skills between drafts. The steps are simply tools and processes designed to help students take more responsibility in producing quality work. They are not the end in themselves.

I don't often hear, "Mr. Levy, is this done?" Now they ask, "Mr. Levy, will you critique my work?" I have been able to vacate the judgment seat to the degree that my students have taken responsibility for their work and have developed the habits associated with striving for excellence. When they apply these habits of mind and work to new challenges, they don't need to rely on me for feedback and support. I get to ask questions rather than render judgments.

And no one misses the never-ending line.

Steven Levy teaches 4th grade at the Bowman School, Lexington, Massachusetts, and consults for Expeditionary Learning/Outward Bound (e-mail:levys@massed.net).

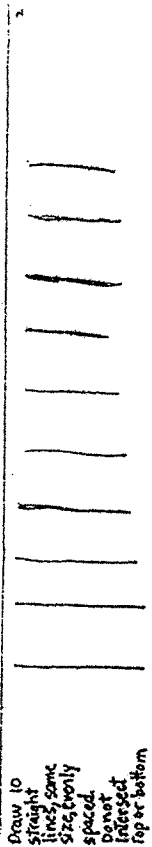
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Sample 1

Try these drawings "Freehand." That means no help from rulers or compasses, etc.

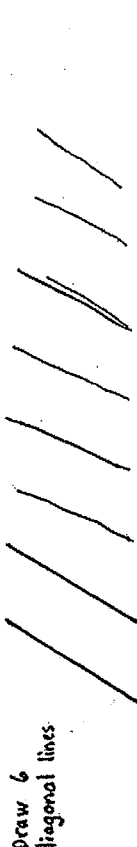
Try these drawings "Freehand." That means no help from rulers or compasses, etc.



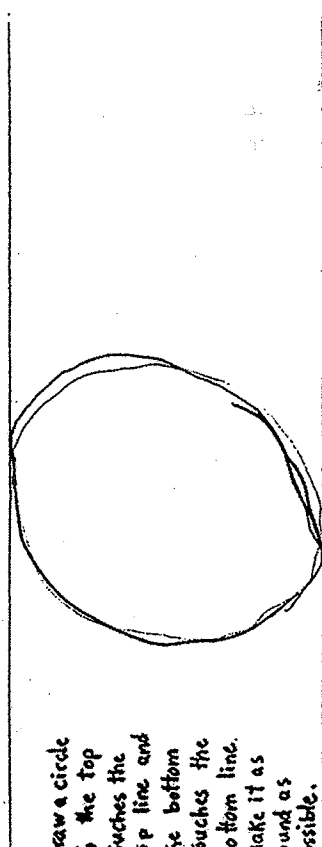
Draw 10 straight lines, some size, evenly spaced. Do not intersect top or bottom



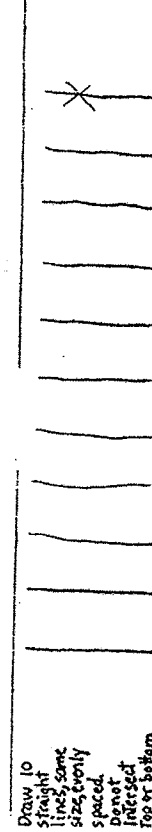
Draw 6 beautiful curves



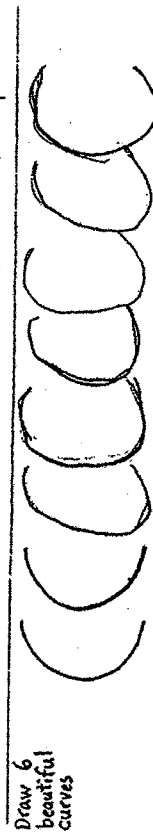
Draw 6 diagonal lines



Draw a circle so the top touches the top line and the bottom touches the bottom line. Make it as round as possible.



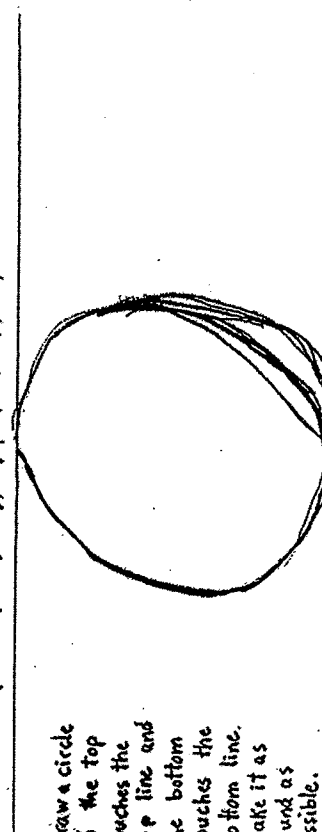
Draw 10 straight lines, some size, evenly spaced. Do not intersect top or bottom



Draw 6 beautiful curves



Draw 6 diagonal lines



Draw a circle so the top touches the top line and the bottom touches the bottom line. Make it as round as possible.



