

Chapter Ten

Providing Accountability

Building Excellence

Accountability and Excellence

To students, incentive systems are all about preferred activities. For unmotivated students, preferred activities usually provide the only reason for putting any serious effort into an assignment. These students need short-term goals.

But, as we learned in the previous chapter, there is another key element in the process of building motivation – the criterion of mastery. The criterion of mastery requires that the work be done *correctly* which requires that work be checked as it is being done. You cannot build diligence unless you simultaneously build excellence.

Quality Control

In education we talk endlessly about building excellence and raising standards. Our ability to talk about excellence would seem to be inversely proportional to our ability to produce it.

The primary work environment of children is school. Their work ethic will be shaped by their experience in the classroom.

In the classroom we will try to replace laziness with hard work and sloppiness with conscientiousness. It is natural for us to want higher standards for our students than many students want for themselves. If unmotivated students do not learn good

Preview

- Incentive systems require continuous work check to ensure that students work carefully rather than just quickly.
- Quality control requires designing the work process so that excellence is the natural outcome.
- Say, See, Do Teaching and the creation of independent learning provide the new "production process" upon which the pursuit of excellence can be built.
- Quality control requires that the product be built right the first time. This occurs during a lesson in the form of thorough Structured Practice and continuous work check during Guided Practice.
- When work becomes too complex to scan and check rapidly, it is time for the teacher to get help. Training students to check their own work conscientiously solves the problem.

work habits in our classrooms, they will probably go through life as we found them.

If we are to be builders of excellence rather than just talkers of excellence, we must understand how excellence is built. Excellence will be produced in our classrooms in exactly the same way that it is produced at Caterpillar or Hewlett-Packard or Intel. The building of excellence is called *quality control*.

The goal of quality control is to train students to come up to our standards rather than for us to lower our standards to match their pre-existing work ethic. To achieve this goal we must spend some time learning about the technology of quality control.

Excellent Work from Ordinary People

The Typical Work Force

It is a rare student who wakes up in the morning and says wistfully, "Maybe today they will finally teach me how a bill becomes a law." In fact, many students, in spite of our "anticipatory set," haven't a clue as to the ultimate purpose of many of the lessons we teach.

Some students will go along with us and try their best regardless. Others, however, will take a more utilitarian approach to learning. They will habitually ask the motivational question, "*Why should I?*" Until they get a satisfactory answer, they will remain unmoved by our efforts.

The random assortment of personalities that walks into the classroom every day is known outside of educational circles as "the typical work force." Some are "gung-ho," some are "heel draggers," and most are somewhere in between. To be successful we must get good work from all of them.

Where Does Excellence Come From?

Part of the reason that some students do their best resides in your *lesson*. Obviously, relevant lessons are better than irrelevant ones, and interesting lessons are better than boring ones.

But if you think that the primary source of motivation is in the ability of your lesson to grab the students' souls, keep in mind that the typical work force produces widgets day after day without having a deep love of widgets. In some places they produce excellent widgets, and in other places they produce defective widgets.

Part of the reason that some students might do their best resides in the *student*. Some students learn at an early age that, "If something is worth doing, it is worth doing *right*."

But if you think that the primary source of motivation is the work ethic of your students, keep in mind that the craftsman seeking perfection is the exception rather than the rule. In the classroom, as in the automobile factory, you will have to produce excellence with the typical work force, or you will not produce excellence.

Organizing the Work Force

Both the captains of industry and classroom teachers, therefore, will have to work with the same raw material, the human species with all of its quirks. The question that will confront any leader is, "How do you organize a typical work force to produce excellent work?"

The Goal of Quality Control

The goal of quality control is to train students to come up to our standards rather than for us to lower our standards to match their work ethic.

The Locus of Quality Control

Quality control can take place at any work site in either of two places during the production process:

- **In-Production Quality Control** – during production
- **Post-Production Quality Control** – at the end of production

In-Production Quality Control

Imagine that a worker at an automobile factory, call him Joe, has the job of connecting some electric wires that go from the radio to the rear speakers. To do so, Joe must connect three wires: the *blue* wire on *top*, the *yellow* wire in the *middle*, and the *red* wire on the *bottom*.

However, Joe is new to the job. Instead of doing the job correctly, he puts the red wire on the top and the blue wire on the bottom.

On the production line, a quality control supervisor, call her Carol, walks from station to station checking the work. As she carefully watches the new worker, she notices the error in wiring.

What would follow, ideally, would be a short, painless, and efficient teaching interaction that would correct the error. Carol might say,

“On these speaker wires, the blue one goes on top and the red goes on the bottom. I’ll sketch a diagram on this 3-by-5 card so you can double check.”

