

Get It Done!: Writing Informational Text to Make Things Happen

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Dedication

To Connie Bates

For friendship beyond all calls of duty

You fill our hearts

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Chapter One: Laying the Foundation

The three of us have been thinking about writing this book for many years. Its purpose is to explore how to teach the composing – and also the reading – of informational texts. Our goal is to do so in such a way that what is learned will develop both disciplinary understanding *and* real world applications of such text structures so that what students learn can help them not only in school but also in their daily lives.

Our great mentor is the famed researcher George Hillocks. While many well-known writing instructors seem to have the goal of helping students become highly accomplished writers, George’s ultimate end, or “telos”, is more nuanced: he wants students to do intellectual and democratic work through their reading and composing. That’s the reason for our title: *Get It Done!*

Though we were planning to write this book anyway, the wide-scale implementation of the Common Core State Standards (CCSS) makes it exceptionally timely, since the CCSS designates informational/explanatory texts as one of the three major text types to be taught across grade levels and across disciplines. In fact, informational/explanatory text types get some special privileging: in high school content area classes and even in English classes, the teaching of such informational/explanatory text-types along with the teaching of argument is supposed to predominate. Such an emphasis on informative/explanatory texts will require all teachers in all subjects to deeply understand how they work, how to teach them, and how to help students use them to get real work done.

As cited in the introductory CCSS documents: “Evidence concerning the demands of college and career readiness gathered during development of the CCSS concurs with NAEP’s (the National Assessment of Educational Progress) shifting emphases: standards for grades 9–12 describe writing in all three forms (narrative, argument, informational/explanatory), but, consistent with NAEP, the overwhelming focus of writing throughout high school should be on arguments and informative/explanatory texts.” (retrieved from CCSS website, 8/11/11). [MARGIN: CCSS CONNECTION]

Standards in the early grades clearly lead towards this end, with emphases on gathering evidence, structuring texts in various ways for various effects, etc. The CCSS is vertically aligned and include standards for literacy in the disciplines. Throughout the CCSS document, there is continual reference to issues of what is known to rhetorical stance, a consideration of the author’s “purpose, task and audience”. [MARGIN: CCSS CONNECTION]

Throughout this book, we’ll explore why we think such an emphasis is warranted by exploring the question: “Why read and write particular kinds of informative/explanatory texts?” – or, as we will frame it: “Why think and write in informational/explanatory *thought patterns*?” We will also explore this question: “How can we leverage the special opportunity of the CCSS for the most vital kinds of teaching and learning?”

As we’ll soon see, the teaching and learning of informational text structures offers some unique challenges, including defining what constitutes this set of text types. So we’ll begin in this chapter by asking and answering the question: “What defines an informational/explanatory text?” as well as “What work do these kinds of texts get done?”, or to phrase it another way: “How do informational/explanatory text structures help people do what they want to get done in different situations?”

There is lots of interesting and exciting work to do. Let's get started!

What is Informative/explanatory writing?

Let's take a look at how the kinds of texts the CCSS identifies as informative/ explanatory play out in real life and to help people get things done. In this way, we can see some of the real world purposes served when we teach these kinds of thought patterns.

At this writing, Jeff has just returned from a life-long dream adventure. He spent three weeks floating down the Grand Canyon on a private raft and kayak trip with his daughter Jasmine and 14 other friends. The planning for this exciting trip was in the works for years.

Jeff first developed the desire to float the canyon when he was 12 year old Boy Scout by reading about the river explorations of John Wesley Powell. Forty years later, his dream came true in the most spectacular way.

In the lead up to the trip, there was a lot of emailing going back and forth amongst the participants. Early on, the first text type they employed seemed to be mostly **naming** and **listing**: The group named what they thought they would need and made lists of meals and snacks and cook equipment; emergency and rescue gear, and so on. The items the group actually took varied substantially from these early lists, but the lists acted as placeholders so nothing important would be forgotten. Next, there seemed to be a lot of **summaries**: summaries of where the group was in terms of gear organization, summaries of the trip itinerary, of training regimens and the like. The summaries ensured everyone was informed, up-to-date, and on the same page.

Since Jeff was kayaking and the Glen Canyon Dam was emitting the maximum flow of 26,000 cubic feet per second, he began writing to friends who had done the canyon for **process descriptions** in how to run particular rapids in the big water. His buddy, Tim Hilmer, (from the Colorado Writing Project) was a big help. At the same time, his group began exchanging directions and process descriptions for preparing and packing gear, recipes, meal preparation and the like. These process descriptions were rehearsals to help the actual work go more smoothly.

There were also exchanges of **descriptions** of gear, of meals, of campsites and rapids. Campsites, rapids and possible hikes were **defined, compared, and classified**. Potential **problems** were discussed and **proactive solutions** proposed. There were also some **cause and effect** discussions. What might cause the most health issues on a long trip? Answer: lack of sanitary measures, and failure to take care of wet feet. Solutions were agreed upon (washing stations before each meal and after "groovering"; daily foot checks and moisturizing.)

To make a long story short, the group used a tremendous variety and amount of informational and explanatory exchanges to prepare for the trip. They continued to do so during the trip itself. Most notable (and exciting) was the scouting of rapids and the complicated sharing of various **process descriptions** for navigating them, with plans A, B and C in place for each boat, as well as rescue procedures for various scenarios.

And these exchanges did the work they were meant to do. The trip went off seamlessly – three weeks of spectacular scenery, major hikes requiring rope systems and rappelling, BIG whitewater and massive wave trains, eddy

lines and swarmy washouts (did Jeff mention the BIG whitewater?), and great meals, all without a major flip, bad swim, injury, personal or relational meltdown or anything less than a magnificent meal. Why? In large part because the group knew how to think and communicate with the appropriate thought patterns, i.e. in informational/ explanatory structures.

Jim and Michael have likewise found themselves thinking and communicating in such structures recently.

Michael's summer was spent in a much less exciting fashion. As chair of his department, though, he had to compose in the same structures. Michael and his department manager were constantly exchanging lists of unstaffed courses. He had to write summaries of duties to be included in the contracts of new faculty. He had to detail the process faculty should use for a common assessment his department does as part of its accreditation work. During the summer cleaning of offices, one of his colleague's throw rugs went missing, so he had to ask her to write a careful description to see if it could be tracked down. He had to decide whether to grant transfer credit for a number of incoming students, a decision that requires classification, definition, and comparison. As chair of a faculty search committee he had to write a recommendation to his Dean that identified problems the new hires could solve and that discussed the future effects the hiring would have.

Jim also found himself using various informative/explanatory thought patterns over the summer. He keeps in touch with a group of high school friends who are scattered around the country. The excuse for doing so is mostly to give each other a hard time about their fantasy baseball teams, but often these emails or text messages turn into updates about families, jobs, and relationships. This summer, Jim has found his fantasy team in complete meltdown, mostly because six of his players were on the disabled list at one time. In one email exchange with his friends, he listed each player and how they were injured. Then, he offered up some possible trades (which were denied quickly and forcefully) in which he shared a comparison of statistics and a description about how the players he was offering up could help his friends' teams who were inching closer to playoff status. Later in the summer, as Jim's team kept slipping farther and farther down in the standings, he relayed detailed process descriptions about how the many injuries were the cause of his team's poor showing; however, his friends let Jim know that the real cause was Jim's lack of talent in choosing the right players during the draft at the beginning of the season.

Each two-week scoring period ends with the commissioner of the league, Steve, writing a brief summary of what happened during that scoring period. His summary includes any movement in the standings, and he classifies the outstanding pitchers and the outstanding hitters during that scoring period. During the off-season Jim's friends and fellow fantasy team owners will swap emails about any problems and possible solutions facing the league – problems like inactive team owners or the number of players each team can keep on its roster from season-to-season.

In short, Jim's friends from high school keep in touch – and run their fantasy league, in large part by exchanging texts that embody informational and explanatory text structures. These kind of texts and exchanges are rooted in a fantasy baseball league and the work of keeping the league operating and healthy, but really they are about keeping the relationships going so that it is easier to be there to celebrate and to console when real-life events invite this.

What ARE the Informative/explanatory text structures?

Every discipline makes extensive use of these thought patterns, so if we are going to help students think like real readers and writers, historians, scientists and mathematicians, then we need to teach these patterns and text structures in the context of our content teaching. And now we have the added incentive of meeting the CCSS. (MARGIN: CROSS-CURRICULAR CONNECTIONS)

It seems to us that the logic behind narrative is primarily about time or chronology. The logic behind argument is primarily about evidence and reasoning about that evidence. The logic behind informative/explanatory texts is more varied. In fact the CCSS places a clear emphasis on variety as when the document expresses that “Informational/explanatory writing includes a wide array of genres, including academic genres such as literary analyses, scientific and historical reports, summaries, and précis writing as well as forms of workplace and functional writing such as instructions, manuals, memos, reports, applications, and résumés.” (MARGIN: CCSS CONNECTION)

Our focus in this book will be on those types of informative/explanatory texts that are cited by the CCSS, but even more importantly, that are essential to disciplinary thinking and are generative in that they are prerequisite or complementary to understanding and using other related text types:

1. Listing and naming: this type focuses on placeholder individual elements that are important for a task or situation (both patterns seem implied by what the CCSS calls “naming”)
2. Summary/précis: the highly focused use of essential key details that relate and form a pattern to make a point. (Summary is cited by the CCSS as an explanatory text structure and we see this text type as expressing necessary and profound disciplinary thinking, upon which other kinds of work depend.)
3. Description: fleshed out sensory descriptions like sensoriums, specific descriptions including texts like reports, scientific reports, memoirs, reviews, critiques which include descriptions plus judgments (Descriptions are informational texts according to CCSS, as are reports and reviews, which we think are primarily descriptive.)
4. Process Description: steps in a process: recipes, directions, process analyses, and how-to texts. What the CCSS calls “sequential” texts belong here if they are not narrative texts to be lived through but describe steps in a functional process. (Instructions, directions and sequential texts are identified as informational/explanatory texts by CCSS and we think they fit in the class of text types we call process description).
5. Definition: from short encyclopedic entries to extended definitions (definition is specifically identified by CCSS, and involves “differentiation”, also cited as very important in disciplinary work)
6. Comparison/contrast: setting two (or more) elements side by side. Rankings involve a series of comparison-contrasts. (comparison is named by CCSS as an informational text type, and involves “differentiation”, also essential in all disciplines)
7. Classification: grouping multiple elements of a specific topical universe; involves comparing and contrasting group membership (what the CCSS calls “differentiate” is the basis of classification, and is essential to disciplinary work)

8. Cause/effect: explaining the relationship between an impetus or set of causes and consequences (at least for events that have already occurred. Anything predictive seems to us to clearly be an argument. We will cover this text type here due to CCSS references to it as an informational text type)

9. Problem/Solution: Explaining the nature of a problem and relating the causes of the problem to the solution (these are always predictive and seem to us to always be an argument but we will cover this thought pattern here to be consistent with CCSS).

Our list covers the ground suggested by the CCSS, but does more than suggest a taxonomy. Rather we see our list as a hierarchy. That is, we'll argue that our list suggests what students need to know and be able to do prior to being able to use a new thought pattern.

For example, naming and listing key elements or details is prerequisite to summary. Summary is prerequisite to a description that fleshes and fills out the key details in different ways and by using different structures such as the spatial. Describing is prerequisite to defining, since defining requires precisely including and excluding test cases, i.e. understanding what is essential to a term or idea, but also knowing boundaries, how to make judgments about grey areas, identifying examples and non-examples. This is obviously prerequisite to comparing and contrasting different elements, as both will need to be clearly understood and defined prior to being compared. Classification of a larger set of elements is dependent on comparing and contrasting, even as it goes beyond this to identify the groupings and relationships of *all* elements in a topical universe. Comparison-contrast through problem-solution structures all seem to us to be about various kinds of groupings of data and all are dependent on defining, which is dependent in turn on thick description. Cause and effect and problem-solution are arguments about grouping - about how ideas are related, work together, lead to each other, etc.

Our point: students will experience great difficulty summarizing if they cannot first name and list, and they won't be able to compare or classify if they cannot define. Our hierarchy therefore suggests what is prerequisite to reading and composing more complex text types, and therefore what we need to teach or at least remind students that they already know and must bring to bear to a new task.

Please note that our discussion of discrete types is not to suggest that they are pure types, as they usually are not. Typically one text type operates as a superstructure that uses a variety of other different text type in service of the overarching text type: "Skilled writers many times use a blend. . . [of] text types to accomplish their purposes" (CCSS Appendix A, p. 24). (MARGIN: CCSS REFERENCE)

For instance, Jeff likes Seymour Simon's nature books. Simon's book *Whales* is organized by the superstructure of extended definition since its purpose is to define whales and differentiate whales from other seas creatures. The overall structure is a series of descriptions of different features and parts of the whale's anatomy, habitat, habits and the like that define whales and differentiate them from other creatures. However, the book starts with a comparison/ contrast of whales versus fish. Page 9 is a process description of how whales breathe. Page 10 is a description of the tail. Page 19 and following is a short classification of types of whales. Page 39 is a process description of how the humpback whale feeds. And so on. Though the overall organizing structure is definition, many other structures are invoked in service of doing the defining.

The variety and combinations of informational/explanatory texts in real world texts places very real challenges in front of both teachers and students, but also many powerful rewards for those who master them.

Bottom line: even though different text-types share general processes and even though they may be used in combination to achieve particular rhetorical goals, specific thought patterns share very specific text structures and demands. These must be taught and mastered for students to be competent with these thought patterns and the work that they can do in both the disciplines and in life.

LEVERAGING THE PROMISE OF CCSS

All three of us endorse the CCSS. We think they offer us a wonderful opportunity to leverage progressive teaching and to bring education in line with what we have known for a long time from the areas of cognitive science, social psychology, and educational research.

The CCSS are not unproblematic. We believe that the focus on college and career readiness is too narrow and agree that the CCSS could include more focus on participatory, critical citizenry. But whether the CCSS has such a focus or not we will be exploring how we can teach in ways that will prepare our students for college, career *and* citizenship through the *structured process* of conceptual inquiry. In an inquiry environment, we can promote and reward the kinds of reading and writing CCSS foreground in ways that meet not only the college and career readiness standards, but also the notion of participating as a critical citizen, of engaging in social action, service and the like.

Another critique is that the standards were not democratically created with teachers in the lead. Agreed. However, we think the CCSS are respectful of teachers in that they are written in such a way to give teachers latitude and decision-making power in regards the use of content and texts, as well as how to craft instruction, design curriculum, assess learning, collaborate with colleagues, etc.. In other words, the story of the CCSS implies respect for teachers and the work of teachers. As current or former NWP directors, all three of us endorse the National Writing Project's notion that expertise about teaching resides with teachers, that we must strive for "conscious competence" by doing and coming to understand deeply what we teach students to do, and that teachers are the best teachers of other teachers. We think the CCSS are consistent with this view. The question is whether we, as a profession, will take on the challenge to devise curriculum for our own students and situation, selecting the most compelling content that will provide the context to engage our own students and assist them towards meeting the procedural demands of the CCSS to think with different thought patterns, make and perform actual knowledge that can be transferred and further developed over time.

To be clear, even without the CCSS we would vigorously promote teaching in the way we describe in this book.

Conclusion

In this book, we'll deal with how to teach various kinds of informational/ explanatory thought patterns and text structures in the context of inquiry. In the following chapters, we'll share a heuristic of five kinds of knowledge and five kinds of composing that will help us explore the structures of these kinds of texts and highlight the importance of instructional specificity. We will then follow up with how to make composing (and reading) these kinds of texts matter in the context of inquiry units. After that, in Part 2 of this book, we will proceed with exploring the specific processes of

teaching the reading and composing of each kind of text structure in ways that we have found compelling and useful to our own students, both in the present moment and in their foreseeable future learning, working, and living.

CHAPTER TWO

Thinking About the Structures Behind Informational and Explanatory Texts

One of our own most challenging moves as teachers is to try to get underneath the stuff we teach, to understand it deeply, to know its purpose, structure and inner workings so we can fully grasp why it's important and know how to teach it better. We've found that studying, sticking with it over time, and coming to deeply understand what we teach typically allows us to believe more deeply in what we are teaching, so we are not just doing what is expected of us, but instead what we come to feel called and compelled to do for and with our students.

The purpose of this chapter is to try to get underneath informative/explanatory text structures so that you too can see what motivates the instructional stances and moves that we'll be promoting throughout this book.

Achieving this kind of foundational knowledge is a real challenge. Here's one reason why: as teachers we've come to understand that there are conventional categories for texts that have lost their original power and meaning because we've lost the connection to why that category evolved in the first place and why and how it is used in the world. This phenomenon seems to us to be especially true for the category of informative/explanatory texts.

Throughout our careers we felt we've had a good sense of what narrative and argument are. We knew intuitively how these text structures worked, and we understood and valued the work they could do for kids both in our classrooms and out in the world. Not so with informational/explanatory text structures. Throughout our careers, expository texts (or what the CCSS is calling informational/explanatory texts) were simply a category for texts that weren't narrative or argument.

But since then we've come to understand that there are deep structural similarities among all informational texts that justify this category and make sense of it. Jerome Bruner has helped us see those similarities through his discussion of paradigmatic thought.

The Greek word *paradeigma* is the root word of "paradigm" and its primary meaning is "pattern", "patterning" or "creative model". Because of the seminal work of the scientific historian Thomas Kuhn (1962), "paradigm" has come to mean a distinctive thought pattern in a particular discipline or epistemological (knowledge-making/problem-solving) context. A paradigm, then, is a way that disciplines organize data and analyze and report findings so that the work of that discipline can be systematically done.

In Jerome Bruner's influential book *Actual Minds, Possible Worlds* (1986) he maintains that there are two primary modes of thought: the narrative mode and the paradigmatic mode (pp. 12 ff).

The most common academic mode is the paradigmatic, which involves logical, scientific, categorical thought that “makes use of procedures to assure verifiable reference and to test for empirical truth” (13).

In narrative thinking, the mind engages in sequential, action-oriented, detail-driven thought. In paradigmatic thinking, the mind transcends particularities to achieve systematic, categorical cognition. In the former case, thinking takes the form of stories and gripping drama. In the latter, thinking is structured as propositions linked by logical operators.