Free hand Drawings
Self-Evaluation

Sample 2

Straight lines

- 1 lines are bent, curved, crooked
lines are all different sizes
lines are not evenly spaced
lines intersect top or bottom

- 2 some lines straight, some crooked or curved
some lines the same size, others different
some lines evenly spaced, some not
no lines intersect top or bottom

- 3 most lines straight
most lines same size
most lines evenly spaced
no intersections

- 4 all lines straight
all lines same size
all lines evenly spaced

Planning + Refining

- 1 I draw dark lines without planning. I did not go over lines to correct
- 2 I drew light lines, then dark, but the dark lines were not straight
- 3 I drew light lines, then I drew several dark lines to get it just right
- 4 I drew light lines, then more light lines until I saw the straightness and then I made a dark line

Improvement

- 1 there is no improvement from beginning to end
- 2 there is some improvement, then they get worse
- 3 there is clear improvement from beginning to end
- 4 each line gets better and better.

What can I do to improve?

- plan more carefully - lightly at first!
- work more carefully
- more practice
- other -



SELF EVALUATION

name _____

date of drawing _____

number _____

Straight lines

1 2 (3) 4

Planning

1 2 (3) 4

Improvement

1 2 (3) 4

comments: I wasn't thinking and I put them to do it together so they got roched.

Curves

1 (2) 3 4 1 (2) 3 4 1 2 (3) 4

comments:

I rushed and put them way to close together so they got messy.

Diagonals

1 2 (3) 4 1 2 (3) 4 1 2 (3) 4

comments:

I tried hard but my pencil wouldn't make the lines go straight.

circle

1 2 (3) 4 1 2 (3) 4

comments:

I messed up on my beginning (I pressed down, too hard) and I messed up trying to fix it

mirror writing-comments:

It was fun. I didn't do it perfectly, but it was very fun.

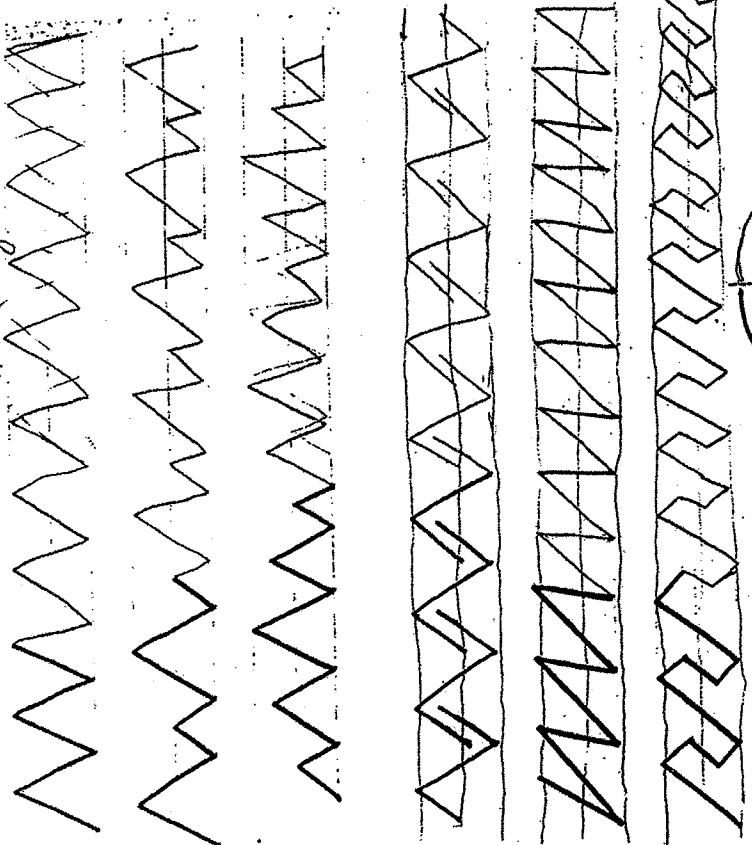


Sample 4

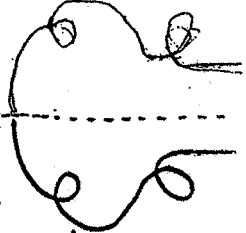
Precision Drawing # 2

complete form across each line.

