Introduction

Why a Curriculum Manual

For the last several years there have been as many as three curriculums in most classroom—the district's written curriculum, the textbook, and then, of course, what the teacher actually teaches. But three major forces say we must get organized.

First, research has shown that "less is more." If we try to cover too much, very little is learned in any meaningful way. Research also shows that learning must be applied and be organized in the mind of the learner. Most particularly important, it seems, is interrelating the broader aspects of understanding with the component details. Thus, curriculum must be focused, limited, and organized.

Second, textbooks have become overwritten, which is expained more fully in a few pages. A textbook, as a curriculum guide instead of teaching tool, does not make curriculum focused, organized, and richly meaningful.

Third, as of December of 1997 all but one state has mandated some form of curriculum for its schools. But very few if any of the states have articulated standards in all subjects in all grades. Most states set broad goals or identify benchmark years and then only in a few subjects. This leaves it to the local districts to turn the state guidelines into a fully detailed curriculum, which is still a major task.

So, the purpose of this manual is to provide a model for districts to develop their own curriculum or articulate the state mandates across all grades.

How Our Standards Were Developed

More than six years ago we began collecting national standards, state curriculum guides, recommendations from experts in the different subject areas, and sample district curriculum from various states. Then we held more than 135 workshops in the fifteen subject areas included in this manual. Using the samples and guides we had collected and the models developed by teachers in our previous workshops, participants continually honed the standards to make them better and better. They filled in gaps, removed excessive duplication, clarified the meaning, and refined the wording to make the standards understandable to teachers and parents.

The standards and their performance indicators found in this manual are the result of thousands of teacher-hours spent researching, analyzing, and discussing curriculum using their years of expertise and dedication to the goals of education.

Purpose of These Standards

With all American educators in all the schools in all the states writing standards, a great deal of money and time will be wasted if everybody starts from scratch. Also, all those educators and all those schools and all those states will end up writing very similar standards. So can't we find a common ground from which to adapt? This manual is that common ground from which educators can begin to write their own curriculum for their own state and district. These standards and performance indicators are not perfect and are not the final answer. Indeed, the perfect or final set does not and will not ever exist.

However, teachers and administrators should be deeply involved in the process. If they are not involved, they will not believe in the standards, they will not honor the effort of developing them, they will not embrace them in their classrooms. Therefore, it is our intention that these standards would be carefully examined, heavily discussed, and adapted by the educators who will use them.

How to Use This Manual to Guide Standards Development

We recommend you begin by reading the section "An Explanation of Standards," which is written as if you were going to guide the development of course- and grade-level standards. Overheads are also included, which will help you understand, but more importantly, are to be used as you guide your staff through the task. You will, of course, also want to become familiar with the standards themselves. We recommend you read through several pages in several subjects at several grade levels, beginning with what you know best. Read to understand the format itself, the language we use, and the organization of standards as explained in "An Explanation of Standards."

How to Use the Diskette

The included diskette includes all of the standards and performance indicators exactly as you see them in this manual with each subject area in a separate file. The diskette can be opened by a variety of word processing programs on either Macintosh or DOS/Windows computers. If they do not match your word processing program, which only very rarely happens, then they will open in ASCII and you can then paste them into your word processor.

We recommend you copy the contents of the diskette onto a computer hard drive and file the diskette safely away. Now as you work with your staff to develop your final set, make changes on your hard drive copy. This will save you hours of time and will give you a set all in a single format.

Organizing the Curriculum by Standards

Very nearly all important accomplishments, whether by an individual or a group, have started with clear goals. It is hard to know if you have arrived if you don't know the destination. It is hard to know when you have succeeded if you don't know what success looks like. Also, defining the goals helps develop the plan to get there. Because education is such a dynamic and complicated undertaking, we need a complicated and dynamic set of goals, which we call curriculum.

One of the sad changes in education in the 1960's and 1970's was the loss of an orderly and focused curriculum. All indications are that we need to again develop proper curriculum. That is why 49 states and most districts are trying to write standards. Every teacher, student, and parent needs to know the goals in each subject in each grade-level. But in the meantime, the world has changed very much and we have learned a great deal about the learning process. Thus we do need a new curriculum. The purpose of this manual is to provide a model curriculum for educators to adapt to their own situation. It is not the perfect curriculum, but it gives a starting point for developing very specific course-level standards aligned to the broad goals written at the state level.