In this example, corrective feedback has taken the form of Prompt and Leave with a VIP for quick reference. Teaching has been quick and efficient with little reason for defensiveness. And the job will probably be done right for the rest of the day.

Just as importantly, Carol has done very little work. She has insured that the person responsible for the wiring does the work and does it *right*. She is free to continue walking the production line.

Post-Production Quality Control

Imagine that the error in wiring was *not* fixed during production. At the *end* of the production line, the *post-production* quality control staff takes over.

In the automobile factory these specialists are the quick diagnosis and quick-fix artists. They have a long checklist, and they go through the car piece by piece to make sure that everything works.

Imagine that the inspector, Raymond, is going through his checklist. He tests the ignition, the headlights, and the radio in rapid succession. He turns the fader knob to the rear speakers, and everything goes dead.

“This is the third one of these we’ve had this morning!” he explodes. He turns off the ignition and begins his diagnostic procedure. Finding the problem, he reverses the wires that were installed backwards and hops back into the car to recheck the rear speakers.

Types of Quality Control

In-Production Quality Control

- *Quick (Praise, Prompt, and Leave)*
- *Continuous*
- *Preventative*
- *Cheap*

Post-Production Quality Control

- *Slow (Tear down and rebuild)*
- *Delayed*
- *Remedial*
- *Expensive*

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Post-Production Quality Control Is Expensive

As you can see, the post-production quality control specialist has a far more complex and time consuming job than the in-production supervisor. Rather than investing only a few seconds in corrective feedback, the post-production specialist must *diagnose the problem, take the unit apart, and rebuild it*.

Consequently, post-production quality control is labor-intensive, time-consuming, and exasperating. It also has no effect on the production process. Rather than preventing problems, it only remediates them. New errors are being made as the old ones are being fixed.

This comparison of cost and benefit between in-production and post-production quality control leads to one of the cardinal rules of quality control:

It is always cheaper to build it right the first time.

As the saying goes:

If you don't have time to build it right the first time, when will you have time to fix it?

You may wish to consider these sayings the next time you take a stack of papers home to grade.

Zero-Defects Production

Excellence Is the Primary Product

Zero-defects production is a term from quality management in industry. It refers to designing the entire production process from the ground up so that *excellence is the*

primary product. Assessment is built into *each step* of the production process. Workers are trained not only to do the job, but also to check the job and certify it before passing it along. In-production quality control supervisors simply *augment* the check routines of the workers in a joint effort to build it right the first time.

Errors are, therefore, detected and corrected immediately. An often cited example is the fact that workers on the Toyota production line can pull an overhead cable to stop the production process any time they see something wrong. Every worker is part of a *culture of excellence*.



Post-production quality control is labor-intensive and exasperating.

Excellence Is Not an Add-On

In contrast, naive attempts by top management to improve quality usually focus upon upgrading supervision of the *existing production process*. But the workers are not trained and integrated into the quality control effort. As a result, there is still a large reliance upon post-production quality control, and the quest for excellence “hits the wall” long before the error rate reaches the target that defines excellence.

Workers must be trained to function as an integral part of the quality control process. Production workers at Toyota, for example, receive 500 hours of training just so they can function as members of a quality control circle. That training includes a course in statistics so they can tell whether a defect is the result of a random error or a systematic error.

Zero-Defects Production in the Classroom***Quality Control During the Lesson***

You might think of *Tools for Teaching* so far as a text on zero-defects production in the classroom. To see how all of the pieces of the quality control puzzle fit together, let's return to our math lesson at the board to see the whole picture at a glance.

- **Say, See, Do Teaching:** We have walked the students through the computation one step at a time, checking their work after every step.
- **Structured Practice:** We have walked the students through three or four additional examples of the

computation. While the pace gradually quickens, we are still able to check their work after every step. We are creating *perfect practice*, and the students are approaching *automaticity*.

- **Visual Instructional Plan:** A VIP for the lesson is clearly visible. During Guided Practice, the students will be able to review prior instruction at any time by simply glancing at the VIP.


- **Guided Practice:** During Guided Practice students start working “on their own.” We work the crowd in order to supervise “production,” but very few students need any help. Many students are already at Independent Practice, and needy students have a very weak case for clinging.

- **Praise, Prompt, and Leave:** If a student does need help, we can use Praise, Prompt, and Leave in conjunction with our VIP in order to be gone in seconds. If a helpless handraiser tries to cling, we can immediately switch into an extinction program.

- **In-Production Quality Control:** During Guided Practice we should be relatively *unemployed*. Having been freed from the burden of tutoring helpless handraisers, we can now do in-production quality control by

checking students' work as it is being done.