Bruner suggests that these logical operators are always based in some way on categorization: “To perceive is to categorize, to conceptualize is to categorize, to learn is to form categories, to make decisions is to categorize.” (qtd. on Wikipedia, 8/17/11, Introduction to J.S. Bruner). We’ve come to see that informative/explanatory texts are, at their heart, different ways to categorize. What this means is that each informational text type requires a different and very particular kind of thought. *That is, each kind of informational text structure embodies a specific way of thinking with and through categories.* In turn, this means that teaching students how to understand, produce and use informational text structures means that we are teaching them how to think with these categorical patterning tools. This is something that we will explore in detail in each of the practice chapters.

Let’s take a look at the different kinds of informative/explanatory texts that we discussed last chapter. Lists are a category of names compiled for some shared purpose, e.g. they are all elements you need to purchase at the grocery store. Descriptions allow you to understand an object, element, place or process so that it can be understood, categorized and generalized from (“Make sure to buy the gluten-free Bisquick. It’s in a smaller box, the box is orange and it’s got a GF label on it”). Definitions are in fact the effort to categorize a term or concept. (“The Gluten Free is very important – it doesn’t have wheat in.”) Comparisons and classifications are clearly forms of categorization (“You’ll find it in the baking aisle but not with the other Biscocks, but with the organic and natural non-wheat flours”). Even cause-effect and problem-solution are efforts to link categories such as causes to their resultant categories of effects, and categories of problems to categories of potential solutions. (“Gluten has been causing some bowel and digestive problems for me and so gluten-free is easier on my stomach and aids my digestion.”)

Of course, this deep structural similarity doesn’t mean that the different kinds of informative/explanatory texts all work exactly the same way, so in this chapter we’ll introduce a fuller definition of each kind of informational/explanatory text. (In future chapters, we’ll be drawing on these definitions when we explore how you might teach them.) More specifically, we’ll be thinking about how does each of these informational text structures help people understand and do things?

Naming and listing. Naming is a powerful intellectual act. Naming gives us power over the named, imbues it with meaning, and allows us both to think about and use that meaning.

On river trips, Jeff and his buddies often name unnamed rapids so that they can remember the qualities of the rapid and refer to it in shorthand. For instance, one nameless rapid where Jeff ran through two holes and had to roll twice was instantly referred to as “Jeff’s Jukebox” throughout all stories and comparisons to other rapids later in the trip. (This naming did a lot more work than “remember that unnamed rapid around mile 120?”)

Once something has been named it can be put into a list. Listing allows us to placeholder what we’ve named into a category of like elements, so it can be remembered and used. Naming and listing seem to us to be prerequisite to other kinds of informational or explanatory patterning and to all forms of Bruner’s notion of categorization.

Summarizing. A summary is a brief focused statement that includes all but only essential details of a longer text or data set along with a brief statement of how those details are meaningfully related.

On the river, kayakers and rafters often have to quickly communicate a summary to each other. For instance, after going down a difficult drop, the first kayaker might need to summarize where to go or not to go to the others following. Boaters have a series of signals that they give with their paddles to provide such summaries in a very quick on-the-run fashion.

Describing. A description fleshes out the basic details, gives life and sensory expression to these details, and demonstrates relationships between the details – spatially, as experienced chronologically, etc. Descriptions allow us to understand something deeply, including how it is patterned. When describing a rapid, Jeff might talk about the top, middle and bottom, or right versus left approaches. He’ll be sure to name and describe major features like tongues, holes, waves, eddy lines and eddies and how they relate to each other, lead to one another and the like.

Process Descriptions. Process description allow us to prepare and rehearse a specific activity; to direct and correct our activity while we are doing it; and to consider, reflect upon and plan for the future after an activity. On Jeff’s river trip process descriptions and analyses were used before, during and after every big rapid, and every meal, and every camp set up. Before hitting a rapid, everyone had to understand how to navigate the rapid, how to solve problems that might occur, where to pull out to play safety for the next boats, etc. While actually in the rapid, you better believe that Jeff was talking his way through it, and if something went wrong he talked his way through a self-correction, reminding himself what holes and waves to avoid. Afterwards, there was often much joyous talk about what had happened, and what had been learned for future rapids.

Definition. A definition explains the meaning of a term or concept, and the limits of it. There are two kinds of definitions: short definitions of the sort one might see in a dictionary, and extended definitions. We regularly make use of dictionary style

definitions. Think, for example, of teaching someone how to play a new game. You can't learn how to play bridge unless you know the definition of a trump. Extended definitions are very important when exploring conceptual terms in the disciplines, such as "exponent" or "invertebrate", or even "courage" or "hero". Extended definitions are essential to comparisons and classifications, which categorize and differentiate all the individual examples of a topical universe. On Jeff's Grand Canyon trip, it was essential that the group came to shared definitions of good campsites, rigging procedures and much more as the trip proceeded. These definitions guided the group in what to look for and do, and what not to look for and do in various situations.

Comparison/contrast. Comparisons and contrasts also help you to see similarities despite differences, and differences despite similarities, which can do work towards achieving mutual understanding, allowing people with differences to work towards commonalities, or to make finely sliced differentiations. Rankings like Top Ten lists involve a series of comparison-contrasts.

On his Grand Canyon trip, many things were compared and contrasted: campsites, hikes, meals, and more! But as usual, the river dominated, and the most common comparisons and contrasts regarded rapids. In fact, the Colorado River in the Grand Canyon has its own unique river rating and ranking system, on a scale of 0-10, so that rapids, the likelihood of capsizing, the technical nature of navigation, and the consequences of swimming in one can be compared. Lava Falls, for instance, is a 10 – the most difficult rapid on the Colorado – Crystal, equally difficult and perhaps more dangerous if one went through the first monster hole – is ranked a 9 because there is a sneak route on river right.

Classification. Classifications group multiple elements of a specific topical universe. This obviously involves comparing and contrasting the definitions of group membership. The most famous classification scheme is Linnean or biological classification, developed by Carl Linneaus to group life according to physical characteristics, and later under the influence of Darwin, also according to common descent. This kind of classification proceeds from Life, to Domain, Kingdom, Phylum, Class, Order, Family, Genus, to the individual example of life: Species. Classifications proceed from the topical universe (in this case, life) through subordinating categories to the individual example of the topical universe (in this case: species).

Classification has been defined by Mayr (2002) as "The arrangement of entities in a hierarchical series of nested classes, in which similar or related classes at one hierarchical level are combined comprehensively into more inclusive classes at the next higher level" (p. 169). A class is defined as "a collection of similar entities", (169) where the similarity consists of the entities having attributes or traits in common. Classification obviously does tremendous amounts of work in analyzing data as researchers and inquirers, helping us see and explain relationships, put things together that go together, and thus helping us to locate things.

Think of a grocery store or library where the items were not classified. You'd never be able to find anything. On the river trip, all gear was classified. Most importantly, all meals were frozen, classified and organized in the ice chests in reverse order of how they would be served. Fresh food was classified in its own cooler; non-perishables classified and organized in two

dry boxes – all organized and packed in reverse order of when it would be needed. Likewise, gear on the raft was classified into first-aid and rescue, spare parts, kitchen gear, groover gear, and other categories. Even individual gear bags were classified. Jeff had smaller dry bags in his big gear bag for personal toiletries, kayak gear, off river clothing, warm gear (in case it got cold or if he took a swim in the 47 degree river water), and sleeping/camping gear. Without such a system, packing and unpacking, finding gear when it was needed would all have been impossible.

Cause/Effect. Cause and effect structures explain the relationship between an impetus or set of causes and consequences (at least for events that have already occurred -- anything predictive seems to us to clearly be an argument). When we talk about the possible effects of particular actions – like risky behaviors - we name the possible implications and this becomes an argument. These implications might just be effects, but they might also become additional problems, and they are worth thinking about when taking risks.

Causality is considered to be fundamental to all natural science, especially physics. It is also important to logic and argumentation, to much of philosophy, computer science, statistics and other fields. In everyday life, we all have a fundamental interest in our surroundings and how to shape and control our lives and events in these situations. Cause and effect can easily be confused with simple correlations (experiences or events that have occurred in tandem but without causing each other) and that is something we will explore in the practice chapter on teaching cause and effect. But if causality can be determined, then not only is understanding achieved, but new ways of being, or of solving problems can be found.

On Jeff's raft trip, around Day 12, the kayakers' feet all began to hurt. The next day several other boaters' feet were equally painful, red, cracking, peeling. Luckily there were two doctors on the trip who diagnosed "maceration" or the deterioration and loss of the epidermis due to water immersion and abrasion. Once the cause was connected to the effect, the group took a day off, dried off their feet, moisturized them, and rested them. That helped a lot. For the rest of the trip, the group was careful to dry their feet off at lunch and when in camp, and to be careful about sand in shoes and socks. Understanding the causes of the problem allowed them to address it.

Problem/Solution: Inquiry, the search for understanding, is based on framing a topic as a problem to be solved. When we inquire, we search first for understanding of the problem, and next for possible solutions to the problem. This is what professionals do from medicine (what is the health problem? How can we solve it?) to education (What is the learning challenge? How can we address it?). Professional practice and knowledge-making in any discipline is based on inquiry and therefore on problem-solution. This involves explaining the nature of a problem and relating the causes of the problem to the effects of a solution. The foot problem on Jeff's trip was an issue of problem-solution, aided by an understanding of cause and effect. Likewise, when some of the fresh produce began to rot, the problem of what to eat at the meal that this rotten produce was

designated for had to be solved with the available resources of leftovers that were compatible with that meal. For instance, when the lettuce ran out, Jeff's daughter Jazzy made a citrus salad with leftover oranges and balsamic vinegar, along with what could be salvaged from the rotting lettuce.

The importance of teaching thought patterns. We hope that our discussion here makes clear why we are so drawn to Bruner and his discussion of paradigmatic thought. He makes it clear that the kinds of informational/explanatory texts are ways of thinking. Our worry is that these text structures are often interpreted by teachers as *forms* for students to merely fill in, instead of as patterns of thought. Such an interpretation and the practices they engender does a disservice to our students because they ignore both the issues of rhetorical stance and the framing writers must do to orient readers, as well as the complexity and embeddedness of the structures in actual practice. In other words, the form becomes more important than the purpose of the text and its actual contextualized use, particularly in hybridized forms.

The evidence demonstrates that if we want kids to compose, read and think in these different kinds of paradigms, and therefore be able to do the kind of work that these paradigms support in the disciplines and life, then we are going to have to teach students very explicitly how to engage in the specific tasks (or operations) required in the context of that particular knowledge structuring that results in that specific text-type.

When we go into schools, we often see posters proclaiming the general processes of writing (Pre-write! Draft! Revise! Proofread!), or the general processes of reading (Activate Background Knowledge! Decode! Ask Questions! Summarize! Monitor Comprehension and Self Correct!). This stuff is not bad, as far as it goes. These processes are certainly necessary to good writing and reading, and they are certainly employed whenever a writer or reader is successfully doing her work. However, the lists miss the recursiveness of the processes, as the processes interact and do not operate in a linear fashion. And even more importantly, these processes, though necessary, are not sufficient to help students be able to write particular text structures (Smagorinsky and Smith, 1992).

Here's an example. The "fourth-grade reading slump" is a well-documented phenomenon (the term was coined by the researcher Jeanne Chall). In early grades, students generally demonstrate a much great enthusiasm for reading and a robust sense of self-efficacy as readers (McKenna, et al, 1995). But then they fall off the cliff right around fourth grade. In our study of the literate lives of boys (Smith and Wilhelm, 2002), one informant told us that "I used to be a pretty good reader, but then I just got stupider." When we asked when he got stupider, he replied, "Pretty much right around fourth grade."

Well, certainly this young man did not get stupider. What did happen was that the reading he was asked to do suddenly became markedly more difficult. In early grades he was primarily reading narratives, typically supported by pictures. Narrative, as the brain researcher Barbara Hardy maintains, is the primary mode of mind. Then, around fourth grade, students are asked to

read informational text structures, often in textbooks (the densest source of information known to humanity!), and to make matters worse these structures are often embedded one in another. And since reading is typically conceived as the capacity to decode, no one helped this young man (and countless other students like him) to learn *how* to read and write in ways that embodied the thought patterns and met the demands of these new text structures.

Bottom line: The introduction of informational/explanatory text structures place great demands on students and they therefore need help meeting the challenges presented by these texts.

This is what we will be helping you and your students to do throughout the rest of this book.

Because all the informational/explanatory text types explored in this book are typically complex and different from each other, we'll put off a more thorough discussion of the specific demands of each type until we reach the practical chapter for teaching that type. Instead, we'll turn next to an exploration of the five kinds of knowledge and the five kinds of composing that will inform all of our instructional work, and apply it to a general model of informational/explanatory text.

Chapter 3

Five Kinds of Knowledge:

The Foundation of Understanding and Expertise

Fifteen years ago, Michael drove up to Maine with his two (then) young daughters. Jeff had invited him to work with his Maine Writing Project fellows during their invitational summer institute, and to enjoy some family time in Maine with his own family and two similarly aged daughters. On the drive up, there are about two hours along Interstate 95 where nothing can be seen but trees. After about 90 minutes of this, Michael's daughter Catherine blurted out: "Dad, doesn't anybody *live* up here?"

Upon arrival, Michael related this story, and then opined that it was a shame that Jeff and his family lived "so far from a city." Jeff demurred and maintained that Bangor, just five miles down the road, "is a city!" Michael laughed and said that Bangor certainly was *not* a city. Jeff argued that when you entered the town there was a big sign proclaiming "Welcome to the *city* of Bangor" side by side with a sign proclaiming "Bienvenue a la *ville* de Bangor". "It's a city in two languages and from two different cultural perspectives," Jeff stated.

Michael: Bangor is NOT a city.

Jeff: What are your criteria for a municipality being a city?

Michael: No criteria. One single criterion.

Jeff: Lay it on me.

Michael: You have to be able to go to a great restaurant every week for a whole year and never repeat a restaurant.

There was a pause.

Jeff: According to *that* criterion, Bangor is certainly NOT a city. . . but how many cities would there be in America according to this definition? Three? New York, Chicago and San Francisco? Your definition is too exclusive.

Michael: OK, let's add this: you also have to have two major professional sports teams, including one major franchise for football, baseball or basketball.

Jeff: Okay, that expands it some but Austin has almost 800,000 people and one of the great universities in the world and by your definition it's not a city!

The discussion continued for quite some time as Michael and Jeff engaged in negotiating a definition for the term "city". They often recall this discussion with amusement as it demonstrates their vastly differing perspectives on cities and city life, among other things. But more to the point of this chapter, throughout this lengthy conversation they were engaged in using the five kinds of knowledge necessary to all successful reading, writing, or meaning construction and learning of any kind.

From four to five kinds of knowledge

On this same trip to Maine, Michael presented about the four kinds of knowledge necessary for writing, based on the work of George Hillocks (1986), a great-hearted mentor and hero to the three of us. Michael engaged the group in teaching and learning that emphasized each of the four kinds of knowledge. The primary and pre-requisite kind of knowledge is *procedural knowledge of substance*, what we came to call “knowing how to get the stuff” to write about. This is what George termed “inquiry”: knowing how to access and generate data. Clearly, to be able to write, one must first have something to write about. To get something to write about, a writer has to know processes for identifying and producing interesting and compelling material. (CCSS Anchor Standards for Writing 4-9 are all about getting the stuff to write different kinds of texts (CCSS Anchor Standards #1-3) for different purposes, tasks and audiences (CCSS Anchor Standard for Writing #10) Of course, this kind of knowledge is also necessary to reading, as one can’t begin to comprehend unless one knows how to access requisite background and then bring this to bear in decoding and comprehending the text (Wilhelm, 2008; Wilhelm, Baker and Dube-Hackett, 2001).

As you learn how to procure and produce the content to write about, you are necessarily learning to name and understand the concepts you are generating. George calls that kind of knowledge, *declarative knowledge of substance*. (Cf. CCSS Anchor Standard for Reading #5 and #6, and CCSS Anchor Standard for Language #6) In other words, people learn the *what* through the *how*.

This seems to us to be a central insight: as John Dewey demonstrated in his work at the Chicago Lab School back in the 1920s, when you teach students information, or the *what*, they will quickly forget it even if they do well on an information-driven, fill in the blank kind of tests. And they won’t have learned any *processes*, which is foregrounded by the CCSS and which is necessary to transfer and future knowledge-production and problem-solving.

But, as Dewey’s student Ralph Tyler showed in the 40s, if students learn this same content through inquiry – if they learn the procedures for creating knowledge (the *how*)– then the knowledge that is created (the *what*) becomes generative, conceptual, and is retained over time. Tyler found that students learning in inquiry environments retained the seminal concepts and processes for the two years that he checked in on them

This insight has been corroborated many times over, most recently by disaggregations of testing data by teaching treatment from the NAEPs (National Assessments of Educational Progress), TIMSS (Trends in Math and Science Survey) and PISA (Programme in International Student Achievement) (see, e.g. a review by Wiggins, Seif and McTighe, 2004). (These tests are very similar to the Smarter Balanced and PARCC tests that will be used to assess the CCSS.) (MARGIN: CCSS Assessment)

In fact, when Jeff heard the head of PISA, Andreas Schleicher, speak recently, Schleicher made an impassioned plea for inquiry-oriented forms of instruction that focused on problem-solving and procedural knowledge of substance. He also demonstrated how the next generation of tests (he focused on PISA but references were made to the Smarter Balanced and PARCC tests developed to show progress on the CCSS) will require students to know how to use various procedures for generating and shaping content.

The knowledge of how to shape content into conventional and shareable forms is what George calls *procedural knowledge of form*. (CCSS Writing Anchor Standards #1-3 (or just #2 for informative/explanatory), and Writing Anchor Standards #4 and #8). This involves knowing how to put the most powerful data you have developed into the most powerful forms for reaching your audience. In some contexts, that might be an academic paper of one sort or another, in others a powerpoint, in others a website, and so on. (CCSS Anchor Standard #8 for writing clearly names “digital” sources and reading standard #7 does as well). The form or structure of a text is one of the most obvious distinctions between argument, narrative, and informational/explanatory texts. The form or superstructure – its overall organizational logic – is what makes an informational

text a comparison/contrast or classification or some other kind of text type – even if other text structures and thought patterns are embedded within this superstructure. In fact, in the real world these text types rarely exist in pure forms; they are almost always embedded in other structures.