1 An Explanation of Standards

Course-level standards are the specific tools students need in each grade or course of a subject area. They define exactly what students will need to know, be able to do, and be like to complete a course or grade. Standards are tools which can be used to accomplish something important. We want students to leave school with a box full of tools they can use every day. When they get out in life, they can pull these tools out and use them.

1.1 Standards Are the Foundation of Courses

Here are some things we believe strongly about standards.

Standards Must be Articulated K-12 to Have Maximum Impact
Schools need to start teaching the standards in a developmentally appropriate manner in kindergarten and keep teaching them all the way through grade 12.

Standards are the Center of Instruction in a Course
Everything we do in the classroom is designed to help students achieve the standards.

One to Ten Standards Define the Minimum Requirements for Passing a Course
This requires you to limit what you'll try to teach to no more than 10 important things. If you set out to teach more than 10, you may be biting off more than your *students* can chew.

Standards are Written in Simple Language
The goal is for students to take ownership of the standards, and students aren't going to take ownership of something they can't understand.

Standards are Defined by Performance Indicators
These make it clear what is to be learned. (Much more on this shortly.)

Students Demonstrate Possession of the Standards
Students are expected to demonstrate possession of the standards through competency, productivity, and performance assessments. If they can't demonstrate possession, they shouldn't be promoted until they can.

See Transparency 1, "Course-Level Standards"

1.2 Benefits of Using Standards

Twenty-five years ago textbooks were designed to provide students with the precise learning they needed in whatever courses they were taking. However, with the onset of statewide textbook adoptions and an increased emphasis on making a profit, textbook companies have begun to fill their textbooks with significantly more than is necessary. Today's average textbook weighs 7.5 pounds, takes 1.7 years to teach well, and contains 280% of what is important for a course.

Textbooks have become so loaded with excess information that teachers are forced to move through the material at a furious pace. They can only *hope* students pick up the concepts important to the course; there's rarely time to do much more.

The result of all this is that it's difficult to hold students accountable for their success in courses. In most courses, teachers give students a series of assignments and tests, then average them to derive quarter, semester, and final grades. Students don't really have to understand the important concepts in any course. They simply have to know enough correct answers to pass the tests.

To be more successful in the classroom, teachers need to define concisely what is important for students to learn in each course. By doing this, they create a set of course standards. These standards should drive everything that happens in a course. They define exactly what teachers are supposed to teach and what students are supposed to learn.

Defining such a precise set of standards has been the goal of schools across the country for years. If we were able to total the number of hours spent by educators around the country laboring to create usable standard sets, the number would be astronomical. In any individual school district attempting this task, it can take years to accomplish and cost thousands of dollars.

In the classroom, standards provide clear guidelines for what you teach. They also define for students what it takes to be successful in a course. All instruction should be centered around the standards, and they are the basis for designing performance assessments as well. They also make it easier to integrate instruction between subjects.

At the school or district level, standards provide a consistent format between subject areas. They also provide districts a means of gaining control of their curriculum without a great expenditure of time and money. They provide more consistent and professional communication between school and parents. Finally, standards are the basis for implementing many new

practices, such as student-active learning, teaching students to produce quality work, and performance assessment.

See Transparency 2, "Benefits of Standards"

1.3 Course Content and Course Abilities

There are two different types of course-level standards: course content and course abilities.

Course content describes what students should know and understand in courses. It is the core material, the meat, of the typical course. Here are some examples of course content:

- ► Understand the importance of oceans and water to our planet.
- ► Understand fractions.
- ► Be able to write a quality paragraph.
- ► Possess a chronological perspective of history.

Course abilities are the skills students need across the curriculum. They are the process skills which you will integrate with the course content to create highly meaningful activities. Here are some examples of course abilities:

- ► Conduct research in science.
- ► Apply math to life through higher thinking, communications, goal-setting.
- ► Possess technical skills.