- **Incentives for Diligence and Excellence:** Since work can now be checked as it is being done, we can employ a criterion of mastery to give students access to preferred activities without creating a speed incentive. Having a near-term goal gives students a reason to work hard.



It is always cheaper
to build it right
the first time.

Dividends After School

With work check done in class for the most part, the after-school hours that you devote to teaching can now be invested where they will yield the greatest return. Better to invest that time in planning tomorrow's instruction rather than in doing yesterday's clerical work.

Of course, some work will go home. Final drafts of essays must be read with words of praise written in the margins, or students will feel that you don't care. And, some paper grading may be left over due to the interruptions and distractions typical of life in the classroom. But at least the bulk of your effort can be directed toward the future rather than the past.

The Traditional Approach To Work Check*The Paper Grading Trap*

American education has a folklore concerning the production of excellence that, unfortunately, has little to do with either motivation or the production of excellence. Teachers take papers home to grade in the hope that this added effort will somehow translate into better learning. Students throw most of these papers into the wastebasket.

The students are trying to teach us a lesson about quality control. When we accept a student's work, we clearly signal that the production process is over. In the students' minds, they are *done* with the assignment. Rekindling their enthusiasm for that same task tomorrow will be like raising Lazarus from the dead.

In addition, by accepting faulty work, the teacher has already taught the students that mediocre work is acceptable. After all, you accepted it. This common error in quality control is expressed in the following rule:

The standard of excellence on any job site is defined by the sloppiest piece of work that you will accept.

Going Over the Papers in Class

Many teachers, in an attempt to keep last night's paper-grading from going to waste, go over the assignment again in class the following day item by item. This is both *very* boring and *very* inefficient – a process guaranteed to render most of the class comatose.

"Would anyone like me to go over problem number *one* from yesterday?"

Imagine that half-a-dozen students actually cared. This means that twenty-four students out of thirty *don't care*. Such an exercise would not create a very good time-on-task ratio – 1 in 5. A rowdy classroom will be the teacher's reward.

Bopping Is Costly

The problems with paper grading described above are all part of the expense of post-production quality control. Post-production quality control is an unavoidable by-product of Bop 'til You Drop Teaching because you have no time to check the students' work in class.

With Bop 'til You Drop, you work hard presenting the lesson, and then, due to cognitive overload, you work even harder during Guided Practice as you tutor the helpless handraisers. Since you are too busy during Guided Practice to check work, paper grading will consume your evening.

In contrast, Say, See, Do Teaching makes work check easier. Having eliminated the need for tutoring, helping

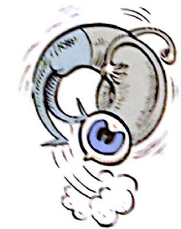
The harder
you work,
the less
excellence
you can produce.



BOP



'TIL



YOU

DROP



interactions during Guided Practice are few and brief. This frees the teacher to spend time with students who want to learn. Work check can be done "on the fly" as part of working the crowd. We will refer to this pattern of work during Guided Practice as "cruising and checking."

If you want to make accountability *expensive*, do it after the lesson is finished (post-production). If you want to make accountability *affordable*, do it in class while the work is being done (in-production).

The chronic overwork of bopping compared to Say, See, Do Teaching creates the following irony:

*The harder you work,
the less excellence you can produce.*

*The less you work,
the more excellence you can produce.*

Checking Complex Work

Checking Takes Time

When you do help an individual student during Guided Practice, you must always *check their work* as a prelude to giving corrective feedback. Since chit-chat spreads across the room in 10 seconds, work check must be done quickly.

Complexity Slows You Down

Your ability to check work as you move among the students is largely a function of the *visual complexity* of the work. If the work becomes sufficiently complex, work check bogs down.

If work check bogs down, you lose your ability to work the crowd and check work. This undermines your ability to utilize a criterion of mastery. As a result, incentives for diligence and excellence move out of reach.

In order to gain speed with visually complex work, we will have to become more efficient. *One* method is for you to become more efficient. A *second* method is to utilize *students* to check work as part of the quality control process.

Checking Work Yourself

Answer Keys

Let's return to math due to its stepwise nature and visual clarity. After we examine work check with math, we can move to more complex assignments like writing.

I mentioned in the previous chapter that a teacher might check math during Guided Practice by carrying an *answer key*. Traditional answer keys, however, won't do the job.

Let's return to our description of the biologically natural way of giving corrective feedback from chapter six. To review, our eye is naturally drawn to the error, and when we speak, we tend to focus on the error.

Traditional answer keys are perfectly aligned with this natural way of doing things. They simply list the correct answer for each problem.