As one learns how to shape data – the moves one makes, for instance, to introduce and present a comparison and contrast of different examples or categories – one is learning how to produce the structure and conventions of that text type. Simultaneous with learning and enacting procedural knowledge of form, one is learning *declarative knowledge of form* (CCSS Anchor Standard for Reading #5). Readers, like writers, must make use of all four kinds of knowledge. Once one has comprehended the stuff presented in a text, one must recreate the mental model, pattern and structures of meaning that were presented in one's mind (Wilhelm, 2008).

One has mastered declarative knowledge through the procedural when one can say something like “If I want my readers to attend to the comparisons and contrasts I’m about to make, I need to establish my purpose right up front” or “A Venn Diagram is superior for showing differences *and* similarities and a T-chart if you want to focus only on showing differences.” Or “The block method allows you to describe one subject fully, then move on to a parallel description of another. Use this method if you are really privileging or arguing for the second element. Otherwise use the point by point method to be more evenhanded.”

The inquiry square summarizes the relationships of the four kinds of knowledge (see also Wilhelm, Baker and Dube-Hackett, 2001; Wilhelm, 2001 for full discussions).

Four Kinds of Knowledge

	Declarative What it is.	Procedural How and why I use it.
Form	Arrows across and down <i>Naming to shape and structure the content.</i>	Arrows down and across <i>How to put the most powerful content you have developed into the most powerful forms for reaching your audience</i>
Substance	Arrows up and across arrows can be labeled <i>Naming the generated content – both the meaning and the effects, as well as naming how the materials was structured and formed to make particular points</i>	Start here! Arrows up and across <i>Processes for identifying and producing interesting and compelling content.</i>

(ED: I MEAN FOR THE ARROWS TO BE PUT INTO THIS GRAPHIC AND THE WORDS REFERRING TO THE ARROWS TO BE DELETED)

This is just one reason why the inquiry square is so illuminating: It reminds us that as you learn how to access and develop content (procedural knowledge of substance), you simultaneously produce and name the content (declarative knowledge of substance). As you learn how to shape and structure the content you've produced (procedural knowledge of form), you simultaneously learn about and come to name the structures for shaping content (declarative knowledge of form) *and* how the structuring of ideas work to create meaning and make various points (back to declarative knowledge of substance, but on a higher level – no longer about details, but about the larger themes or points (a major thrust of CCSS – see Reading Anchor Standards #6 and #9) – now you know how the material was structured to make a particular point – what Hillocks calls understanding structural generalizations. (see CCSS Reading Anchor Standard #5).

AND the inquiry square reminds us that the procedural and declarative are learned together, reinforcing and co-producing each other. Here is yet another crucially important instructional principle (forgive our excitement!): As you go through the process of generating and shaping data, and mastering procedural and declarative knowledge of substance and form, you are achieving deep, deep understanding of how knowledge is made and structured. You are getting inside the process of meaning-making and producing knowledge yourself. You become a knowing insider, reading like a writer and composing like a

reader! This is an emphasis clearly endorsed by the CCSS—there are the same number of reading and writing standards, and the same number of related sub-categories. [MARGIN: CCSS REFERENCE]

Tom Miller, a science teacher, had this to say after using the inquiry square to plan instruction: “In science, you are usually just told what to think. The kids do backwards science in labs, trying to prove that what the teacher or textbook said is right. It’s really all declarative [knowledge of substance]. But when I took the kids through the process [of the kinds of knowledge] and had them generate their own data and then shape this data into different forms and then present these – well, they learned that science is a giant sausage factory. There are different ways to get data and different ways to analyze and understand it. And science is an ongoing argument about data and how to understand it. (See CCSS standards for Literacy in History/Social Studies and Science, standard #7 at any level) And they learned that if they can tell a story about the data that accommodates all the data by shaping it in a particular way – well, they learned that *they can do science!* That if they can generate and structure data, *they are a scientist*, and they can contend with other scientists! They don’t have to just accept what a “scientist” says, because all science involves making up explanations for the data you collected and how you structured that data to analyze it. (CCSS Writing Standards for Literacy in History/Social Studies and Science #2 at any level) A scientific fact is simply an opinion that is generally shared across most scientists for how to interpret available data. As new ways to collect data evolve, as data changes, or how data is structured changes, scientific facts change. . . The inquiry square has democratized my science classroom and made science more accessible and exciting to my students! It’s been liberating for me and for them!”

Jeff also realized that he had spent most of his career entirely on the declarative side of the chart. For instance, when teaching about the Italian and English sonnet in senior English, he had lectured to deliver declarative knowledge of form (“The English sonnet has the rhyme scheme of abba, cddc, effe, gg and is organized into a twelve line poem, followed by a ‘caesura’ or pause, followed by a couplet that provides the point of the sonnet. The Italian sonnet on the other hand . . .”).

He then provided insightful exegeses of particular sonnets to provide declarative knowledge of substance: (“Notice how in Sonnet CXXX, Shakespeare makes fun of the courtly and idealized notion of love. In the first line he says ‘My mistress eyes are nothing like the sun’ contrasting his lover’s eyes with the idealized notion . . .”).

Jeff also realized that through this kind of teaching his students developed no usable procedural knowledge. At the end of instruction, they did not have the capacity to generate their own interpretations or to write their own sonnets, nor to appreciate the difficulty of writing a sonnet, nor to understand or appreciate why anyone would ever read or write one. (CCSS Anchor Standard for Writing #4)

Jeff’s students missed out on all the fun and all the power and all that was memorable or transferable because he taught on the declarative side instead of focusing on the procedural and getting to the declarative side through the procedural! It was a revelation!

Using the inquiry square: from four to five

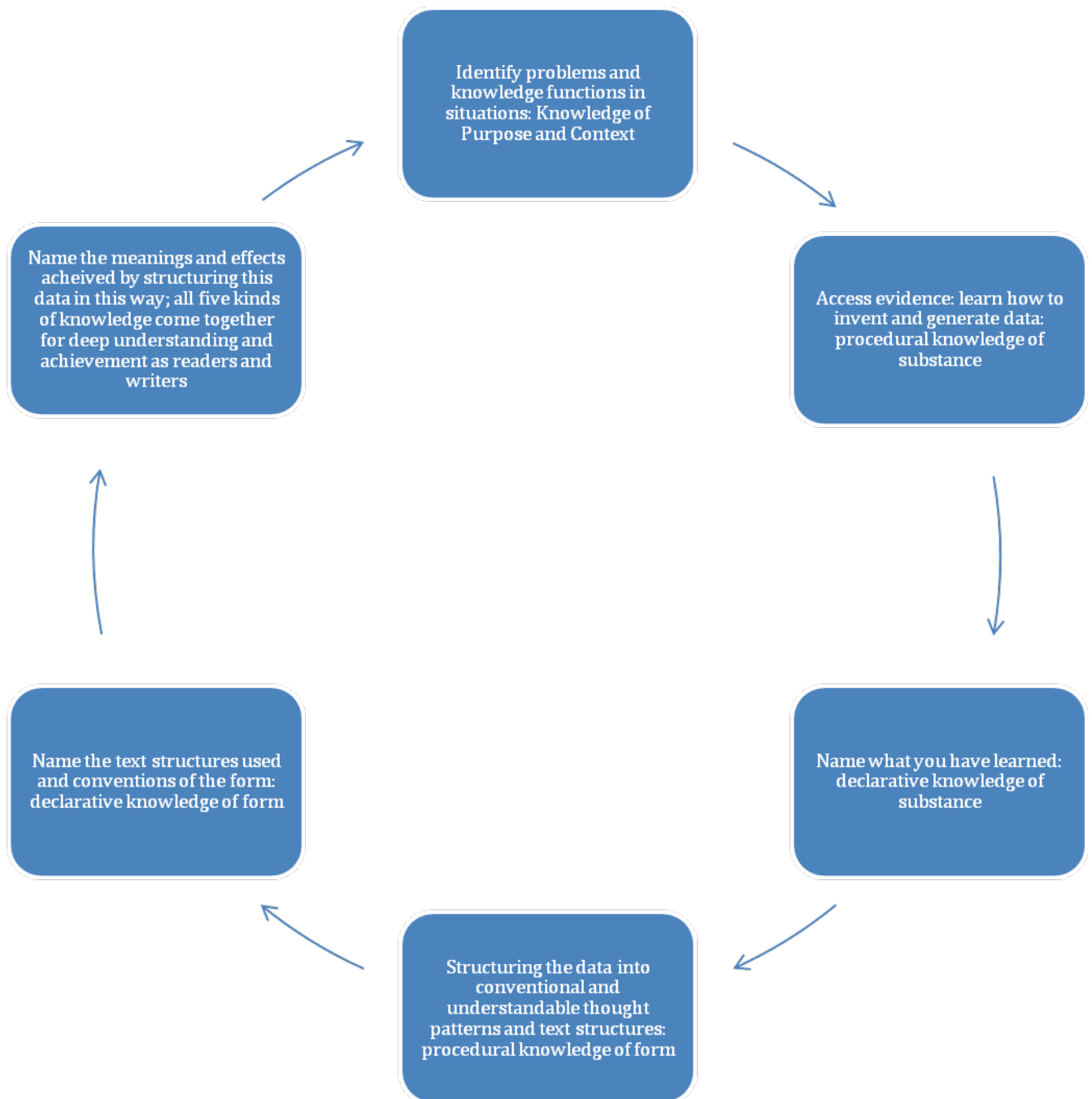
Jeff convened a study group to use the four kinds of knowledge to map out some units. The group quickly added a fifth kind of knowledge that they thought provided the “foundation” or “surrounding situation” for the other four. They called this fifth kind of knowledge: knowledge of context and purpose. They were delighted to discover that George Hillocks (1995) had made a similar addition to his taxonomy (CCSS Anchor Standard for Reading and Writing #10).

As the study group worked together they developed a couple of metaphors that informed and guided their thinking. They began talking about how the inquiry square works both like a house and like a cycle.

As a house, you can conceive of the knowledge of purpose and context as the foundation – the ground is chosen and prepared, and the ultimate purpose conceived. Obviously you can't get started without a purpose. The purpose (even if it's ultimately changed) gives rise to a plan to fulfill the purpose.

The cornerstone is procedural knowledge of substance – remember that this is what Hillocks calls inquiry: knowing how to access and generate and operate on data. Obviously, you need to know how to get and create material to have material, and you need material to build with. You need substance before the substance can be shaped. As you put the cornerstone in place, the knowledge that you create through these procedures creates a matching side of the edifice: declarative knowledge of substance. Procedural knowledge of form is how you start building the second story of your edifice. You structure the stuff into conventional and communicable forms. As you do this, you learn to name the structures and structuring devices and how they work together to create meaning and make particular points and create specific effects – a major thrust of the CCSS.

As a cycle, the five types of knowledge look like this:



Here is one specific example of how the inquiry square heuristic helped Jeff. For many years he had taught fable writing to seventh graders, as required by his curriculum. He did so over the course of a week, and the resulting fables were . . . well they lacked something. OK, they were generally really bad – insipid, boring, we might even say heinous examples of the form. Many of the fables featured Jeff’s big nose or his nose hair, which Jeff found inappropriate and irritating. Some featured owls driving Maserattis and smoking Cuban cigars, also not appropriate to the substance of fables. They rarely made much of a point and the morals tended to be tedious, off point and a paragraph or longer.

After becoming familiar with the five kinds of knowledge, Jeff realized that fable writing was way more complicated than he thought, and that he had never taught or assisted his students to meet the demands of fable writing. First, he contextualized fable writing in a larger inquiry unit where reading and writing fables would have a pay-off and mean something conceptually as well as procedurally.

He decided to integrate fable reading and writing into a unit framed by the question: What makes and breaks relationships? (MARGIN: UNIT IDEA) A favored topic of fables is that of relationships. Think of Aesop’s “The Man with Two Wives” or “The Cat who Loved a Man” paired with a modern fable like “The Blue Shoe” from fablevision.com. Since the culminating composition in the unit was to be an argument, Jeff considered how fable writing would help students compose arguments. Because they would be mining texts for the evidence they would employ in those arguments, Jeff recognized that casting students as inquirers and writers early in the unit would help them recognize how other writers manipulate details in order to make a point – so they could attend to how to do this through use of various thought patterns in their own writing. Moreover, if students employed multiple texts in their arguments, they would have to succinctly summarize those texts (more on summary later). Jeff recognized that writing a moral would provide powerful practice in doing just that (See Smith, Wilhelm, & Fredricksen, 2012 for many more ideas about how to prepare students to write a literary argument). In short, the fable writing could be in service of both the conceptual goals of the unit and work towards the final composition of an argument.

Then he *actually taught* the students how to identify the purposes fables serve, how to generate and form content, how to provide feedback, revise and proofread for the kinds of problems that came up, and how to present and justify their fables. And guess what? The fables were all unique, fresh, creative, fun, and did functional work regarding promoting healthy relationships. Here’s how the heuristic changed Jeff’s instruction: (Lesson Plan Calendars [here](#))

Although this is a condensed example, take a look at the difference in planning with the declarative side of the chart only, vs. planning with the procedural in mind (with a preview to chapters 4 and 5!):

Unit: The Fable (focus on declarative only)

Evidence of student learning: Student Composed Fable; Quiz

Monday	Tuesday	Wednesday	Thursday	Friday
Overview of General Form of Fables, then Compare Form of Aesopian, Fontaignian and Thurberian fables	Read and Analyze different fables and the themes/morals they communicate	Read and Analyze different fables, and the themes /moral they communicate	Write a fable of your choice	Submit your fable Quiz on the fabulistic form and the content of the fables we've read

Richer instruction using the 5 kinds heuristic to foreground procedural knowledge:

Unit: What makes and breaks a relationship?

Reading and writing fables was an early phase of the unit, following frontloading and sharing love songs and leading towards longer readings like *Romeo and Juliet*.

(focus on knowledge of purpose, substance AND procedure)

Evidence of student learning: Write and present a Fable at School FableFest and Open Learning Fair, submit to class anthology. Presentation to include a slide on how your fable compares to traditional fables, and a reflection on why and how your fable was constructed to create certain meanings and effects.

Monday	Tuesday	Wednesday	Thursday	Friday
<p>KNOWLEDGE OF PURPOSE AND CONTEXT.</p> <p>Read three fables, one from Aesop, one from Fontaigne, one from Thurber. Brainstorm: How are the fables similar and different? What is a fable? Why do people write and read them? What work do they get done and in what situations?</p> <p>(Composing to plan – see ch 4.)</p> <p>Exit ticket: When and why might writing a fable be useful to you and others?</p> <p>(Formative assessment – composing to transfer – see ch 5.)</p>	<p>PROCEDURAL KNOWLEDGE OF SUBSTANCE</p> <p>Where does the content of a fable come from? Given the purposes of fables to identify human weaknesses and find better ways of being in the world, let's brainstorm annoying human traits.</p> <p>Now let's identify which of these traits cause problems for others and are correctable. How can these foibles be corrected?</p> <p>(Composing to plan – see ch 4.)</p>	<p>PROCEDURAL KNOWLEDGE OF FORM</p> <p>How do we shape the content into the fabulistic form?</p> <p>Close Reading and Analysis of additional fables.</p> <p>What are the necessary elements of a fable? The necessary structuring and shaping of these elements? How can we shape our fables in this way? Practice identifying animals that reflect human weaknesses and strengths (for our foils). Practice writing initiating situations caused by that foible and how other options would be shown, escalation of the problems caused, climax and consequences.</p> <p>(Composing to plan and practice– see ch 4.)</p>	<p>PROCEDURAL KNOWLEDGE OF FORM? Outline your fable – how are all elements of fables and story structure included?</p> <p>What makes a powerful moral?</p> <p>How you're your moral reflect exactly the trajectory of the fable through its ending?</p> <p>Read fables without morals, write morals for them, debate the moral with points for tying the moral to the concrete evidence in the fable.</p> <p>(Composing to practice – see ch. 4.)</p>	<p>BRINGING IT ALL TOGETHER.</p> <p>Read and analyze another two fables. Identify criteria for a successful fable and develop rubric.</p> <p>Practice meeting rubric – guided writing of introduction to your fable, rising action, provision of foil, consequences. Practice writing morals.</p> <p>Name the substance and formal features in your draft.</p> <p>(Composing to draft – see ch. 4)</p> <p>Complete first drafts for Monday</p>

Continue First draft with Revising.	Final Drafting	Final Drafting	Final Fables presented aloud at our class Fable Fest.	Composing to transfer.
How to provide useful feedback.	Proofreading lessons for clarity, for transitions	Modeling of proofreading cues and feedback.	Powerpoint versions of fables presented in small groups with visuals and music.	Process Analysis of how you composed your fable and why you did it this way. Reflection on learning about fables, and about love/relationships through fables.
Peer Editing groups formed.	Mini-lessons as needed in small groups.	Proofreading in Peer editing groups.	Slides required that identify the type of fable you composed, why and how you composed it as you did, how you constructed the fable to communicate particular meanings and effects.	Share and submit reflections and process analyses.
Major revision strategies: Work on adds, deletes, moves and changes.	Work on powerpoint versions of the fable.	Make sure all criteria are met – signed off by two peer editors.	Final feedback and revision as needed. Post final products to on-line anthology.	(see ch. 4) (CCSS reading and writing standards 10, emphasis on reflection, making knowledge visible and accountable.)
Modeling of powerpoint version of fables.	(see ch. 4) (CCSS Writing 4-6 Language 3-6)	(see ch. 4) (CCSS Reading 4-6 and Writing 1, 4-6, Language 3))	(composing to transfer, ch. 4) (CCSS speaking and listening standards)	
(see ch. 4) (CCSS Writing standards 4-6, Language 3-6)				

Through this process students come to understand themselves and other authors as an intelligence behind the text, manipulating and structuring a textual experience for an audience to communicate specific meanings and achieve particular effects (CCSS Anchor Standards #4 for Reading and Writing). And because of this, students achieve not only deep understanding of a particular text, but also of textuality in general. And what has been learned, so deeply understood, can be transferred and transformed to meet new reading and writing challenges! Eureka of Eureka! Heuristic of heuristics!