See Transparency 3, "Kinds of Standards"

There are two type of course abilities. The first concerns those abilities that students will need in all subjects, regardless of grade level. Typical examples include the following:

- ► **Higher thinking**: analyze, evaluate, classify, predict, decide, generalize, solve, compare, simplify.
- ► **Communications**: present, persuade, collaborate, explain, recommend.
- ► **Goal setting/attainment**: brainstorm, envision, research, plan, organize, persist.
- ► **The quality process**: plan, draft, analyze, and revise when producing products.

The second type of course abilities are those abilities that are specific to each subject. These course abilities usually stay the same within a given subject, K through 12, but the performance indicators would be adjusted to an appropriate level for each grade. Here are some examples:

For language arts the specific course abilities may include:
- ► Be able to read and enjoy literature.
- ► Be able to use mass media.
- ► Be able to conduct research.
- ► Possess technical skills.
- ► Possess technical language skills.

For social studies, specific course abilities may include:
- ► Be able to use mass media.
- ► Be able to conduct research.
- ► Possess technical skills.
- ► Solve problems based on historical information.
- ► Apply knowledge in solving problems and making decisions.

For science, specific course abilities may include:
- ► Be able to conduct research.
- ► Possess technical skills.
- ► Possess technical language skills.
- ► Use a variety of strategies to solve problems.
- ► Use calculators, computers, and other technology.
- ► Use the scientific process.

For math, specific course abilities may include:
- ► Be able to conduct research.
- ► Possess technical skills.
- ► Possess technical language skills.
- ► Use a variety of strategies to solve problems.
- ► Use calculators, computers, and other technology.
- ► Apply knowledge in solving problems and making decisions.

See Transparency 4, "Course Abilities Generalized Across the Curriculum"

The course abilities provide a "menu" of process skills from which teachers can draw when developing activities which integrate the course abilities with the course content. While the course content is specific to a grade or course, the course abilities are similar from course to course, and even from subject to subject. They are the process skills which are integrated with the course content to create meaningful activities. Teachers should regularly teach the course abilities to students, but students are not held accountable for demonstrating them in the same manner that they are expected to demonstrate the course content.

To show you how course abilities and course content come together, Transparency 5 shows sample standards for eighth grade math.

See Transparency 5, "Math Standards, Eighth Grade"

1.4 Chunked and Ongoing Standards

Another way of classifying standards is to look at them according to the time span and singularity of focus with which they are taught:

Chunked standards are taught in a specific unit and last for a specific period of time. For example:

- ► Understand the causes of weather.
- ► Be able to apply ratios and percentages to real-life situations.
- ► Understand payroll procedures.
- ► Be able to catch, throw, and bounce a ball.

You would teach these standards for days, weeks, or months and then move on to a new set of standards.

Ongoing or **stretched standards** are taught over a longer period of time and are integrated with or spaced between chunked standards. Most course abilities are taught as ongoing standards. They usually contain learning which is acquired through repeated practice. Here are some examples of this type of standard:

- ► Possess a chronological perspective of history.
- ► Be able to write quality paragraphs.
- ► Appreciate different forms of music.
- ► Understand the nutritional needs of society.

You would teach these standards by weaving them into many different types of assignments over a long period of time. Few students, for instance, would learn how to write a quality paragraph in a single lesson or unit. This is a skill developed with repeated practice and critique.

See Transparency 6, "Types of Standards"

1.5 Defining Standards by Performance Indicators

Once you have determined the standards you'll teach, it's time to move on to developing the performance indicators for those standards. Performance indicators tell exactly what is to be taught and learned in the classroom through the assignments you give. They are the basis for the daily lesson goals, determining the order of instruction, and assessing student progress toward completion of a standard. Performance indicators give standards their real power by describing the details, pieces, and specific criteria for each standard.

See Transparency 7, "Performance Indicators"

Earlier we discussed nine eighth grade math standards. Transparency 8 shows standard three from that list, along with its performance indicators A-G. This is a list of what you would teach your students so they would possess the standard of being able to solve consumer-related problems.

See Transparency 8, "Math Eight, Standard Three"

1.6 Wording for Standards and Indicators (Know and Understand)

When designing standards and performance indicators, we have to build in *both* knowledge and understanding. We must balance teaching students the raw facts with providing learning experiences that let them convert those facts into understanding. The result gives us a complete look at whether the child has grasped the material thoroughly.