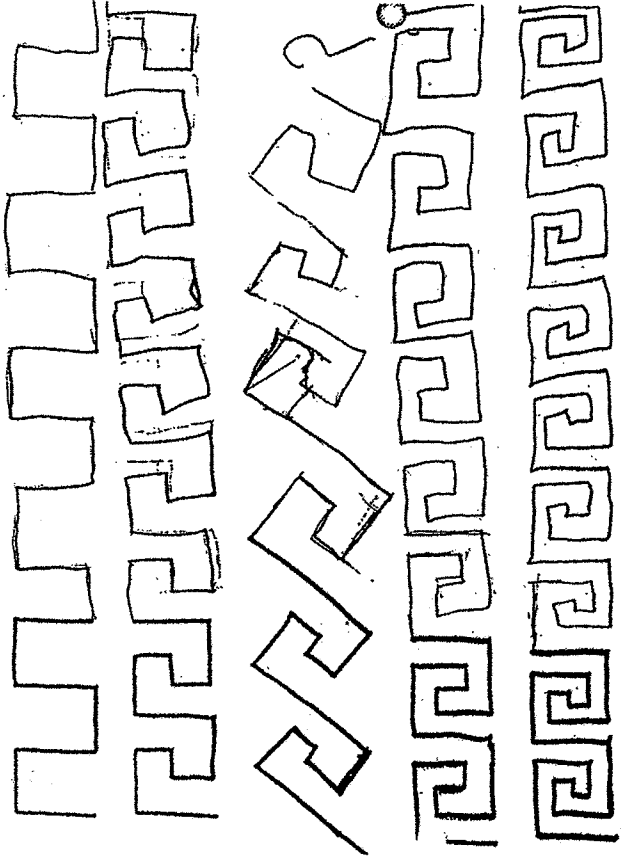
name Joseph 9-11



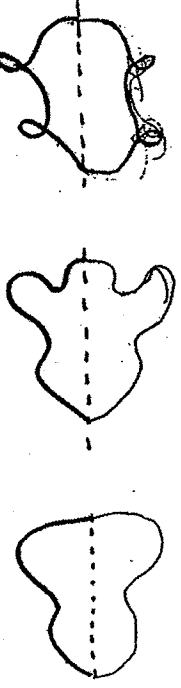
draw mirror image of this form on the other side of the dotted line.



Laura 10/18/5

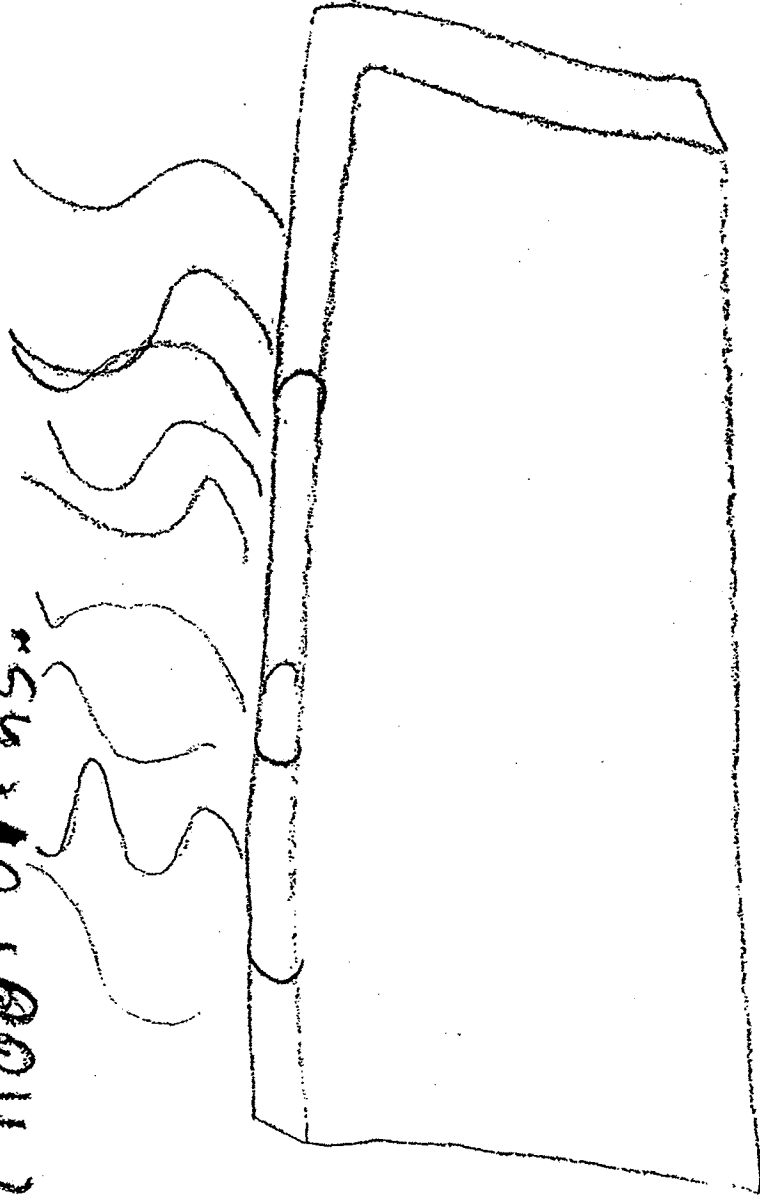


draw the mirror image:



Sample 5

into a roll, put it in the bread pan and
 spread it out so it would fit. We made
 a little **design** on it and baked it in
 the school oven.



Morning verse
We come together from many different places
to learn, to work and to play.
We pause to give thank to all those seen and unseen
Who make it possible for us to be here.
We ask that in this coming day
We may be given a chance to know
honor and respect for ourselves and
each other, for the world and all creation
in our thoughts, in our feelings, and in our
deeds. May our hearts be true.



The End of the Never-Ending Line Artifacts

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