Note well how this process can help to meet all of the CCSS anchor standards (particularly those focusing on craft and structure), and more importantly how the process constitutes deep knowledge of textuality fundamental to expert composing and reading.

The Inquiry Square for The Fable Unit

	DECLARATIVE	PROCEDURAL
FORM	Student names the features of the fable including animals as symbols of particular foibles and their foils, ends in moral, etc.	<p>How to put the substance of the proposed fable in an appropriate form:</p> <p>What animals could represent the foible and other contrasting values? (Pig for greed? Fox for deceit? Ant for husbandry and thrift?)</p> <p>What actions and key details could show the consequences of this foible? Initiating event caused by foible – how it escalates – climax – consequences revealing the effect of this foible in this context.</p> <p>Events must be a syllogism leading to a conclusion that can be summarized as a one sentence moral.</p>
SUBSTANCE	<p>First: Knowledge of the content of this particular fable.</p> <p>Later: Knowledge of how this content was constructed in this way for these meanings and effects</p>	<p>How to produce the substance of fables: brainstorming for human qualities that are immoral or irritating.</p> <p>Choose a big one that causes problems for self and others</p> <p>Choose a foible that is correctable</p> <p>Think about how people with this foible act</p> <p>Generate foibles and their concomitant actions, options to acting this way, consequences of each way.</p>
PURPOSE	<ul style="list-style-type: none"> KNOWLEDGE OF CONTEXT AND PURPOSE: WHY WRITE OR READ THIS KIND OF TEXT? 	<p>TO MAKE FUN OF HUMAN WEAKNESSES. TO MAKE FUN OF PARTICULAR PEOPLE'S WEAKNESSES BUT THEY WON'T KNOW IT. TO SHOW DIFFERENT WAYS OF BEING IN THE WORLD THAT ARE HEALTHIER. TO TEACH LESSONS ABOUT BETTER WAYS OF LIVING – OF BEING IN RELATIONSHIPS</p>

- KNOWLEDGE OF PURPOSE AND CONTEXT: WHEN AND WHY WOULD ANY ONE EVER WANT TO WRITE A FABLE? WHAT WORK DOES WRITING AND READING FABLES GET DONE?
-
- PROCEDURAL KNOWLEDGE OF SUBSTANCE: HOW CAN WE GET THE “STUFF” TO WRITE OR READ THIS? (INQUIRY?)

- PROCEDURAL KNOWLEDGE OF FORM: WHAT DO WE HAVE TO DO WITH THE “STUFF” TO MAKE IT A FABLE?

Using the Inquiry Square as a Generative Heuristic for Teaching

Since that time, Jeff has used the five kinds of knowledge to plan every course and unit he has taught, both in schools and at the university. It has informed every unit culminating in any kind of composing assignment and every time he teaches how to read or compose a new kind of text. Reading and composing are two sides of the same coin: what the author encodes and structures into a text, the reader needs to notice, decode and interpret.

Likewise, the five kinds of knowledge have informed how he teaches and supports teachers to think about and transform their instructional practice. It has been a wonderful and powerful heuristic for him.

Michael has likewise been using the five kinds of knowledge over all the subsequent years, and Jim has used it extensively as well to organize writing units in schools and the teaching of his method classes. One of Michael’s concerns has always been how much school writing seems so unconnected to what writers do outside of school. The five kinds of knowledge have helped him work with teachers to bring school writing more in line with the writing that people do in the world. Comparison and contrast papers have always seemed to Michael to be a big culprit and one of his major rants is a criticism of how they are typically taught in school.

Why? The assignment typically starts with a lack of purpose. That is, comparison and contrast papers so often ask students to start without any thought of why they should do a comparison. In contrast (ha!), in the world, comparisons and contrast are often made but they’re always made to do some work: to explain, for example, that two situations are similar and so what happened in one case can be used to predict what will happen in the other. Or they are made to explain that while the situations seem similar they really aren’t and so one oughtn’t use the one to predict what will happen in the other. Making either of these points requires writers to identify and explain salient similarities and differences (procedural knowledge of substance). Not every similarity or difference is equally important. As writers develop criteria for salience, they are learning about the things they are comparing/contrasting (declarative knowledge of substance). Then when they have at least some of the material, they have to think about how to build the house for their audience. They have to consider, for example, whether to start with the more familiar and move to the less familiar, or whether to alternate a discussion of one element of the comparison/contrast with the other or to do them separately. These critically important rhetorical decisions develop procedural knowledge of form -- and reflecting on them helps writers develop declarative knowledge of form. In short, the five kinds of knowledge have helped Michael work with preservice and inservice teachers to make their teaching more toolish and readily applicable in the world, and less schoolish .

Jim has used the inquiry square as a way to frame the methods courses he teaches, including courses entitled, “Teaching Composition” and “Literature Use in Schools.” The power of the five kinds heuristic is that it forced him to change his courses from ones focused on “topics” to ones focused on “practices.” That is, instead of having a week devoted to say, “censorship” or “revision” (topics), the courses now focus the preservice teachers on doing the kinds of work (the procedures and practices) that are central to any teacher’s work – practices like designing instruction, assessing student understanding, and conversing with colleagues. By focusing the courses on HOW teachers work, preservice teachers in the classes were able to get

after the WHAT of teaching writing or of teaching literature. That is, by focusing on the procedural knowledge of teaching, students developed a better sense of how concepts that are central to a teacher's workday are related to one another.

For instance, just this semester students were writing position statements about what they believe are "significant revision experiences" for writers. This assignment asks students to outline a rationale for why and how they would help students revise in the ways that support their growth as writers. The class looked at how different position statements were shaped (procedural knowledge of form: identifying such elements as a clear claim, a range of evidence that includes personal experience and scholarly arguments made by researchers and by teachers, and warrants or reasoning about that data) and elicited what content was included and where these ideas came from (declarative and procedural knowledge of substance).

In students' reflections on the process of creating the position statements they typically made connections between concepts like voice in student writing, agency and choice, time to rewrite, collaboration with or feedback from others, and more. They also remarked on how the difficulty of crafting a statement helped them begin to see how they might explain to others why certain activities they design for their own students reflect their beliefs and values about what constitutes a significant revision experience.

In short, Jim's use of the five kinds of knowledge to plan his course has helped him to plan and provide support and experiences that induct and assist his students into thinking like teachers and doing the actual work of teachers, instead of just covering material.

Although we all have profited from using the five kinds of knowledge as a thinking tool, we also find that we use them somewhat differently. But we think that that's a good thing. It shows that the heuristic of the five kinds of knowledge is flexible, as heuristics should be, and can be applied differently by different teachers with different students in unique situations without losing its generative power. The "five kinds" are not an algorithm, and not a lock-step set of replicable procedures requiring "fidelity," but a flexible, professional set of tools for thinking through and practicing expert teaching, or what we'd call a heuristic.

The word "heuristic" comes from the Greek root word "Eureka!" which means "I discover!" (Remember Archimedes in his bathtub?) It is defined as "experience-based techniques for problem solving, learning, and discovery" (Wikipedia, retrieved 8/18/2011) or "a generative process that enables a person to discover or learn something for herself" (Merriam-Webster online dictionary, retrieved 8/18/2011). Heuristics, in short, are flexible problem-solving tools based on generative underlying principles. Because they are based on generative principles they can be developed, tweaked, and transformed, and then transferred to new situations. (In a sense, the CCSS Anchor Standards 1-9 for reading and 1-9 for writing are a heuristic for accomplishing Anchor Standard #10 for each)

You can also think of a heuristic as a simple transportable thinking tool – this tool is both declarative (something that can be articulated and shared verbally as a WHAT) and procedural (a process or HOW to do something). In this book, we hope to demonstrate how the five kinds of knowledge have great heuristic value for both teachers *and* for student readers and composers as they work with particular text types and strive to meet and exceed the standards set forth in the CCSS.

The challenge of generative teaching

In contrast to our emphasis on the procedural, reviews of American teaching practices show that teachers tend to purvey information rather than creating situations in which processes and heuristics are developed and mastered. Goodlad's (1984) classic study of over a thousand classrooms led him to this conclusion:

The data from our observation in more than a thousand classrooms support the popular image of a teacher standing or sitting in front of a class imparting knowledge to a group of students. Explaining and lecturing constituted the most frequent teaching activities, according to teachers, students, and our observations. Teachers also spent a substantial amount of time observing students at work or monitoring their seatwork. (p. 105).

What is true of classrooms in general is true of language arts classrooms as well. More recently, Nystrand with Gamoran, Kachur, and Prendergast (1997) observed 451 class periods in 58 eighth-grade language arts classes and 54 ninth-grade English classes. Nystrand writes of the findings:

When teachers were not lecturing, students were mainly answering questions or engaged in seatwork. Indeed, on average 85% of each class day in both eighth- and ninth-grade classes was devoted to a combination of lecture, question-and-answer recitation, and seatwork. Discussion and small-group work were rare. On average, discussion took 50 seconds per class in eighth grade and less than 15 seconds in Grade 9; small-group work, which occupied about half a minute a day in eighth grade, took a bit more than two minutes a day in Grade 9 (p. 42).

This kind of information-transmission will not help students to meet the CCSS and, has long been shown, will not lead to deep understanding, application, or transfer (See, e.g. Tharp and Gallimore, 1990).

When teachers do move into the realm of the procedural, it seems that what they teach are algorithms instead of heuristics. Algorithms are inflexible, lock-step, one-size fits all protocols for performing a task. They are not transferable and do not help students to understand the deep principles behind a task performance, nor the story behind the story of why and how this procedural knowledge was developed and why it works in this particular way. Knowing and being able to use these deep principles is precisely what constitutes understanding according to modern cognitive science (Folk, 2004). This is a far cry from what is typically achieved in schools.

Perhaps teachers teach algorithms, or lists of steps for doing something, because it can be purveyed as information, or because it is simpler to do. But when we do so, we lose all the potential power that comes from true understanding – the power to transform and flexibly use what has been learned in new situations.

We've all had experience with our students and children who are applying algorithms without understanding.

One of Michael's favorite family stories is how Catherine shared a book report about *The Pigman* by Paul Zindel. Right at the beginning of the paper she had included a quote to establish that the Pigman was a widower. Michael was puzzled because he knows that writers only use quotes when they have to defend a proposition. Every reader agrees that the Pigman is a widower. So Michael asked Catherine why she chose that quote. She looked at him, raised her palms, and offered this explanation: "My teacher just likes quotes. Look, the rubric says include 5 quotes! And I did!" Catherine applied an algorithm – inappropriately – because she did not possess a heuristic or have true understanding about how real writers use quotes.

The preservice teachers who enter Jim's classes – often the first classes that these students have taken in teaching – often want “the list” of activities that will “work.” That is, they see teaching as simply following a list of steps in an activity, and they want to collect activity after activity. For them, the algorithm is something like “1. Find activity. 2. Teach activity. 3. Grade activity. 4. Repeat with new activity.” Of course, that's a simplified version of what many teachers-to-be are thinking, but most have an unnamed desire for a heuristic to think like a teacher. Developing heuristics, like the inquiry square or like considering how to design instruction focused on a specific reading strategy before, during, and after students read a text, becomes our most important work in the teacher education courses.

Jeff's daughter Fiona was once studying for an Algebra II test and could not figure out how to do a particular kind of problem. When Jeff asked her when she would ever need to use this kind of problem or “algorithm” in the world, she stared at him like he was an idiot and then hissed: “In school! You would *only use this in school!*”

Well, that's the first sign that heuristic value has not been achieved – the first and pre-requisite kind of knowledge, after all, is knowledge of purpose and context. Piles of research from cognitive science show that without a sense of purpose, you cannot learn. Purpose drives our engagement, what we attend to and what we remember (See schema theory research like Anderson, 1984; Bransford & Johnson, 1972). Without a purpose, we cannot achieve heuristic value. Likewise, you cannot meet the all-important holy grail of the correspondence concept without a clear sense of purpose.

The Correspondence Concept

So let's review. The five kinds of knowledge provide a powerful tool reminding us to teach in a way so that students read and write for real and powerful purposes. The five kinds of knowledge reinforce the importance of engaging students in developing procedural knowledge of substance and form that are transferable to new situations and that will lead them to deep and robust declarative knowledge.

In short, the five kinds of knowledge remind us to teach our students in ways in which they are acting like experts. The correspondence concept (Bereiter, 2004) is a simple, elegant and powerful notion from cognitive science that provides additional support for why doing so is so absolutely important. In cognitive science, inquiry is a process of accessing, building, extending, and using knowledge in ways consistent with how expert practitioners think, know, and perform. If we adopt that perspective, student understanding can only be measured by student progress towards how experts know and use concepts and strategies. As Nickerson (1985) explains: “One understands a concept, principle, process or whatever to the extent that what is in one's head regarding that concept corresponds to what is in the head of an expert in the relevant field” (p. 222).

In the area of literacy, this idea means, put simply, that we should teach the heuristics that real expert readers and writers use in the contexts in which they actually develop and use such skills – so what is learned and how it is learned “corresponds” to actual expertise. So, if real readers don't continue to try to read more and more quickly (they don't) then we shouldn't teach and stress fluency once students read fluently enough to comprehend. If real writers in English split infinitives (they do) then we should not teach students to avoid these. The takeaway: we must apply the “real reader” test and “real composer” test to all our teaching. (MARGIN: Note how the CCSS language standards for grammar are expressed as “Language Progressive Skills” but even those are very limited – deemphasizing grammar in favor of using language to create meaning and effect. This is an emphasis that we applaud.)

Since real readers and real writers make use of the five kinds of knowledge and composing, they are well worth teaching – the heuristic meets the correspondence concept and will help students be readers and writers in the academy, in the disciplines, and in their lives outside of school and work.

Chapter 4

The Five Kinds of Composing:

Making Informational Texts, and Making them Matter

In the last chapter we explored the five kinds of knowledge that all writers and readers need every time they successfully compose or read a text, a taxonomy that has had a powerful heuristic value for all of us. In this chapter we'll explore another heuristic that we've found to be a useful tool in planning instruction: the five kinds of composing.

We suspect that many of you may know John Collins's delineation of five kinds of writing (see <http://www.collinsed.com/cwp.htm>). In our work with students and through our collaboration, we became convinced both that there's a great value to recognizing and teaching different kinds of composing. We also became convinced that Collins hasn't quite captured the range of composing students need regular experience and engagement with to achieve expertise. We have therefore come to build our approach to instruction through the use of a very different five types of composing.

Composing versus writing

Before we share our taxonomy, we want to explain what at first might seem to be an innocuous difference. We label ours as five kinds of composing while Collins labels his as five kinds of writing. We think the different labels reveal significant differences in thinking.

Our thinking about the difference between composing and writing has been influenced by our mentor George Hillocks, Jr. George's work challenges the notion that kids learn to write solely by writing, a notion that we find many well-meaning and otherwise progressive teachers endorse. George's work has convinced us that students can and do learn to write by doing many things that are not writing, e.g. hands-on activities, visualizing (CCSS Reading Anchor Standard #7), debates, group problem-solving activities, small group discussions and much more, all of which involve talking about content *and* process (CCSS Anchor Standards for Speaking and Listening) and all of which represent content *and* process through composing of one sort or another.

Our friend Peter Smagorinsky (see, for example, 1995, 1997; Smagorinsky, Pettis, & Reed, 2004; Smagorinsky, Zoss, & Reed, 2006) has also had a powerful influence on us. Peter's work explores the unique and powerful engagement and meaning-making capacities available through composing with visuals, dance and movement, drama, and model building. Jeff has explored similar themes, and also calls into question the privileging of traditional forms of writing in his various books. (MARGIN: In fact, the CCSS's emphasis on multimodal composing is consistent with this challenge.) Composing, in the 21st century, is about much more than traditional notions of writing.

In *"You Gotta BE the Book"* (1996/2008), Jeff found that readers, whenever they successfully engage and comprehend, are composing meaning in highly visual, dramatic, participatory and multimodal ways. Jeff found that every engaged reader of literature created a story world in her mind, and every reader of informational or paradigmatic texts created an elaborated and highly visual mental model of what was being learned. Jeff's subsequent work has explored how students can be assisted to compose meaning through drama and action strategies (Wilhelm and Edmiston, 1998; Wilhelm, 2002/2012), visualization (2004/2012), and various design projects, often using technology (1998b; 2011). In Jeff's book *Teaching Literacy for Love and Wisdom* (2011) he and Bruce Novak make a strong case for composing through the arts, including digital media, and for conceiving the meaning readers create as artistic compositions. So, reading is composing, and again, composing is much more than writing.

And that composing is of different sorts. As we noted, we've identified five different kinds of composing that we think are crucially important: composing to plan, composing to practice, first-draft composing, final-draft composing, and composing to transfer.

Composing to Plan

We've already mentioned how the three of us have slightly different takes on the five kinds of composing. Jeff, in particular, thinks that composing to plan is the prerequisite kind of composing and that it necessarily includes articulating the purposes that composing and reading the text-type under consideration can fulfill, and further, naming situations and instances in which students have, could have, and might in the future use the text-type to create meaning and solve problems. (You may notice that Michael, in our argument book, starts with composing to practice and then moves to composing to plan. Jim does the same in our narrative book.)

Collins focuses first on brainstorming. But we've found this to be problematic because our students often do not have experience with the text type they need to read or write, or may not be able to articulate all the purposes. Narrowing composing to plan to brainstorming implies that kids already know what they need to know and this just has to be activated. We have found this assumption to be decidedly not the case.

We have found that composing to plan involves the first two kinds of knowledge: articulating and developing knowledge of purpose and context – which involves decomposing the task at hand, and getting started with procedural knowledge of substance – of learning how to access and develop the content that will be required to meet the situated purpose in the composition challenge at hand. Obviously, to compose, one has to understand the task, the purpose of fulfilling it, the context in which it will be fulfilled. One has to know how to get something to write about. Why, for instance, and in what situations is a writer driven to compose a sonnet or fable or comparison/contrast? How does a writer then get the material to compose one? This knowing how to get the stuff is what Hillocks defines as “inquiry” and we think it is the most important thing that we can teach if we want our students to be life-long learners and problem-solvers.

Composing to Practice

The power of practice is indisputable. It's like the old joke: The tourist in Manhattan asks for directions: “How do you get to Carnegie Hall?” Helpful local: “Practice, practice, practice.”