Understanding: Most standards in Ten Sigma's *Course Standards by Grade Level* manual are written at the understanding level, which we define to mean the upper levels of Bloom's taxonomy (apply, analyze, synthesize, and evaluate). One reason we've phrased them this way is because they have no upper limit; there are no limits to how well a student can truly understand a standard. This allows for a wide range of performance and for greater challenge for the best students.

Knowledge: Most of the performance indicators in the manual are written at the knowledge level, which we define as the lower levels of Bloom's taxonomy (know, comprehend). Performance indicators represent the core pool of knowledge which all students need to possess. They represent the details and pieces that need to be learned. You can objectively test the knowledge level to determine whether students have possession of the facts, details, and definitions of a course.

Balance: Our goal is to have a balance between learning at the knowledge level and understanding level. Students should be expected to acquire a basic pool of knowledge and held accountable for demonstrating possession of that knowledge. They should also be expected to develop their understanding through carefully guided performance activities and then demonstrate their understanding on performance assessments.

See Transparency 9, "Wording of Standards"

Transparency 10 shows a complete set of standards with performance indicators for eighth grade math. These standards would be posted, sent home to parents, and become the center of instruction and assessment for the eighth grade math class.

See Transparency 10, "Math 8, Standards and Indicators"

1.7 Using Standards

Using Standards to Plan Instruction

Standards are the center of what happens in a course all year long. The key to using standards successfully to plan instruction is this: teachers should devote approximately 70% of their teaching time to defining, teaching, and holding students accountable for the standards. Fifteen percent of the remaining time should be spent reviewing and enriching the standards from previous years. The other 15% is used for the introduction of next year's standards and teachable moments.

See Transparency 11, "Using Standards to Plan Instruction"

Using Standards in the Classroom

In a traditional classroom, often only the teacher knows the curriculum. In a performance-based classroom, everyone— teachers, students, and parents—knows what's being taught and what is expected. This happens only if teachers make sure everything that goes on in the classroom focuses on standards. Here are some of the ways teachers do this:

- Post standards for all to see. Post the standards on classroom walls, give copies to students, and send copies home to parents.

- Develop assessments to test students' possession of standards and performance indicators. Develop competency tests to assess performance indicators. Develop performance assessments in which students must use the standards to perform real-world tasks or produce real-world products.

- Give students the requirements for succeeding in your courses. They can't meet your expectations if they don't know what they are. If you are going to require students to pass a series of competency tests, demonstrate possession of standards by earning a predetermined number of performance assessment points, and demonstrate quality skills by producing a number of quality products, *tell them up front.*

- Provide instruction to assist students in meeting the course requirements. Develop students' knowledge by teaching the performance indicators. Develop their performance skills through performance activities.

- Promote students based on their ability to demonstrate possession of standards (competency and performance).

See Transparency 12, "Using Standards in the Classroom"

1.8 Standards Should be Shared with Everyone

Standards need to be shared with all concerned: teachers, students, and parents. Print them on large sheets of paper and post in the classroom to remind students of the focus of the course. To avoid confusion, we recommend posting only the standards and not the performance indicators. Then, while you are focusing on a specific standard, post the performance indicators for just that standard.

Many school districts report very positive results from printing standards on leaflets and passing them out to parents at conferences. This works especially well in the elementary schools. (To lessen confusion, only the standards should be included in leaflets, not the performance indicators, unless parents specifically request them.)

2 Developing K-12 Course-Level Standards

Traditionally, curriculum development is a long, hard, and often fruitless task. The first problem is that educators rarely establish a clear and consistent format for writing consistent standards between subjects. The result is curriculum for one subject that bears very little resemblance to curriculum for any other subject. The second problem is that the development process generally occurs after school. Teachers are tired, and after-school responsibilities lead to inconsistent teacher attendance during the development process. Finally, there are few quality examples of course standards to follow. Standards from the state department usually don't break down the standards into courses. Commercially sold databases full of standards are generally not consistent in format and level of expectation. The samples secured from other districts are often less than quality.