Checking work has always been synonymous with checking the problems that are *wrong*—literally, with a red check mark. Checking work in this fashion discourages students

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and omits any information that might improve performance. It's like saying to the student,

"You messed up. Try again."

A traditional answer key leaves us hamstrung when we attempt to do Praise, Prompt, and Leave. For Praise, Prompt, and Leave we need to be able to see the part of the problem that is right and the part that is wrong *before* we get to the final answer. The part that is *right* would provide the *praise* statement, and the part that is *wrong* would provide the *prompt*.

You could do these checking operations in your head, of course, but it would take too long, and you might make an error. Both of these problems would only get worse as the work became more complex.

Check Masters

To check the body of the problem quickly and accurately, you will need a new kind of checking aid – a *check master*. A check master shows the *entire* problem including the answer. Work check then becomes a series of quick scans which note *matches* and *mismatches* as in the following example of triple digit multiplication.

Student's Work

$$\begin{array}{r}
 276 \\
 \times 598 \\
 \hline
 2208 \\
 2474 \\
 1380 \\
 \hline
 164948
 \end{array}$$

Check Master

$$\begin{array}{r}
 276 \\
 \times 598 \\
 \hline
 2208 \\
 2484 \\
 1380 \\
 \hline
 165048
 \end{array}$$

2208 — **match** — 2208

2474 — **mismatch** — 2484

1380 — **match** — 1380

164948 165048

Give corrective feedback as follows:

- **Match:** praise
- **First Mismatch:** prompt

Your helping interaction might sound like this:

"You have multiplied your 5 and 8 correctly. Double check your 9 multiplication, and re-add. I'll be back in a minute."

Making Check Masters

Since text book companies don't publish check masters, where do you get them? You can prepare them yourself in advance, but this would consume precious lesson planning time. There has to be a simpler way.

If you can, have the kids do it. If the advanced math group is capable of checking their own work, they can provide all of your check masters. If that solution is not practical, find some bright kid with good penmanship who will do it the day before for extra credit.

Keep a file with check masters and VIPs for each lesson together. It will be ready for next semester.

Having Students Check The Work

Getting Help

When you feel defeated by either the volume or complexity of the work check, it is time to *switch strategies*. If you cannot keep up, it is time to *get help*.

Where is the handiest source of free labor in a classroom? The *students*, of course! Work check that would take one person thirty minutes might take thirty people one minute. Teachers have always exploited this logic by having the students exchange papers for grading.

But, you must train the students to check work *carefully* and *honestly*. How do you organize the class to do this?

After all, we wouldn't want students helping out their buddies, would we?

"Keep 'Em Honest" in Math Class

Kids are competitive by nature. We can use this trait to teach them to be both conscientious and honest. To do this we will play a game called "Keep 'Em Honest."

Divide the math class into two teams. Each person on team A is paired with a person on team B. Have these pairs place their desks side by side.

Write a math problem on the board, and give the students a time limit for doing the problem.

"All right, class, you have two minutes for this next problem. Ready? Go!"

Give the students a warning as time runs out.

"Class, you have fifteen seconds."

When time runs out, go through the following check routine.

- "Time! Exchange your papers."
- "The answer is..."
- "Grade them and return them."
- "How many got it right on team A?" (students raise their hands)
- "How many on team B?"
- "The score is now ____ to ____."
- Alright, class, for the next problem you have three minutes..."

Would students on team A let students on team B have extra time to work on the problem? Fat chance! They'll say, "I'll take that!" and grab the paper.

Would anybody on team A cheat for anybody on team B? Not likely!

After the papers are returned, would students on team A let their counterparts on team B hold up their hands if they didn't get it right? What do you think?

The whole routine takes seconds, and each team keeps the other team honest. The teacher tallies the number of correct answers for each team at the end of each problem and adds that number to each team's total score. With every additional problem the score mounts and the tension builds.

Whenever school work is presented in the form of team competition, students think it is a game rather than an assignment. Everybody wins. The students have fun, and you have *no papers to take home*.

Group Competition

Having students check each other's work conscientiously as a by-product of team competition provides us with a general pattern that can be applied to a wide variety of situations. You could, for example, have each of your cooperative learning groups be a team. You might even have the teams form a league with league standings.

Post scores for each team based on how well they do on any given assignment. For work check on that assignment, pair the teams randomly. Let's call one of the pairings team A and team B.