Research into various domains of human expertise make the case that it is practice, not talent, which determines expertise. For most challenging kinds of human endeavors, a minimum of 1,000 hours of practice is required for competence, 3,000 hours for what might be called mastery, and 10,000 hours to be among the best in the world, as Malcolm Gladwell (2000) asserts in *The Tipping Point*.

The neurologist Daniel Levitin (2007) reviews various studies regarding practice in *This is Your Brain on Music* and concludes:

Ten thousand hours of practice is required to achieve the level of mastery associated with being a world-class expert — in anything. In study after study, of composers, basketball players, fiction writers, ice skaters, concert pianists, chess players, master criminals, and what have you, this number comes up again and again. Ten thousand hours is the

equivalent to roughly three hours per day, or twenty hours per week, of practice over ten years. Of course, this doesn't address why some people don't seem to get anywhere when they practice, and why some people get more out of their practice sessions than others. But no one has yet found a case in which true world-class expertise was accomplished in less time. It seems that it takes the brain this long to assimilate all that it needs to know to achieve true mastery. (p. 8)

Alfred Binet, the father of the modern IQ test, wrote in his seminal work *Modern Ideas about Children* (1909/1975) that "With practice, training, and above all, proper method, we manage to increase our attention, our memory, our judgment and literally to become more intelligent than we were before" (105).

Likewise, Robert Sternberg, (2005) a modern-day guru of intelligence and expertise, affirms that the major factor in expertise is not genetics, "is not some fixed prior ability, but *purposeful engagement*." Or, as Binet asserts, those who are smartest happened to get the right kinds of practice and assistance in the right kinds of purposeful contexts.

In contrast, traditional instruction in both reading and composing seems to be about assigning and evaluating instead of instruction and creating supportive environments for practicing, taking risks, and gradually developing expertise *over time* (Tharp and Gallimore, 1990; Hillocks, et al, 1983).

Even when students do receive instruction, it is often in the form of lectures outlining declarative knowledge of substance or form, not the creating of nurturing environments that require and reward *doing* things like the composing of particular kinds of texts, and the provision of practice in generating content and shaping it according to the conventions of a genre and discipline. Workshop teaching that uses backwards planning and learning targets, which we find to be a progressive alternative to traditional information-transmission teaching, accommodates our model perfectly. However, in actual practice we have observed that much student centered instruction, including that using the workshop approach, can sometimes be more reactive versus proactive in terms of practice and correctives, focusing on responding to and coaching students on an existing or in-progress composition – often of the students choosing, and typically of narrative. Alternatively, we propose proactive preparatory practice that is about the kind of composing and text type under consideration, so that material for composing can be generated, procedural knowledge of form can be practiced, and consciously articulated knowledge can be transferred to future composing of this type.

As we have explored elsewhere (Smith and Wilhelm, 2006; 2009; Wilhelm, 2007), this "practice in miniature" should be extensive, heuristic-oriented, and move in at least one if not several of these directions:

- From the familiar to the less familiar
- From the short to the long
- From the oral to the written
- From the multimodal to print
- From the concrete to the abstract
- From the social to the individual
- From the scaffolded to the independent

You'll see how this kind of sequenced practice takes place in the context of conceptual units in the examples throughout the rest of this book. The bottom line is that we want students to have plenty of practice with articulating and playing

out knowledge of context and purpose, with procedural knowledge of form, and throughout the progress of the whole sequence, with procedural knowledge of substance so that students are generating content they can use in the upcoming composition task.

First (and subsequent) draft Composing.

Any writer is familiar with writer's block. Pascal foregrounded the challenge when he wrote: "Getting started with writing is easy: open a vein and let your lifeblood flow onto the page."

As part of our program of preparing students for success, we want to drive them to the ballpark, practice with them until they have something to say and plenty of practice knowing how to say it. Then we are willing to let them go out onto the field of play and take on a slightly new challenge independently.

Just as a coach wouldn't put his players into a game situation without preparation and practice and a level of expertise that will ensure competent performance, if not victory, we believe that students need help preparing to compose, and then environmental assistance to actually do the composing. But more than that, the coach is going to have a game plan for the particular challenges facing his players on game day, and strategies, cues, signals and the like for making that game plan a reality. This is the kind of instruction kids need when doing the first draft – they need help getting started and getting into the flow of composing, and knowledge of how to address the challenges that will come up.

As you'll see, we provide instructional support in the context of putting together the first draft, as well as support for substantive drafting and revising that involves moving, adding, deleting and transforming what has been composed (MARGIN: CCSS Writing Anchor Standard #5). Students need help to do this kind of drafting and revising. First and subsequent draft writing is a perfect place to continue directed peer group response and support (CCSS speaking and listening standards), as well as teacher-student support.

Final-draft composing

Once students are nearing a final draft, they need help polishing and publishing what they have composed. Our final draft composing phase subsumes three of Collier's five kinds of composing: proofreading and editing for focus correction areas (not for all errors, but for those that count most and are most correctable in this context, see Smith and Wilhelm, 2007), peer response, and publishing/presentation of what has been composed (a requirement of the CCSS speaking and listening standards).

As always, we need to make sure that our students get practice and support with proofreading and editing in specific focus areas, that they get practice and assistance knowing how to respond helpfully and substantively to each others' writing, and that they get practice and explicit help publishing and presenting the final draft of their work, or something that comes out of the final draft.

We argue that the focus on correctness should be kept in check until the very final draft of publishable writing. It doesn't make sense to do so until students have something compelling to say and practice saying it. Then and only then will they care to polish their text for surface level correctness to make the text accessible to a real audience.

Composing to transfer

When the final draft, the representation of a student's best thinking to this point, is presented and shared, the instructional sequence is not yet complete. As we've been arguing, if a student is not yet capable of articulating what has been learned, and justifying how it was learned, (MARGIN: both are required by the new CCSS performance task assessments in the SmarterBalanced and PARCC tests) and is not yet able to transfer what has been learned in flexible ways to future tasks, then we would have a hard time supporting the notion that anything substantive had been taught or learned.

Learning, and understanding, as defined by current cognitive science, means that one knows the story behind the story of one's learning, that this learning is justified according to disciplinary standards, and that one can transfer and use what has

been learned in new and dissimilar situations. Research shows that this kind of transfer rarely happens, and only occurs under certain conditions, conditions that we designed the five kinds of composing to meet:

- Deep understanding of the material (declarative and procedural knowledge) to be transferred
- Plenty of practice in applying meaning-making strategies and principles of problem-solving to various new situations (MARGIN: Note that the vertical alignment of the CCSS procedures lends itself to this.)
- The capacity to articulate what is understood and how it was developed, to justify what has been learned and how it is represented
- The capacity to flexibly apply what has been learned to new situations

(See Haskell, 2000; Perkins and Salomon, 1998; Smith and Wilhelm, 2006; 2009).

Each of the thought patterns and text structures to be explored in this book requires general processes that work in the same way in each case, but they also must be tweaked for task and context specific conditions (e.g. all summaries work in the same general way, but a précis or an abstract require specific additional processes). Students need to know how and why these processes work to be able to transfer what is known to new situations. They need, in other words, deep and reflective understanding.

To reinforce and consolidate these required capacities, we use reflective composing that names what has been learned, how it has been learned, the challenges involved, and how to use what has been learned in projected future situations. Brian Edmiston's research (1990) demonstrates both that this kind of reflection is essential to deep understanding and transfer and that it is the most important and most neglected aspect of literacy instruction.

It's important to emphasize that we use composing to transfer throughout the instructional process from the very start, particularly by using formative assessments. But we always end a unit and follow up on culminating projects by having students reflect on their learning and analyze the process of that learning.

An aside on our teaching histories.

All three of us have spent too many evenings and weekends responding to papers in which we were disappointed. We've come to understand that we should have been disappointed in ourselves and not our students. Why? Because we didn't provide enough opportunity and instruction to guide and support our students to success.

Because of the five kinds heuristics, we have a *much* better idea of how to avoid that disappointment. Jeff, for example, embeds his teaching in inquiry units built around essential questions. These units typically take about nine weeks to complete. Students write one major composition each unit, BUT because of his attention to the five kinds of composing, students are doing more composing than they ever have before. Their little fingers are becoming blistered nubs from so much writing! Every day they compose in a variety of modalities: talking, writing, drawing, debating, doing drama, moving and dancing, talking and writing even more in ways that develop knowledge of purpose, substance and form. Every day they plan and practice, plan and practice, plan and practice, practice, practice and practice some more. Nearly every day there is a formative assessment that constitutes a kind of composing to transfer, and at the end of the unit there is a more extended composing to transfer. Throughout the unit, they enact all five kinds of composing in order to develop all five kinds of knowledge.

Jeff's evenings and weekends are still sometimes spent responding to student work. But because of his attention to the five kinds of knowledge and five kinds of composing, he does much less of this than he used to, and when he does so the

evenings are much more pleasant – because his students have spent the requisite time and practice to compose unique and competent pieces filled with voice and creativity. And Jeff has plenty of evidence that this competence transfers to personal writing, writing in other subjects, and writing that students do in future grades and even in college.

These are the goals we have for all our students, and the five kinds of knowledge and composing are the best way we have found for achieving these ends.

Chapter 5:

The Process and Practical Context of Inquiry

All right, we've laid the theoretical and research groundwork for our instructional process. We think this is very important, for as we've argued, effective teaching is informed, wide-awake and theoretically-situated teaching. Such teaching is principled and therefore adaptable and transferable.

But now it's time to focus on practical applications! As teachers, we know that we are always eager to get to the practical: we want to know what *to do* to help our students. We'll be exploring many ideas about what we can do to teach specific informational text structures in the chapters to come, but before we do so we want to devote a separate chapter on what we can do to create a context that provides motivation and gives meaning to learning all of those things. That context is inquiry units built around essential questions. (For a full discussion of the power of inquiry, see Wilhelm, 2007.) (MARGIN: It is worth noting that the CCSS deliberately refrains from dictating instructional practices – leaving that up to the professional decision making of teachers.)

And once again we turn to George Hillocks. George has argued throughout his career that all forms of reading and composing are in fact forms of inquiry, and are best taught and learned in contexts of inquiry. His famous meta-analysis of research on composition (1983) as well as his own research throughout his distinguished career powerfully show this to be the case, as has much research before and since (e.g. Newman, 1995, 1996; for a current review of research, see Wilhelm, 2007).

By inquiry we mean the rigorous induction into disciplinary expertise, into the ways and kinds of knowing exercised in the disciplines (MARGIN: nicely matching the Social Studies/History, Science and Technical Subjects CCSS Literacy Standards). Inquiry is what each discipline does to create knowledge. Inquiry, as we see it and the research base compels us, is the most powerful context for all teaching and learning and for all forms of reading and composing.

One of the reasons we love being English teachers is that our discipline creates knowledge about the stuff that matters most in our lives. That is, in English we have the opportunity to engage students in thinking about the big and enduring questions that are likely to have motivated much of the reading and writing we've done, questions like "To what do I owe my primary allegiance?", "What's the best response to injustice?", "To what extent is the American Dream equally accessible to all?" In current parlance, these questions are called essential questions.

Of course, progressive teachers in all content areas have long been organizing instruction around real world problems and issues, and we'll highlight such content area instruction in our practice chapters.

(MARGIN: The CCSS Anchor Standard #7 for research includes the phrase "research projects based on focused questions" and this is scaffolded through the different grade levels until the 9-10 and 11-12 grade standard which dictates that these inquiries will be "research projects to answer a question (including a self-generated question)". Teacher-generated Essential Questions meet the goal for research at all grades and they serve as models for the framing of student-generated inquiries in the upper grades)

We've been writing (Smith & Wilhelm, 2006, Wilhelm, 2007, Wilhelm, Wilhelm and Boas, 2009) and teaching about building inquiry units around essential and existential questions (Wilhelm & Novak, 2011) for some time now, so we're familiar

with the kinds of questions teachers typically ask about the process and how to implement it, so we'll address those here through some FAQs.

FAQ: What makes a good essential question?

Effective essential questions are ones that can accommodate multiple possible answers and provide a wide variety of opportunities to read and compose. “What is the American Dream?” isn’t a good question because, at least in our view, there’s consensus on the answer. “To what extent is the American Dream equally accessible to all?” works much better because of the range of possible answers and how current and compelling such a question can be to students. (Margin: CCSS Reading Informational Texts and Literary texts in the 11-12 grade for standards 7 and 9 for Literature and 8 and 9 for Informational Texts explicitly name American authors and US texts.)

FAQ: Once I have an essential question, what do I do?

Sometimes the texts or material you teach suggest the question. Sometimes the question comes first. As you plan a new unit, be sure to consider the array of texts, particularly informational texts (and remember that creative nonfiction can be highly literary) that speak in meaningful ways to that question. (MARGIN: See CCSS Anchor Standards #9 and Reading Standard #7 at any level—they call for reading multiple texts on the same theme which fits perfectly with planning an inquiry unit. The reading and comparison of multiple texts around single themes also provides preparation for the longer and shorter performance tasks on the Smarter Balanced and PARCC tests) In the case of “To what extent is the American Dream equally accessible to all?” classic literature like *The Great Gatsby* does. So too do texts that chronicle the immigrant experience, both positively and negatively. And stories of any famous person who has risen from modest (or less-than-modest circumstances). And news stories about the Occupy Wall Street movement or the income gap between rich and poor. We could go on and on and the fact that we could do so suggests that this essential question is generative.

The next consideration is how to teach the reading and composing of different text types in the context of the unit.

Everything we are doing in this book should help you to teach the reading of informational text structures as well as composing in these structures. Here’s a protocol to help you think about how to do so.

- **Purpose and context:** Given your unit, what thought pattern/text structure will be most important? (CCSS Writing Anchor Standard #4) What thought pattern will be both required and rewarded in the context of learning? How and in what situations will this thought pattern/text structure be useful and do work conceptually and procedurally in terms of the inquiry, as well as in terms of students’ personal lived experience?
- **Process:** How will you engage the students in the process of Planning, Practicing, Drafting, Presenting, and Reflecting for Transfer, (CCSS Writing Anchor Standard #5) and how will you provide the necessary opportunities for students to reach “conscious competence” for using the thought pattern both now and in the future?
- **Deliverable:** How will the culminating project/s use or integrate this thought pattern/text structure? (CCSS Writing Anchor Standards #2 and #4)
- **Future:** What purposes will the conceptual and procedural learning students achieve in this unit fulfill in future disciplinary and personal work; how will this learning help them to recognize the contexts for future use of the thought

pattern? How has the groundwork been laid for transfer and improvement in developing even greater expertise with the thought pattern? How will you help students name and reflect on what they have learned in ways that will foster transfer? (This is precisely what the new assessments from PARCC and Smarter Balanced will call for—transfer of reading and writing skills to new situations.)

Planning for a culminating composing task:

An important instructional move is to work with students to create a description of the culminating composition as well as criteria for it. Wiggins and McTighe (2005) describe the process for describing a culminating composition as including the following, which we call by the acronym GRASPS:

- Goal/s: What we want to understand and be able to do? Why? How do these match the CCSS?
- Role: What role/s will students to play? (e.g., themselves, a character, a particular profession/mantle of the expert, etc.)
- Audience: Who is the primary audience for what will be composed? How will the project/composition be shared?
- Situation: What is the context/the circumstances for the piece (e.g., Who will read it besides the primary audience?) and what are the circumstances for the writer (e.g., How much time do they have to write it? What resources can they rely on? How long does it need to be?) What are the circumstances for the audience? (When and where will they experience the piece? What is their possible context of use for what they learn?)
- Purpose: What work will this piece of writing do for the writer and for the audience?
- Critical Standards for success: What does a strong example of this project look like? What critical standards will be met? Tie these to CCSS.

(CCSS Writing Standard 4 and 10)

Ok, let's get more specific about what to do with students to develop each kind of composing and each kind of knowledge. Remember that these suggest general phases and can work as a general sequence of instruction, but they can also work recursively. You are not locked in to a specific sequence. The heuristic is flexible and should respond to student needs at the point of those needs.

Composing to Plan is for developing knowledge of context and purpose, and to begin developing procedural knowledge of substance. In other words, students come to understand the purposes and situations in which this knowledge counts, and begin the process of invention and generation of material for their future composing.

We generally make use of some strategies like these for composing to plan. We do so in order to access and develop knowledge of purpose and context, and to begin developing ways of getting the stuff they will need to write their own compositions:

- Students brainstorm relevant background; e.g. past experience with an informational thought pattern
- Students engage in action research monitoring for a day, e.g. how often do they see this thought pattern at work? They could also shadow another person to see how often they make use of this thought pattern.
- Search and Find examples of the thought pattern with newspaper, media, or popular culture.

- Reading of mentor texts – this typically involves think-alouds or annotations exploring the thought pattern under consideration.
- Students rank models of student deliverables (from your past instruction, or you can use “found items” on the Internet), and begin to compose justifications for their rankings, articulating their own critical standards for final products. Students can also consider what they need to learn to be able to meet these critical standards (CCSS Reading Anchor Standard #5 and #8)
 - Students summarize purposes and contexts on anchor charts or some other kind of classroom archive or record. As they do so, they should consider tentative topic ideas for their own culmination composition/s. Students should consider: Why are these possible topics compelling to me? How do or might they address the inquiry question? Where might I get data? What will be achieved for myself and others through this kind of composition?
- Students begin to decompose the task process involved, and plan what they will need to learn to compose the culminating project/s and meet the critical standards.

Composing to Practice is for getting and shaping data: for developing procedural knowledge of substance and particularly of form. We typically move from practice with data that is closer to home for students – more connected to their experience – and often not directly on point for the final compositions. But we quickly move to practice getting and shaping the kind of data that is absolutely “on-point” for the inquiry and the final compositions students will create.