The goal is to design a quality set of K-12 course standards and performance indicators for all subject areas which are consistent in format, articulated K-12, meet state requirements, and are done in a reasonable time frame. With that goal in mind, there are several steps to follow to design quality course standards:

- ► Develop consistent rules for all departments to follow.
- ► Secure quality sample standards to share with staff.
- ► Explain the procedures that departments will follow.
- ► Set deadlines for developing a draft set and making recommendations.
- ► Make recommendations for proceeding.
- ► Distribute all pertinent material to department members.
- ► Pilot-test the standards for one year and make revisions.
- ► Submit to board for formal adoption.

2.1 Develop Consistent Rules for All Departments to Follow

To avoid creating inconsistent standards, everyone should agree to a set of ground rules to follow during the writing process. When everyone abides by the same set of guidelines, you are much more likely to produce consistent standards. Here are some we suggest:

- ► Write ten or fewer standards per course. This may seem like too few to teach over the course of a whole year. Remember, however, that one of the problems with the traditional system is that teachers try to teach too much. We need to pare down the curriculum to those essential skills that can be taught well in the time we have.
- ► Write at the "understanding" level (understand, be able to).

- Articulate the curriculum on a K-12 basis.
  - Carefully sequenced.
  - Developmentally appropriate.
  - Duplication and gaps removed from content standards.
- Define each standard by 2 -10 performance indicators.
- Write in simple, short, and clear language.
- Use language that students and parents can understand. Some educators try to write in highly formal, technical language. They feel this gives their standards a more "professional" feel. The unintended result, however, is often that no one outside the education industry can understand them.
- No jargon, if possible. Ask yourself about the jargon you want to use, "Would a parent understand this without explanation? Would a student?" If you can't answer "yes" to both questions, rephrase to eliminate the jargon. A word or term you have to explain over and again may be wind up being little more than a technically precise headache!
- Keep it concise. Avoid any extraneous words. The simpler and shorter your message, the greater the likelihood that students and parents will understand.
- Focus on what students will end up with, not what students will do.
- Write in outline format.
  - Include a cover page that gives the subject and any other necessary facts.
  - At the top of each page, note, "[Subject] Standards—[grade or course]".
  - Number the standards and state each in bold type.
  - Letter the performance indicators and indent them under each standard.
  - Use the same font throughout to give a professional look to your finished document.
  - Put only one course on a page.

2.2 Secure Sample Standards to Share with the Staff

It's very difficult for a group of teachers to sit down and design a quality set of standards with no samples to work from. Concrete examples seem to provide stepping stones or jumping off points from which they can more quickly and appropriately proceed. There are several places from which you can get examples:

- **State standards or curriculum guides**: Considering the emerging power of state level curriculum rules, this will probably be the most important step. In fact, we recommend that you double check your final work to make sure you haven't missed anything your state requires.

However, almost all the states' curricula are written at a very broad level or for only a few grade levels. What you will want to design is a curriculum that turns your state standards into specific standards for every grade and course.

- **National standards:** National standards are an essential tool. They help you ensure your standards are aligned to a national source which has researched long and hard to prepare its recommendations. National standards, however, are not available for some subjects and are usually written in a general format. They don't tell you where the specific standards fit within grades and courses. So, like the state standards, they are a good foundation to start with as you build your own set.

- **Samples from other districts**: Checking out what other districts are teaching in a particular department will be helpful. Secure four or five samples from different districts, look them over carefully and then eliminate the weaker sets. In the process, you're likely to glean some good information you can use or adapt to your own district's needs.

- **Table of contents from textbooks:** The table of contents from textbooks can be a valuable resource. They can help you do a bit of agenda setting in determining what to include in your standards. However, textbook companies have generally expanded their curriculum far beyond the ten standards per course rule and often overload the course with less important details.

- **Standards purchased from a commercial database**: At this time, we have not found a commercial database which is worth its expense. Ten Sigma doesn't recommend including these as part of the sample-gathering process.

- **Ten Sigma's *Course Standards by Grade Level* manual:** We have worked long and hard to make this the best possible source of standards. These standards are research based, aligned with national standards, designed by teachers in over 130 workshops, and consistent in format across all subjects.