Have team A and B exchange papers so that each individual on one team is responsible for scoring the work of an individual on the other team. Provide a scoring protocol so that the students' grading will be up to your standards. Score as follows:

**The standard of
excellence
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- All correct answers by each team are worth 1 point.
- Any error that team A finds in the work of team B counts as one additional point for team A.
- Papers are then returned for double checking. Any *error in checking* made by one team gives 2 additional points to the other team.
- Total team points for the assignment are computed by adding the points gained through work check to the points gained for correct answers.

Once again, the students will check work conscientiously while keeping each other honest. This model can be applied to any subject, even a foreign language class.

Foreign Language Class

A high school foreign language teacher complained to me of her "lost weekends." She described filling her car with students' language notebooks three times a semester, and getting nothing done all weekend except grading six weeks worth of language assignments.

To reduce her workload while making work check more relevant, I suggested reorganizing the class into workgroups. She divided the room into groups of four with a student in each group who could serve as team leader. She then had the leaders drill their group members for the upcoming test. Test scores jumped.

She then developed a *competition* between the groups. Review prior to the test became far more task-oriented and intense. Again, test scores jumped.

Next, she developed a VIP for each type of language exercise contained in the notebooks. She drew the VIPs on butcher paper and posted them so that the students had a good visual guide as they checked work.

The last step in problem solving was to implement the Keep 'Em Honest format for work check. She had the

teams exchange language notebooks for checking and double checking.

It worked like a charm. The teacher said, "Last week we checked the notebooks in twelve minutes flat! No more 'lost weekends!'"

Quality Control Circles

Building Work Groups

There are many students turning in many assignments, and there is only one teacher. If you are going to monitor work as it is being done, you will need some help.

Teaching students to check their own work should be part of any lesson. How else would students know whether or not they are doing it right?

In industry, workers are organized into quality control circles in order to implement quality management on a day-to-day basis. As mentioned earlier, workers receive extensive of "in-service training" so they will have the tools to function as part of a quality control team.

The same logic applies to the classroom. If the students understand the assignment, they should be able to check it. The ability of students to check their own work is, in fact, a crucial part of any meaningful definition of mastery. This is as true for written work as it is for computations.

Often our work groups are already organized for cooperative learning or laboratory work. Having these groups help with work check simply represents an extension of their responsibilities.

A New Perspective on Excellence

The big step in thinking about excellence is to realize that it is something you build, not something you are occasionally given.

Work Check with Writing

When checking written work, it is important to separate two different functions:

- **Copy Editor:** The copy editor is responsible for producing clean copy – spelling, punctuation, etc.
- **Editor-In-Chief:** The editor-in-chief is responsible for the coherent development of ideas.

You are better off farming out the copy editing as much as possible so you can focus on being editor-in-chief. Copy editing is not only time consuming for you, but it also produces “bleeding papers” which students find most discouraging. If the students can do the copy editing without the paper getting bloody, they will be happier, and you will be free to focus on content.

Check Groups for Copy Editing

Imagine that you have organized your class into partner pairs for partner learning. Combine two sets of partner pairs to make a “partner square.” For copy editing, each student’s paper would be checked by one member of the square and then, again, by another member of the square.

Work check can be simplified in the early grades by focusing on one aspect of writing like the use of quotation marks in dialog. More advanced students can be taught the hypercritical markings used by copy editors so that writing can be checked in a systematic fashion that is understood by all.

Reducing Your Work Load as Editor-In-Chief

Much of your editor-in-chief work can be done *in-production* as you “cruise and check” during Guided Practice. You can scan written work without an answer key, and because you are mobile, you can confer with a student several times during Guided Practice. This helps you shape the final product as it is being written. Such brief interactions might sound something like this:

“You have two ideas in this topic sentence. Let’s make *this* one the topic of one paragraph, and *that* one the topic of the following paragraph.”

The students can do much of the work of the editor-in-chief when it is included in the writing process. As mentioned previously within the context of Say, See, Do Teaching, the teacher could employ their work groups to implement Read Around Groups. In this format the teacher would have students read each other’s papers marking strong passages in the margin. The teacher could then read the best papers to the class and brainstorm those features that make a particular paper stand out. From this collaboration the class could construct a model to use for writing the second draft.

Training with “the writing project,” usually sponsored by a local university, will give you many additional options for making writing an interactive process that includes both checking and editing. Such training for an entire faculty will help them to implement writing across curriculum areas.

New Perspectives

The more the teaching format resembles a series of Say, See, Do Cycles, the more work check and corrective feedback can be integrated into the learning process to be performed by the students. In contrast, the more the teacher monopolizes the learning process, the more work check and corrective feedback are separated from learning to be done by the teacher as a separate job.

In addition, the more adept you become at quality control, the more you teach the students to be independent of you as they learn. Rather than doing all of the work yourself, they do not only the work but also *the work check* while you supervise.