We typically use some of the following strategies to provide students practice getting and shaping data:

- Frontloading that is both conceptual and procedural, that activates and builds background for the task at hand, that motivates and prepares everyone for the inquiry, and that demonstrates the necessity of the thought pattern/text structure that will be foregrounded.
- Use visualization, graphic organizers, drama activities, and other forms of multimodal composing to generate and organize data. (MARGIN: CCSS Reading Anchor Standard #5 and #8; CCSS Standards for Speaking and Listening #1 and #6; CCSS Writing Anchor Standard #6)
- Use collaborative activities and writing, as ways to invent and generate ideas and ways to shape them. Collaborative activities can involve collaborative writing, revision contests or group edits/writeovers. We move from here to paired and individual composing with peer group support. (MARGIN: CCSS Speaking and Listening #1)
- Practice using various techniques for finding, generating, and recording data.
- Practice the “crux moves” necessary to conceptual understanding and to the text structure. Name these crux moves and thought patterns – essential for developing the “conscious competence” we are working for.
- Practice shaping and patterning our thinking through various kinds of composing.
- Name and practice using linguistic markers (introductions, transitions, language conventions, etc.) that are helpful in shaping thinking and data into this thought pattern.

Principles of sequencing: move from “close to home” to student experience to further from home and more distant from that experience; move from concrete experiences to more abstract – using oral activities, visuals, drama and other multimodal forms of composing before doing straight text, move from group work to more individual work, from shorter activities to longer ones, move from low-risk activities, bricolage and playing around before moving to high-stakes final drafting and evaluation according to critical standards. Last and certainly not least: give students *plenty of practice*! (MARGIN: The focus on practice can be used to achieve the CCSS Anchor Standards since they are small in number and vertically aligned - present at all levels and in all discipline. The theory behind this organizational system clearly encourages and supports practice using the featured strategies over time in a variety of different contexts.) Put things together that go together: the more you can combine practice of form with the substance of the curriculum and current inquiry, the better. We call this a two-fer! And we love going for two-fers, three-fers and four-fers!

Composing to draft involves putting all five kinds of knowledge together as students start to flesh out an actual draft of the text structure. It involves deep kinds of revising of substance and form. We try to do the following with our students:

- Continue to articulate and formalize critical standards and use these as a guide for drafting
- Assist students with getting started with the composing – creating good introductions and outlines, decomposing the task
- Train peer responders to apply criteria – we have found that the deep understanding of the thought pattern achieved during practice greatly enhances peer editing. It is also helpful to provide protocols for response, and practice responding to model papers.
- Practice revision strategies like moving, deleting, changing and adding data to the text structure to enhance coherence and global meaning (CCSS Writing Anchor Standard #5)
- Consider creating multimodal exhibits to the composition, and presenting a multimodal version of your composition

Final Draft Composing is when the drafting process moves to polishing and correcting the surface level of the composition. During this phase:

- Practice and integrate grammatical structures and vocabulary that will increase coherence of the text for the audience (CCSS Language Standards #1, 2 and #6 at any level for guidance on how to vertically align expectations in these areas)
- Proofreading and correcting typical problems or “target areas” at local sentence level
- Attention to transitions and navigational devices, multimodal reinforcement

Composing for Transfer occurs throughout this whole process through the use of formative assessments in which students demonstrate, articulate, justify, and reflect on what they are learning. At the end of the composing process, we find it very important to help students to reflect on what has been learned and how to carry it forward, to consider when and how they will use what was learned, particularly the use of the thought pattern, in the future. (MARGIN: This kind of reflection is a key

component of the PARCC and Smarter Balanced short and long performance based assessment tasks) Throughout our units, we use the following techniques to promote transfer:

- Daily formative assessments and deliverables such as the planning and practice and drafting activities
- Reflective writing on their learning, describing what was successful, obstacles encountered, what they will do differently next time.
- Reflecting through drama and art on the process of learning, the importance of what was learned, future applications for the learning, etc.
- Imaginatively rehearsing for future problem-solving and living
- Process analysis of what they have learned and how they learned it

Composing to Transfer reflection prompts:

What did you learn? that you expected? that you did not expect? Conceptually? Procedurally? Socially? How did you learn it? What worked? What did not help or interfere with learning? What were some successes of your learning? How do you know? What were some obstacles and how did you experience and overcome them? When do you anticipate using what you have learned? What will you do differently the next time you engage in such a task?

FAQ: You guys are always going on about teaching in a meaningful context of use. Why is that so important?

The last forty plus years of cognitive science demonstrates that all deep learning occurs in a situation that supports and actually co-produces that learning, and that all understanding is deepened and applied in contexts of use. (See Brown, Collins & DuGuid, 1989 for an excellent review of the seminal research on this topic). In other words, you can't really come to understand and use what you have learned unless it is learned in a meaningful situation like inquiry, which creates a situation analogous to that in which experts in the field learn. It's why we like drama so much too – drama-in-education strategies create an immediate and compelling simulated context that students can immediately connect to real life.

Here's an example of how situated even memory is. It's called "the doorway effect" (Oz & Roizen, 2012; Schulz, 2010). We know that this has happened to you: you walk into a room and can't remember why you came in. Here's why: memory is situated. If you had walked across the same room, you would not have forgotten your reason for moving - because you are in the same context – and that context supports learning and memory. But go through a doorway, and your memory is hardwired to be wiped clean; it auto-purges the information you needed in the old room to be prepared for the demands of a new context. Think of our students: without a meaningful context for learning they lose motivation, they can't activate meaningful schema necessary to the learning, they won't see applications, and they have no context that requires remembering what they have learned.

FAQ: How do you find time to provide all this instruction and practice and still cover the curriculum? How do you deal with the issue of time?

Here is how we do it. Through integration of content, and content and process, in other words, by putting things together that go together, by integrating the teaching of conceptual and procedural knowledge that is complementary and mutually enhancing and reinforcing.

Think back to the fable sequence in Chapter 3. We were able to combine fable reading and writing with conceptual learning about relationships. And we were able to do this teaching in the direct service of further conceptual learning and the arguments that were composed at unit's end. We saved lots of time by going after teaching two-fers and three-fers, teaching things together in ways that had multiple pay-offs in the unit. The time we saved was spent on practice that led to deep understanding. You'll see many more examples of how to do this kind of combining in all the future chapters.

Many of the schools we've taught in divide genres into separate units, divorce reading from composing, and grammar from writing. (MARGIN: Please note that the CCSS does separate standards for reading, writing and language, but an analysis of the standards clearly reveals that they should be taught together. This integration is also explicitly addressed and encouraged in the Introduction to the CCSS "Key Design Considerations" on page 4 under the category "An Integrated Model of Literacy") This kind of separation doesn't make any sense to us. Whenever we learn anything, solve any problem, whenever we engage in inquiry, then we are going to use all of the literature, texts, materials and processes that obtain to that inquiry. So we will read a variety of literary texts including poetry, explanatory/ informative texts, argument texts, multimodal texts and popular culture texts that help us think through the content of the unit. (This is why we situated fable reading and writing in the context of a wider inquiry into relationships.)

As we work with the content, we have our students practice composing with the thought patterns and text structures that the inquiry focus requires and rewards. As an example, when a unit is framed with the question: "What is a good relationship?" (MARGIN: UNIT IDEA) this implies that students will practice defining and that their culminating projects will involve composing extended definitions. The question also suggests that we should read love songs, love fables, love poetry, *Romeo and Juliet*, informational articles on relationships like those found in *Psychology Today*, as well as extended definitions of various kinds like those of good relationships on the Planned Parenthood website, etc. We no longer do genre units, but cover various genres that help us do our inquiry. Likewise, we study grammatical conventions that help to write the kinds of text structures we are composing, in the context of that composing. Things that go together are best taught and learned together.

Likewise, when a unit is framed with the question "What makes the greatest leader?" (MARGIN: UNIT IDEA) it is implied that students will be comparing and contrasting. For "What are our civil rights and how can we best protect them?" (MARGIN: UNIT IDEA) a problem-solution structure is suggested.

We save a lot of time by doing things together that go together, that co-produce and reinforce each other.

As far as timing, we often organize units to fit the nine-week grading periods of the schools where we work. (You can obviously massage this for other time periods, just so you give enough time for kids to immerse themselves in the content and provide enough practice getting and forming the stuff to compose!) This gives us time for the extended practice that kids need in reading to "mine" texts for ideas, and to practice generating new ideas and shaping these. We typically spend 7 weeks on frontloading, reading, planning and practicing, then the final 2 weeks of the unit is devoted to drafting and finalizing

compositions and culminating projects. By the time they start to draft, the kids should have a journal full of ideas to write about, and practice shaping these ideas and meeting all of the critical standards of the unit.

Since you need to have stuff to write about, it makes no sense to separate content units from the composing and grammar kids need to learn. This is all in line with the research on situated cognition (see, e.g. Brown, Collins and DuGuid, 1989) and how contexts (like inquiry) and extended time practicing (through composing to plan and practice) co-produce understanding. You'll see examples of how all this works in each of the following chapters.

We realize that this may not be how your curriculum currently works. But it could work in an analogous way, even if you teach shorter units. We meet all of the standards and cover all of the content of our old curriculum by reorganizing it into integrated inquiry units, and we are less rushed, and our students learn more deeply – and do better on high stakes tests – just as the data (see Chapter 2) demonstrates that they would. We save lots of time for deep learning by doing things together that go together.

Here's a final point: The CCSS offers a huge opportunity to reconceive curriculum. Since the focus of the CCSS is on procedures, and since the content that will leverage these procedures is largely left up to districts and teachers, there is a tremendous opportunity to recreate our curriculum through inquiry that integrates the kinds of knowledge that go together. We hope that all teachers will grab this opportunity with both hands. It's an unprecedented opportunity to exercise our professional expertise and decision making power.

FAQ: How do you deal with issues of grading? I mean, you recommend spending so much time practicing. What do you enter in your grade book? Parents expect to see daily grades!

OK, here is what we do. You'll have to see if it works for you or if you can adapt it. We provide kids with a P-P-D every day: a **purpose** for the day's lesson that is connected to the inquiry and leads towards and prepares them for the culminating project, the **process** that we will undertake during the activity, and a **deliverable**. During every lesson activity, we want students to produce something tangible that demonstrates effort and their current level of understanding. Sometimes this deliverable is produced in groups, but if so, then everyone has to identify their contribution. As we go through a unit, more and more work is individual, though students always have access to peers. These deliverables always provide a kind of quickly accessible formative assessment that makes student learning visible and informs our teacherly thinking about what kind of practice and support is needed next.

Through the first seven weeks of a unit, the kids are planning and practicing. If they put in an honest effort and produce the deliverable, we give them 10 daily points that are entered on our electronic grade sheets, accessible to parents. These points could be called effort points. They are not based in any way on expertise or even growth.

Here's why: first, we think there is an ethical problem with evaluating what you have not yet taught. We don't think it is fair to apply critical standards until we have helped students, over time, to meet those standards. We tell our students that we will spend 7-8 weeks being their coach, then 1-2 weeks being the referee; 7-8 weeks being their advocate, then 1-2 weeks being their judge. We don't think it's fair to play the judge unless you have been the assistant and advocate first. Otherwise you are holding students accountable for something you have not yet taught them.

Here's another reason: we like the metaphor of coaching for teaching. All three of us have been coaches of various athletic teams and other extracurricular activities in the arts or student government. It's clear in coaching that you don't start off day one with a high stakes test like a competition. You spend the first practice learning players' strengths and weaknesses, then planning how to exploit strengths and address weaknesses through weeks of . . . you guessed it: practice! Then you do a controlled scrimmage, then a game-conditions scrimmage – moving your players ever closer to the high-stakes performance test of an actual game or meet. And you will do whatever is necessary to help them to be successful – win or lose – when they are in game situations.

Another reason: In motivational attribution theory (see, e.g. Dweck, 2006) students are more likely to develop a “growth” mindset and willingness to work through problems over time if they attribute success to effort. The more they attribute success to talent or aptitude, the less motivated they will be and the less willing to spend time practicing and working through the challenges necessary to growth and learning. By providing grades for effort until students have had the support to be successful is highly motivating and cultivates the growth mindset. In our own studies of boys (Smith and Wilhelm, 2002; 2006) we found that boys privileged competence above all else. They were willing to undertake very complex challenges like those required by the CCSS and the required assessments IF they felt the teacher would provide the necessary assistance and support, reward effort, and provide/celebrate visible signs of their developing competence along the way. (MARGIN: CCSS ASSESSMENTS)

There's a final concern about the payoffs to our time and energy. We all have limited time and energy, so we have to decide how to best spend these valuable commodities. Our mentor George Hillocks' research has convinced us that we get way more payoff in terms of student learning when we spend time on planning versus evaluation. He has also shown that we need to evaluate in ways and at times where that feedback can be immediately used – in revision and for transfer. So we prefer to give effort grades throughout by using formative assessments. We do summative assessments only at the ends of units on culminating projects and according to published and negotiated critical standards. And we always allow students to revise using our feedback. We think it makes sense to hold students accountable, but only after we have helped them to master what we are assessing.

We tell our students that if they put in the effort and practice, we are confident that they will develop the capacities to successfully complete the culminating projects. If students screw up and miss their points for a day, we often have them write a proposal or appeal letter (more writing!) and then allow them to make up the work. We want them to do the work, after all, and we want them to get the requisite practice, so we put the responsibility on them. We tell them we will help them in any way that we can. We have some extra time to do this because we are not grading stacks of papers. We can quickly peruse through formative assessments between classes and during lunch. We are pretty full-on during the day, but take less work and grading home.

Remember, even though there is only one major composition assignment per quarter, our kids are writing more than they ever wrote before – and all this writing helps them develop and placehold the content for their culminating compositions, and assists them to practice shaping that content into a conventional thought pattern/text structure as required by the disciplines. When it comes time to sit down and draft, they are practically done: they have all the stuff, and plenty of practice shaping the stuff. It's time to sit down and write. Our assignment completion on our major writing assignments, even with struggling students, is almost always 100%, or very nearly so. That was far from the case when we gave more assignments and provided less assistance to our students.

FAQ: What are the culminating projects?

First off, we think it is vitally important that all culminating projects fit real world purposes and are addressed to real world audiences.

As English teachers, one of our culminating projects is always a composition assignment. But we'd argue that every teacher needs to be a teacher of literacy and should include reading and composing in all units, particularly in light of the CCSS standards for literacy in the disciplines. (MARGIN: CCSS LITERACY IN THE DISCIPLINES STANDARDS) We've done work with content area teachers for many years, and we've not found a single unit in any subject, including shop or physical education, that can't be framed as inquiry and enhanced with reading and composing activities. Plus, the CCSS standards for literacy in the disciplines are making (MARGIN: see for example the CCSS Writing Standard #2 in history/social studies, science and technical subjects) the same case and provide a requirement and lever for more literacy activities in the content areas.

Now, we also like to have group multimedia projects in all our units, in addition to the individual composing assignment (though our students always work with peer revisers and editors). Most of the actual work on these multimedia compositions (CCSS Writing Anchor Standard #6) is done during the last two weeks, be they digital compositions using video, hypermedia, the Internet, or drama, visual, dance or other arts. But remember, we introduce the students to the kind of composing they will be doing in the first few days of the unit, we show them models and have them rank them, we articulate criteria together, and then we assist them throughout the unit to develop and practice the thinking tools they will need to get the stuff and shape it in their final products. We think this only makes sense given the demands placed on students in regards to 21st century literacies, and the CCSS standards for collaboration, for speaking and listening, and for multimodal composing. (MARGIN: CCSS CONNECTIONS)

We are moving more and more towards social action and service learning projects in our own teaching, since this requires that what we learned together with students be applied to the real world. Often, the multimodal project can become a social action or service learning project, as in the case of some boys who took a forum drama around to the district elementary schools as part of an anti-bullying project.

Another consideration: when students both write and compose in multimedia, the students get to *use* the thought patterns and content they have studied at least twice at the end of the unit. They get to demonstrate their learning through actual accomplishment and a resounding proof of purchase! The learning is reinforced and consolidated as they work together on multimedia compositions and individually on their final papers.

Again, we realize you might have to tweak our model, but this way of doing things has worked very well for us.

FAQ: How do you train and use peer responders? My students are useless at helping each other to improve their compositions.

We have found that students who develop all five kinds of knowledge through the five kinds of composing develop deep understanding of not only the content of their composing, but of the process and form of their writing. This in turn helps them to be helpful peer responders and editors for each other, and helps them to provide a real audience who can give substantive advice about what to keep, move, change, add or delete from a composition.

We have also found that our students break away from formulaic writing, due to their deep understanding of the composing process, and that they are better able to reflect on their composing process and to self-assess the products of their writing.

It's important though to provide protocols for helping students to respond to each other: PQP – Praise, then ask Questions about the content and form, then offer suggestions for Polishing and Revising. Another one we like and will feature here is Keep, Move, Change, Add, Delete. We ask peer revisers to make one suggestion for something to keep, with a justification, then to provide five suggestions that involve moving, changing, adding or deleting something. The writer has to decide what advice to take, but must justify in writing rejecting any of the advice they are given. We have found that such structures (among others we will feature here) help students to provide substantive advice to each other and to deeply consider that advice.

We also help students practice how to be good group members, how to phrase advice, how to set and monitor standards for good sharing, etc. This is outside the purview of this book, but Jeff devotes a section of his book *Engaging Readers and Writers with Inquiry* (Wilhelm, 2007) to these processes.

FAQ: What about timing? It seems you spend the great majority of time on planning and practicing.

That's absolutely right. In any domain, people develop the five kinds of knowledge primarily through composing to plan and composing to practice. So that's where we put our emphasis. Certainly learning continues through drafting and finalizing, and deep understandings continue to be consolidated and integrated. But most learning occurs through practice, as shown in the seminal research of Ericsson (1996), who made the case that expertise requires 10,000 hours of assisted and focused practice. That research also indicates that you can create new habits of mind through consistent daily practice over the course of just six to seven weeks – the amount of time we like to dedicate to planning and practicing in any unit.

Think about it. Jeff is a Nordic marathon skier. Last year he competed in the World Masters and U.S. Nationals skate marathon championship. He skied about 2000 km during the season and 1800 km of that was training, much of it technique work. He also did core and lifted weights and stretched throughout the season. He had engaged in dryland training and biking since the previous May. By the time he had won his bronze medal in the U.S. Nationals, it's safe to say that 98% of his time had been spent on planning and practicing.

Consider this book. Each of us is drawing on 20 to over 30 years of teaching experience. Jeff has been planning to write this book for 23 years and has been collecting materials since that time. What you are reading is the result of years of both formal and action research and the practical endeavor of trying things out in the classroom. It's safe to say that even after 15 drafts, the drafting and finalizing of this book was less than 2% of the process.