See Transparency 13, "Secure Quality Samples of Standards to Share With Staff"

2.3 Explain the Procedures Which Departments Will Follow

The goal is to design a complete set of K-12 course-level standards that meet all of the criteria of the "rules" page you have developed. The steps you should follow are:

- ► Agree as a department on ten or fewer standards in every course.
- ► Define each standard by performance indicators.
- ► Match the standards and performance indicators to state requirements to be sure that all state requirements are included.
- ► Share standards with the rest of the staff and solicit their approval and recommended changes.
- ► Pilot-test the standards and performance indicators for one year.
- ► Post them on the wall, by the deadline.
- ► Teach to the standards for one year (design instruction and assessment around the standards).
- ► Keep track of changes to recommend.
- ► Solicit recommended changes from staff members not on the committee. This is a task for department representatives.
- ► Revise the set of K-12 standards and indicators as a department by discussing and analyzing recommendations.
- ► Submit K-12 standards and indicators to the board for formal adoption.

2.4 Set Deadline for Developing a Draft Set and Making Recommendations

Set a series of deadlines to keep the development process on track. Include:

- ► A deadline for securing any pertinent material to be duplicated and distributed to the staff.
- ► A date when the set of draft standards and performance indicators will be completed for all courses K-12 in each department.
- ► A date to have input back from the rest of the staff regarding acceptance and recommendations.
- ► A final date for standards and indicators to be posted and used in the classroom as the center of instruction and assessment.

2.5 Make Suggestions for Proceeding

The procedures of every department will vary depending on its size, how much the members have already worked together, and how organized the curriculum already is. Here are some suggestions for making the process more effective and efficient:

- ► Use the overheads in this manual to explain course-level standards and performance indicators and how to use them in the classroom.
- ► Discuss and develop 5-10 program standards which describe the goals of your subject area for students who have attended your school district for thirteen years. Don't get too bogged down in this step. Write a tentative list which you will bring to final quality after completing the course-level standards.
- ► Divide into appropriate subgroups (such as primary, intermediate, junior high, and senior high, or whatever fits your situation).
- ► Have subgroups share their work with the large group and have the large group evaluate for clarity, scope and sequence, and alignment with state and district guidelines.
- ► Use one of the two processes below to develop the standards and indicators.

Have the complete set of standards and performance indicators typed up. Have it edited for district-wide consistency of format, style, and language.

Call a meeting, if necessary, after completing the draft set and prior to submitting to the staff to check the printed standards and performance indicators for accuracy and clarity. If a meeting cannot be held, an individual or small group should be assigned this task.

2.6 Distribute All Pertinent Material to Department Members

To help department members succeed in their task, distribute to all members of selected departments:

- ► The rules you've agreed to follow
- ► Transparencies 1 to 14
- ► Sample standards (Samples 1-11)
- ► Deadlines
- ► Procedures
- ► Recommendations for proceeding

Here are a few more things to bear in mind:

- ► Make hard copy sets of each of the pertinent items.
- ► Go over the material with the department leader.
- ► Make the deadline dates clear to everyone.

2.7 Pilot Test Standards For One Year and Make Revisions

The next step is to get the staff to agree that standards and performance indicators, on a draft basis, will be posted and used in all courses as the basis of instruction and assessment for a minimum of one year. During the year, teachers should make tentative additions, revisions, and deletions to the standards. After the year, all revisions should be submitted to department leaders to be considered in the process of preparing the standards for formal adoption.

2.8 Submit Standards to the Board for Formal Adoption

Once the staff has agreed upon a set of standards and performance indicators, pilot-tested them for one year, and made final revisions, they should be presented to the Board of Education for formal adoption.

See Transparency 14, "Developing K-12 Course Standards"

In Conclusion

As we said at the beginning, because education is such a dynamic and complicated undertaking, we need a complicated and dynamic set of goals. This means that your standards will need constant supervision and regular reevaluation.

But most importantly they need to be applied. They need to become the basis of assessment, instruction, and decision-making, such as text-book purchasing and student promotion.

Once you have written goals for every grade and subject, you have only begun. Then you need to do what must be done to accomplish them.