Consider any presentation you might have given. The bulk of that time was planning, practicing, and bringing forward (transferring) your prior knowledge and experience so it could be applied to the task at hand. That's why we so emphasize the planning and practicing and transferring – that's where most of the learning gets done. It's the preparation for success. And we'd rather proactively prepare our students for success (that's what we would call teaching) than spend our time reacting to student failure and frustration. And without the planning and practice and transfer, an exceptional final product just can't be achieved, and it can't be used as a springboard for future success.

FAQ: What about sequencing? Do you follow a particular sequence of activities?

The processes of learning and of composing are highly recursive. We teach in a structured process approach, but the structure is highly flexible and recursive. We rely on what we learn from our students about their progress to make decisions about how long to spend on a particular concept or crux move. But we always start with composing to plan and practice (particularly through our use of frontloading), and spend most of our time on planning and practicing, as explained above. But think about it. During that time, the students are also trying and drafting out ideas and techniques that they will use in their first drafts. We use composing to transfer every day both through dedicated formative assessments and through the actual work we are doing, which serves as a kind of formative assessment and placeholding device for remembering what needs to be used and done in the drafting and finalizing. And during the actual drafting and finalizing stages, we are still instructing – i.e. planning and practicing. We are teaching what is appropriate to teach at that point in the process, e.g. proofreading for grammatical correctness. It doesn't make sense to do that kind of work until students have a draft that they are proud of and want to share with an audience. If at any time we notice students are still struggling with one of the crux moves or concepts necessary to their culminating project, well, we go back to practicing during the drafting or finalizing stage.

FAQ: Ok, let's say I like what I am hearing. Still this looks different from what students, parents and even colleagues are used to seeing in classrooms– how do you deal with that?

Our advice is to be proactive versus reactive. In other words, let students and parents and colleagues know what you are doing before you do it, through a parent newsletter, a class website, parents nights, etc.

Another great idea is to get at least one colleague or teaching partner to work with you. Research on teaching teams shows that pairs or small groups of teachers working together seem to be the most innovative and to be the best at sustaining innovation (see, e.g Arnold, 1997). This reminds us of having of running buddy. We are much more likely to get up for our workout if there is someone else who shares our commitment.

Use the CCSS as a lever. Show up front how you are working to meet the CCSS in ways that make sense according to the CCSS, and prepares students for the Smarter Balanced or PARCC assessment (we find bringing up the assessments and sharing test items often steels people's attention), (MARGIN: CCSS ASSESSMENT) and the demands of the world and workplace.

Use student engagement and their work as a lever. Use the research presented here and elsewhere about human motivation, cognition, and understanding to justify your approach. Share student work at learning nights and in other ways. The quality of the work we get from our students using this process is our most convincing evidence that the process works.

Invite others to join you. If you have like-minded colleagues, or are part of a PLC or a network of teachers like that provided by the National Writing Project, then solicit others to form a group to explore ways of improving instruction and/or meeting the CCSS. We've typically found that you can go with a coalition of the willing, with the blessings of administrators, if you don't ask that everybody in the school be on board. We've seen many schools be transformed by the modeling that a small group of teachers has provided for how to meet the common goals of the school in a more engaging way. Others are much more willing to follow where you have blazed the trail. Teacher research groups can likewise document and share success, providing a model of teacher professionalism as they blaze the trail of more effective instruction.

Chapter 6

Naming and Listing:

Prerequisites for Problem-Solving and Performances of the Possible!

Jeff is a “namer.” We’ve already mentioned how he names rapids in the rivers he runs. He names his cars. His first car was named Ophelia and it was an apt name because she broke down and broke Jeff’s heart. His last car, used extensively for outdoor trips, was “The Viking Mobile.” He gives his students nicknames – this year Melissa, for example, so flexible and upbeat, is “Mellifluous.” His daughter Jasmine has numerous nicknames, each with a unique story behind it. At a recent cross-country meet Jasmine competed in, a neighboring fan asked Jeff how many kids he had in the race. Jeff had to laugh – he had only one, but he was cheering for her with six different names.

Jeff is also a list maker. Every weekend he makes a day-by-day list of what he must get done that coming week. Every morning, he revises that list into a daily list that he carries around to keep him on track. He also has a bucket list that he keeps in his calendar along with a short list of what he would most like to experience or achieve in the short term. He’s the family organizer so he is the keeper of grocery lists and equipment lists and to-do lists for the house. He keeps lists to get things done.

Jim also is a namer and keeper of lists. In his notebook, you will find lists of books he wants to read, papers he needs to read and respond to, future possible projects, quotes or observations from the day, a running list of song titles and artists he wants to include on his annual CD swap with friends in November, and of course, whatever he needs to get done that day. Over the years, these lists have moved from lists of general topics to lists of really small and concrete action steps he can take. For example, instead of “write Chapter 3,” his list includes the following: write a summary sentence for the chapter; write the promise paragraph to your readers; write the list of references, re-read the section on characters, and so on. For Jim, the listing and the naming are ways he copes with feeling overwhelmed. The naming helps him see what to do; the listing gets it out of his head so that he’s not paralyzed with inaction.

Michael does the food shopping for his family and lists are essential if he has any hope of getting everything his family needs. In fact, he’s taken to writing them on 8 x 11 sheets of paper to reduce the likelihood that he will leave them somewhere in the grocery store as he has been known to do. And he’s learned over the years to make them more and more specific as his memory is becoming less and less reliable. “Stuff for the cookout” has given way Italian sausage, all-beef franks, and so on. Lists are also essential for professional life. Michael characteristically thinks through how an article or chapter will proceed and doesn’t begin writing it until it’s ready to hatch. But when he’s done that thinking, he captures it with a list. Otherwise he’d lose the sense of the whole that’s so important for him because of his focus on the specific. He has a white board in his office that contains two lists: what he needs to do and the items that should appear on the next department agenda.

There are myriad purposes fulfilled by naming and by listing: in fact, we think that naming and listing require a kind of thinking necessary for all other informational/explanatory texts. Cognitive science agrees: Listing is a first step of knowledge activation and generation, moves us towards problem-solving performances, and it always involves naming (Damasio, 2010).

Why Naming and Listing Matters

Naming and listing are hugely important in education. (MARGIN: CCSS anchor standard 2a at each grade level for the reading and composing of informative/explanatory texts).

Research in activity theory (see, for example, Halverson, 2002), a theoretical framework that’s becoming increasingly important in education, has identified myriad distinct purposes for naming: conceiving, remembering, making accessible, bringing into existence, making real, placeholding an idea for tweaking/revising/ honing/and sharpening, reconceiving or reframing of concepts and processes, manipulating ideas and combinations of ideas, communicating, thinking through,

categorizing, pattern-seeking and pattern establishment, defining, comparing, classifying, meaning-making, problem-solving, theorizing.

Let's look in greater detail at just one illustration. In research on the learning of strategies, it is noted (see, e.g. nichcy.org/research/ee/learning-strategies) that when students name the strategies they are developing and using that this makes the strategies more available and more likely to be used and transferred to future situations.

Likewise, the CCSS uses similar language to name the processes important to meeting both the reading and writing standards. This is a smart move in that teachers will be able to name and share what they are teaching and students will be able to name what they are learning in the same terms. For instance, across grade levels and situations, the CCSS uses claim, evidence and reasoning to talk about argument; and task, purpose and audience to discuss issues of rhetorical stance. This consistent naming should give power and focus to our instruction and assessment and help provide conscious competence to students. Also, it's important to note for our purposes here that there is the naming of specific strategies necessary for effective writing both generally, and when applied to specific text structures.

Other disciplines also place a huge emphasis on naming. The persistence and historical continuity of the linking of naming with power are unmistakable:

A common concept in history is that knowing the name of something or someone gives one power over that thing or person. This concept occurs in many different forms, in numerous cultures—in ancient and primitive tribes, as well as in Islamic, Jewish, Egyptian, Vedic, Hindu, and Christian traditions. (Graham, 2009, para 1).

Graham (2009) also points out that in Genesis, God names before he creates: "God said 'Let there be light, and there was light.'" Naming is the necessary prerequisite to creation. Naming in fact helps things come into being. God then gave man the right to name the animals and at the same time stewardship over them. The right to name gives a right to power

The mathematician Alexander Grothendieck put a very heavy emphasis on naming as a way to gain cognitive power over concepts, processes and objects as a prerequisite to understanding. (MARGIN: Though naming is not explicitly foregrounded in the CCSS, it is implied in many places like reading standard 5 at the 9-10 grade level and reading standard 6 at the 11-12 grade level) Graham (2009) cites a contemporary of Grothendieck's who wrote: "Grothendieck had a flair for choosing striking, evocative names for new concepts; indeed, he saw the act of naming mathematical objects as an integral part of their discovery, as a way to grasp them even before they have been entirely understood" (para 3).

The neurobiologist Dan Siegel (2007) makes a similar point: neurologically what happens in naming is different from that in storytelling and other forms of organizing experience, in both process and result. He describes how, in brain scan studies that had subjects induce emotional distress (e.g., by remembering a loss in their life), the right brain would become overstimulated, flooded with emotion, and often overwhelmed. However, when the distressed person could use their left brain function of applying language to name the emotional state, the entire brain system would calm down, and further reframing and behavioral and emotional options became available. As Siegel puts it, "You have to name it to tame it." Siegel emphasizes that the naming has to come from a mindful state of observing the phenomenon at hand.

We could go on, but suffice it to say that for both teachers and learners naming confers *descriptive power* that helps us make sense of the world, *rhetorical power* that helps us communicate, confer and make meaning together about the world, *inferential power* to see new connections and make new meaning, deepening understanding and seeing possibility beyond what is explicitly and directly known. Through this process we develop and exercise applications of both *personal power* and *disciplinary power*.

Clearly, naming is prerequisite to the mastery of all thought patterns and text structures.

How We Name Things

In order to name something, one can engage in two different processes. On the one hand, one could access pre-existing names for the concepts already used in the disciplines or in common discourse. (MARGIN: See, e.g., the three tiers of vocabulary in Appendix A of the CCSS.) On the other hand, as we create new understandings and new knowledge the issue becomes one of invention, as we will need to create and assign new names to new insights and discoveries. This can be done by inventing a name or modifying an existing name, often by employing simile or metaphor, onomatopoeia, rhymes, or alliteration; by developing acronyms and abbreviations; by combining pre-existing names; or through the use of known prefixes and suffixes.

In this book, for instance, we used George Hillocks' names for the first four kinds of knowledge, and then used existing words to name what we discovered to be an essential fifth kind of knowledge: knowledge of purpose and context. We likewise used existing words to name the five kinds of composing. Naming the five kinds was a kind of dialectic – naming them helped us to understand and test them, often leading to rejecting or refining a name. Monitoring our own composing and discussing what we've learned about what happens when we and our students engage in composing also led to the naming.

Sometimes we rename ideas for our students to make these ideas more accessible. Though we would generally argue for using the term of art from the disciplines as the names for things (to meet the correspondence concept most closely), sometimes these terms are difficult for our students and stand in the way of understanding. For example, Michael and Jeff (2007) suggest creating more readily accessible names for some grammatical terms. When Jeff realized that his students did not understand what an adverbial conjunction was and how it worked, he began calling it a "logical linker" which was more helpful to them. Michael and his ninth-grade students made lists of "promise words," subordinating conjunctions and relative pronouns, that promised a "two-part" (instead of a complex) sentence. On some occasions, Jeff has coined neologisms to teach, such as "two-fer" or "three-fer" to describe details that convey multiple kinds of information. Michael and his preservice teacher education students call themselves "Englishers" as a way to remind themselves that the 7-12 students with whom they are working might have a different attitude toward their subject. Likewise, when Jim is working with student teachers, who are often worried about classroom management, they use the term "magnet students" to name the one or two students in each class who the other students are attracted to. It's the "magnet students" who student teachers can work with to foster the magnet students' leadership and agency for the health of the classroom community.

How We Use Lists/Lists as Intellectual Work

Once we have named something we often put it into a list. A list may seem to be merely a rudimentary text structure, but George Hillocks (1995) explains that it is one of four basic text structures, that it does important intellectual work, and that it can elicit "any of the basic affective responses" (p. 119): the empathic (in which the reader enters and lives through the world of the text), the opus-oriented (in which the text focuses the reader's attention on discovering relationships among its parts for expressing deep insights), the detached/logical (in which the reader's attention is focused on the logical step by step relationship of presented information), and the involved (in which the reader's attention is focused on the values and emotions engendered by the text).

George isn't alone in being convinced of the power of lists. Take a look at this exchange between the magazine editors of *Der Spiegel* (2009) and world-renowned textual scholar Umberto Eco:

SPIEGEL: Mr. Eco, you are considered one of the world's great scholars, and now you are opening an [exhibition at the Louvre](#), one of the world's most important museums. The subjects of your exhibition sound a little commonplace,

though: the essential nature of lists, poets who list things in their works and painters who accumulate things in their paintings. Why did you choose these subjects?

Umberto Eco: The list is the origin of culture. It's part of the history of art and literature. What does culture want? To make infinity comprehensible. It also wants to create order -- not always, but often. And how, as a human being, does one face infinity? How does one attempt to grasp the incomprehensible? Through lists, through catalogs, through collections in museums and through encyclopedias and dictionaries. There is an allure to enumerating how many women Don Giovanni slept with: It was 2,063, at least according to Mozart's librettist, Lorenzo da Ponte. We also have completely practical lists -- the shopping list, the will, the menu -- that are also cultural achievements in their own right. (www.spiegel.de/international/zeitgeist/0,1518,659577,00.html, accessed November 14, 2011)

We can move away from the high-brow and find equally strong endorsements for the power of listing. Here's what Squidoo has to say:

As odd as it may seem, there is power in putting your tasks or goals on paper. Now it's real. You can see it. You're committed. That little voice in your head will begin to nudge you in the right direction. [Putting a goal in writing](#) helps refine your focus and propels you forward with intent.

Once you can hold that piece of paper in your hand, it brings visibility to the tasks/chores/goals and you'll increase the likelihood that you will get the job done, whatever that may be. (www.squidoo.com, accessed November 14, 2011)

In short, naming and listing are hugely important both in school and out. As a consequence, they are well-worth teaching.

Composing to Plan: Introducing Naming and Listing

Model Unit: What Do We Need to Survive and Thrive in Middle School?

Throughout this book, we will explore how we (or teachers with whom we closely work) have used the five kinds of knowledge and composing in the context of specific inquiry units that both reward and require the use of the thought pattern and text structure under consideration in that chapter.

We will then feature some few of the representative activities used in that unit to develop the five kinds of knowledge and composing. Please note that each activity could be adapted and used in other units for cultivating the same kinds of knowledge and composing. Our goal is to provide models of different yet flexible and transferable techniques for developing the five kinds of knowledge through employing the five kinds of composing. But because, as we argued last chapter, meaningful instruction must be embedded in a meaningful context, we'll discuss this teaching in the context of inquiry units.

In this chapter, we'll do so by looking at teaching naming and listing in the context of a unit framed with the essential question: What do we need to survive and thrive in middle school?

The question stem, "What do we need to survive and thrive?" can easily be adapted for use in all content areas: "What do we need to survive and thrive . . . on a camping trip, in outer space, in algebra class, in the future (e.g. in a career), in case of a terrorist attack, as a sustainable planet, while living in another culture, on a trip to Italy?" (MARGIN: UNIT IDEAS)

Pursuing this unit on surviving and thriving in middle school requires and rewards naming and listing. The phrasing of the essential question also suggests a culminating project - to develop a guide for new middle schoolers and their parents as well

as a video introduction to navigating middle school. Both included checklists that featured items like: what you need to know about your locker, about getting around the school, about your schedule, what to do if you are bullied, etc.

Because one of our major instructional principles is to start with student experience and then bridge this to the meeting of new challenges, we began our work on naming by asking students to share their own nicknames or those of others they knew. We then asked them to share what that nickname indicated in terms of personality traits, feelings, comparisons, implications, evaluations and the like. Jeff shared that his middle school nickname as “Nerf” since he had a head of long curly hair that looked like a nerf ball. “Nerf” also implies a certain flexibility and loveability, or so Jeff likes to think.

After sharing nicknames and what could be inferred from them, students discussed what nicknames were most interesting, informative and memorable. From here, we asked them to invent a favored nickname for themselves, favorite popular culture figures, a potential band, wrestler, or a product like new cell phone. (MARGIN?: LESSON IDEA)

This activity also provides the benefit of tuning students in to names in popular culture and literary texts. Peter Rabinowitz (1998) identifies names as well as initials as a “rule of notice” – in other words, names in literary texts typically imply deeper meanings since the author chose the name.

Following these short activities the students brainstormed the following criteria for a good name, primarily that the name is accurate, and that it makes what is named easier to remember, more understandable, captures some kind of essence, gets after the right feeling, is memorable.

With this preparation we move to lists. We start by asking the kids to think of times in their lives when they have made lists. As they share their ideas, we also share ours, and ask the students to keep adding to their list of when they use lists, or might use lists. (MARGIN?: LESSON IDEA- BRAINSTORMING, MONITORING OF OWN LIFE EXPERIENCES)

Jeff will typically share that his family has a grocery list on their kitchen counter. Any time a family member wants an item from the grocery store, or notices that the family is getting short on some necessity, it is his or her responsibility to put that item on the list. Jeff asks his students what the purpose of this list might be. Answers vary from “keeping track of what you need” to “making sure you don’t forget things and have to go back to the store” to “helping the person going to the store to know what to buy”. These are clearly very functional purposes that the students can all relate to. We might call these functions “keeping track” and “placeholder” and argue that they help us remember in ways that promotes efficiency and saves time.

The “Basic Five” is also often shared by Jeff as the essential kayaker’s list. Every kayaker, before leaving home, makes sure she has her 1) boat, 2) PFD (lifejacket), 3) paddle (or “blade”), 4) helmet and 5) skirt. Forget one of these and you will not be kayaking. You will be reduced to being a shuttle bunny who carries other people’s kayaks and transports others to the put-in and from the take-out. This is a kind of list that also helps to promote efficiency and keep track of necessary equipment for having fun on the river.

Jeff will also make a point about how on a river or backpacking trip, food and gear lists become more complicated, high stakes, and important. You won’t have the opportunity to run to the store for something that is missing.

The lists also become the starting point for using what is on the lists in other kinds of text structures. For instance, Jeff always classifies the family grocery list to match the aisles in the grocery store before he heads off. This makes doing the shopping much easier. Likewise, gear lists are classified and divided up among rafts (or packs or backpacks, depending on what kind of trip you are taking) – one raft is the kitchen boat, another the groover barge, etc. Once again, we see how text types are all about functionality – what kind of work needs to get done – and about embeddedness. Text structures often lead one to another, or are nested in each other.

In a further activity, we ask students to find and analyze the writing they and their family do, focusing on how lists figure in to each kind of writing. (MARGIN?: LESSON IDEA – ETHNOGRAPHIC OBSERVATION AND NOTETAKING)
We combine the lists the next day and brainstorm the purposes of each type of writing, as well as considering how listing is

implicated in each kind. We like to involve students in this kind of ethnographic research as it makes their own lives and literacies worthy of study, and connects their lives to the inquiry and learning at hand.

Sometimes, in Jeff's house, the grocery list will have an item like "green clover looking thing for guacamole". It might take some discussion to figure out that what is meant is "cilantro". The description, though amusing, is not going to be helpful to the grocery shopper. What we need here is a "name" that matches the name used by the grocery store.

So far, we been getting mostly after knowledge of purpose and context. We next follow with an activity that more specifically begins to develop procedural knowledge of substance, which fleshes out more fully our composing to plan.

After discussing their ethnographies, we engage students in making a variety of lists and monitoring how they do so.

Activity: (MARGIN: LESSON IDEA)

Here are some contexts in which people might make lists. When might such a list be useful? What kinds of items might go on the list?

Celebration/holiday presents to buy:

Expenses of owning/operating a cell phone (or bicycle, car, or renting an apartment):

Repairs to be done around the house:

Packing (for what? School, music or athletic practice, vacation):

Preparations (for what?):

Requirements for (perfect boyfriend/girlfriend/date/meal/school/class/ home/survival guide for middle school, etc.)?

Materials needed for task completion (like building a fence or writing a paper, or completing a video guide for surviving middle school)

Bucketlist (for the autumn/middle school/life/???)

Other situations in which you might make a list: Why?

Once students have completed the activity on their own, we put them in pairs to compare their lists and add to them. We ask them to consider: Were there items or ideas that were hard to name? How did they go about trying to find or assign names to things?

When we debrief, we list procedural strategies for generating lists. Our students came up with this list: search your memory, use your imagination, use a brainstorming technique, work with someone else, attend to surroundings, etc. (all procedural knowledge of substance).

We also list the kinds of lists we've identified that exhibit different kinds of logic or patterns of thought, which already leads students towards procedural knowledge of form. This is what Jeff's class came up with the last time he tried this activity:

Simple or unorganized lists.

Paired lists: for instance if you buy different kinds of items at two separate grocery stores – your food coop or a farmer's market and the regular grocery store.

Matching lists: e.g. for holiday gifts. You will have a list of people to get gifts for, and a list of possible gifts for each person.

Reference/compiled lists: dictionaries, telephone lists, lists of team members

Significant lists – compiled in order of importance, of chronology, size, intensity, the order in which something will be found (like the grocery store) or experienced.

Possible outcome lists – this might lead to prediction and likelihood rankings

Play lists (for music)– which might be sequenced by personal preference

Top ten lists – ranked by order of preference or importance and influence

Scrapbooks – a collection of items that might be put in some order, like chronological or some other form of significance.

The important thing is for students to understand that lists always occur in a problem-solving situation and are made for a particular purpose. Depending on the purpose, and the possible relationships of the listed items, the order of the list might be significant – an idea explored below in composing to practice.

Composing to Practice

Once we've engaged students in understanding the importance and contexts of naming and listing and have started them thinking about how they do so, we give them plenty of practice in developing further expertise in generating and shaping lists. We have found a number of techniques particularly useful.

For the purposes of naming and listing,

Popcorn is a brainstorming technique where participants just throw out ideas to the group, for example, to develop knowledge of purpose and context while composing to plan, students were asked to in respond to “when do we need to name things?” and “what are the purposes of naming?” and “what would be a good name for X?” Usually, a scribe records the ideas on the board or anchor chart, which can be studied and refined later.

Forced Listing is a technique that requires students to stretch to write down a certain number of named ideas. We’ve seen versions of this called “Stretch to 77” or “101 ideas”. When students create lists of ideas about the inquiry topic, e.g. what do you need to survive middle school, they are both naming and listing. They are also composing to plan as the ideas can be used later, and are also engaged in procedural knowledge of substance as they generate ideas obtaining to the essential question, learning how various brainstorming techniques help us to access and invent material.

Students can work individually, then in pairs, then in larger groups as needed to come up with the requisite number. In qualitative research, there is a similar idea called the forced memo. Every now and then, the researcher reads through data and then forces herself to write about the data, to name what it means to her, what connections she might see, etc. It is akin to the next two techniques in that it accesses unconscious processes and attempts to overcome conscious resistance. Often knowledge retrieval, knowledge creation, and creativity can be enhanced by accessing the unconscious.

Meditation is Latin for “single minded attention”. When we use this technique, we have students take three or more deep breaths, relax, then try to bracket out all other thoughts except the topic of the brainstorm, e.g. Focus on your key question such as ‘What is a good name for X?’ or ‘What do I need to survive middle school?’ If the mind strays, as it will, then refocus on the topic as soon as you realize you are straying. As ideas come to you, or after specific amounts of time, write down whatever has come to mind about the topic.

The purpose of **freewriting** is to access your deep thoughts and to let them flow. There is no editing or worries about spelling or grammar or punctuation. The goal is to free your mind! Typically you set a goal, e.g. to write for five minutes or to fill three pages. And then you just write. If you have nothing to say you keep the pencil or pen or fingers on the keyboard moving – trying to stay on topic, even if just to write: “I don’t know what to say about how to name X or what I need to survive middle school . . . I can’t think of anything X suggests to me, etc. etc.” Eventually, the ideas come.

We also like to combine the techniques of **brainwriting**, the **passaround** and the **gallery walk**. As in regular brainstorming, students work in a group, but in brainwriting each participant thinks and writes individually. Everyone has her own sheet of paper. We’ve had good luck with giving students three minutes and by providing a goal or deliverable to get down at least three ideas which are unedited.

What has been written then gets passed around to the next person in the row or circle. Students read the ideas that were passed to them and then come up with three new ideas to add to that sheet – using what is on the sheet as a prod or trigger as applicable. This can be done for multiple turns and then what has been written used as the source for further brainstorming, refining and combining.

An alternative to the passaround is the gallery walk. Students list and post their ideas on chart paper and then members of the class walk around, spending at least one minute with each posting (on a desk, taped to the wall, etc.) and adding at least one idea to each person’s chart. Again, the result is naming that leads to listing.

Each of these techniques can be used to get started with any thought pattern/text structure, as long as students have some prior experience and knowledge of that pattern.

Several studies (e.g. Diehl and Strobe 1987; 1991) found that with brainstorming, participants who first worked in isolation consistently outperformed participants working in groups, both in quantity and quality of ideas generated. This was because participants were not blocking each other initially, and were cross-pollinating each others' ideas during the sharing that followed. Ideas are recorded immediately and privately, and all contribute equally, unlike conventional oral brainstorming. Everyone has a clear purpose and deliverable. All ideas are valued and responded to. Students who do not like to speak in front of the group are not hampered. (MARGIN: cf. CCSS for speaking and listening; Different possibilities for group types are named in Speaking and Listening Standard #1 at each grade level)

Rolestorming is brainstorming during which you imagine yourself to be someone else with an interest in the topic. What would you name this thing if you were someone else? What would you list about surviving middle school if you were your parent? teacher? partner? best friend? opponent? Someone from a different culture, et al? Likewise, **mantle of the expert** brainstorming means you take on the role of an expert, or famous historical figure, and brainstorm as you think that they would (Wilhelm, 2003/2012). (MARGIN: cf. CCSS for seeing multiple perspectives, multimodality; see CCSS Writing Anchor Standard #8, Speaking and Listening #2, #4, #6)

Metaphoric thinking is another way to brainstorm names through the use of similes or metaphors. In this technique, students can be asked to complete a model sentence:

_____ is/was/are/were like _____.

In the first blank put a description, phrase, or idea you are trying to name or explore. Then try to brainstorm as many answers as possible for the second blank, writing them down as you come up with them. After you have produced a list of options, look over your ideas. What kinds of ideas come forward? What patterns or associations do you find? How could your idea be distilled into a single word name or short phrase? (ideas adapted from <http://celestinechua.com/blog/25-brainstorming-techniques/>) (MARGIN: cf. CCSS emphases on seeing patterns, and on multimodality which are implicated in all the reading and writing standards at all levels)

Drawing terms. Students can be asked to draw the essence of an idea and then use this to brainstorm names. Conversely, they can illustrate a term or concept without words. (Wilhelm, 2004/2012) (MARGIN: Cf. CCSS multimodal composing)

The Analogy or Medici Effect refers to how ideas in seemingly unrelated topics/fields intersect. Put your idea or goal alongside similar ideas or goals in different areas/contexts and identify parallel themes/solutions. For example, if you are trying to name a piece of art or artistic technique, look at titles and techniques from music, gaming, dance, etc. Are there any commonalities that are suggested that you can apply to your situation? What worked for each of them that you can adopt or adapt in some way? (ideas adapted from <http://celestinechua.com/blog/25-brainstorming-techniques/>) (MARGIN: Cf. CCSS on seeing patterns, multiple perspectives.)

Trigger talk/triggerwriting is a technique where you take the best ideas from one of the previous brainstorm techniques and then select the best ones and brainstorm verbally or in writing on those few ideas as 'triggers' for more ideas. You can repeat several times.

We've provided quite a list of brainstorming techniques here. You would only use the few that you think would help your students to develop procedural knowledge of substance in the context of your unit. For example, if the naming and listing

are easy, as it was in our unit on what is needed to survive middle school, then we moved to complicate and enrich the brainstorming by using the rolestorming and putting the kids in the position of parents or teachers. When we read a piece written for teachers about the transition to middle school, we used the Medici effect to brainstorm related terminology that would be friendly and useful to students.

Naming and Vocabulary Development

Naming is obviously aligned with vocabulary development. Research on vocabulary development (Graves, 2009) clearly demonstrates that typical instructional habits like having kids memorize definitions does not work to develop vocabulary. This is because the students are not composing understanding for actual use; they are not generating their own understandings and applying this in a context of use; they are, in other words, not composing to plan. Graves argues that vocabulary development is fostered by four actions. The first is wide reading (MARGIN: CCSS Reading Standard #10, Language Anchor Standard #3). In inquiry, students read widely around a central issue and particular relevant terms are repeated and co-produce understanding of other related terms. Vocabulary is also supported by the teaching of individual words if those words are taught *in context* (MARGIN: CCSS Language Standard #4.a and #4.d at any grade level) and immediately used in reading and writing. Thirdly, teaching word learning strategies, (MARGIN: CCSS Language Standard #4 and #5) like how to use context to discern meaning, supports vocabulary growth, and finally, so does fostering word consciousness – i.e. how words are made, understanding of Greek and Latin roots, prefixes and suffixes (MARGIN: CCSS Language Standard #4.b at any grade level).

Composing to Practice

Thus far our focus has been on generating lists. It's important also to help students understand lists can be organized in a meaningful order. As we noted earlier, we call such lists "significant".

We have found the comparing of lists and of reorganizing them to be significant a great way of composing to practice, (MARGIN?: LESSON IDEAS) introducing students to the notion of patterning and to give them practice in noticing patterns. This of course, develops procedural knowledge of form for lists and prepares them for work with more complex text structures.

As an example, Jeff's list of chores for the weekend is a simple list unless the completion of one chore is necessary to complete other chores, In such a case, the list would have a chronological and hierarchical order that is meaningful.

Bothered	Comfortable	Water
Irritated	Well-off	Food
Angered	Affluent	Shelter
Outraged	Super-rich	Affection

In these lists, the order is significant and meaningful. In the first list, the adjectives go from least to most angry, so there is a progression of intensity. There is a logic of superordination and subordination. If the items were rearranged, then the implicit meaning and usefulness of the list would be changed. The second list goes from less to more rich; the third list through Maslow's hierarchy of human needs from most to less important to immediate survival. Understanding the pattern gives more power to the list, and allows the reader to anticipate what might come next or be added to the list and where it would be placed. Adding items to existing lists is another great exercise for students that involves procedural knowledge of substance and form.

A great follow up is to provide lists with an element that does not quite fit, and then ask students to make other such lists.

For example in a unit on teen health, Jeff provided this list:

Banana

Apple

Snickers

Rice cracker

Students quickly identified that the list was about healthy snacks (or complex carbohydrates, if they had been paying attention!) and that Snickers (filled with simple sugars) was the outlier on the list. They went on to make other food and health related lists with an outlier, then passed these around. Other groups were to identify the outlier, identify the topic of the list, add to the list, and reorganize it into a significant list if they could.

Survival simulations. In our unit, we moved next to survival simulations. These were hugely successful as they engaged the students in significant listing and in the concepts of survival. We used three free simulations available on the website: <http://wilderdom.com/games/descriptions/SurvivalScenarios.html>

The simulation activities held the additional benefits of developing, naming and reflecting on skills in group interaction, speaking, and listening that we used throughout the rest of the school year.

(SAM – I ASSUME WE CAN USE THIS BUT PERHAPS WE MUST EXPLORE PERMISSION). Here's the first simulation, developed by NASA for use by teachers. Obviously there are many science connections here.

NASA Exercise: Survival on the Moon

Scenario:

You are a member of a space crew originally scheduled to rendezvous with a mother ship on the lighted surface of the moon. However, due to mechanical difficulties, your ship was forced to land at a spot some 200 miles from the rendezvous point. During reentry and landing, much of the equipment aboard was damaged and, since survival depends on reaching the mother ship, the most critical items available must be chosen for the 200-mile trip. Below are listed the 15 items left intact and undamaged after landing. Your task is to rank order them in terms of their importance for your crew in allowing them to reach the rendezvous point. Place the number **1** by the right of the most important item, the number **2** by the second most important, and so on through number **15** for the least important.

Your Ranking NASA Ranking

_____ Box of matches _____

_____ Food concentrate _____

_____ 50 feet of nylon rope _____

_____ Parachute silk _____

_____ Portable heating unit _____

_____ Two .45 caliber pistols _____

_____ One case of dehydrated milk _____

_____ Two 100 lb. tanks of oxygen _____

_____ Stellar map _____

_____ Self-inflating life raft _____

_____ Magnetic compass _____

_____ 20 liters of water _____

_____ Signal flares _____

_____ First aid kit, including injection needle _____

_____ Solar-powered FM receiver-transmitter _____

Answers

Item Ranking and NASA's Reasoning

Box of matches **15** Virtually worthless -- there's no oxygen

on the moon to sustain combustion

Food concentrate **4** Efficient means of supplying energy

requirements

50 feet of nylon rope **6** Useful in scaling cliffs, repairs and tying materials together

Parachute silk **8** Protection from the sun's rays

Portable heating unit **13** Not needed unless on the dark side

Two .45 calibre pistols **11** Possible means of self-propulsion in low gravity situations

One case of dehydrated milk **12** Bulkier duplication of food concentrate

Two 100 lb. tanks of oxygen **1** Most pressing survival need (weight is

not a factor since gravity is one-sixth of the Earth's -- each tank would weigh only about 17 lbs. on the moon)

Stellar map **3** Primary means of navigation -- star patterns appear essentially identical on the moon as on Earth

Self-inflating life raft **9** CO2 bottle in military raft may be used

for propulsion

Magnetic compass **14** The magnetic field on the moon is not

polarized, so it's worthless for navigation

20 litres of water **2** Needed for replacement of tremendous liquid loss on the light side due to perspiration

Signal flares **10** Use as distress signal when the mother ship is sighted

First aid kit, including injection needle 7 Needles connected to vials of vitamins, medicines, etc. will fit special aperture in NASA space suit

Solar-powered FM receiver-transmitter 5 For communication with mother ship (but FM requires line-of-sight transmission and can only be used over short ranges)

Scoring:

For each item, mark the number of points that your score differs from the NASA ranking, then add up all the points. Disregard plus or minus

differences. The lower the total, the better your score.

0 - 25 excellent

26 - 32 good

33 - 45 average

46 - 55 fair

56 - 70 poor -- suggests use of Earth-bound logic

71 - 112 very poor – you're one of the casualties of the space program!

... published in the July 1999 issue of the NightTimes

This activity was so successful we followed with a desert survival simulation, then a nuclear holocaust survival simulation (ranking people and human capacities to the survival of humanity), and then a more complex winter survival simulation. We then used a couple of simulation prompts and asked students, as homework, to generate their own ranked lists of what would be needed to survive in that situation –surviving in a foreign culture, surviving middle school. Except for the complex simulation, the first three were completed in much less than a class period, allowing lots of time for reflection and consolidation of what had been learned.

We adapted the debrief questions from the URL to compose to transfer about group work as well as about how people must work together to survive and thrive:

- How were decisions made?
- Who influenced the decisions and how?
- How could better decisions have been made?
- Did people listen to each other? if not why not?
- What roles did group members adopt? Similarities and differences? Costs and benefits of each in terms of group dynamics and survival?
- How was disagreement and conflict managed?
- What kinds of behavior helped or hindered the group?
- How did people feel about the decisions?
- How satisfied were you with the final decisions (ask each participant to rate his / her satisfaction out of 10, then obtain a group average and compare / discuss with other groups' satisfaction levels)
- What have you learned about the functioning of successful or unsuccessful groups?
- How would you do the activity differently if you were asked to do it again?
- What situations at work/home/school do you think are similar to this exercise?
- What are the criteria for creating a significant list?

As we reflected on the criteria for significant listing the students discussed rules of inclusion and exclusion and proposed the following ways of judging what needed to be on a list: definitely needed- maybe needed- not so much; absolutely necessary – helpful - luxury item or not useful in this situation. These seem to capture the crux moves of listing: do you have everything that

is needed? Can you justify this with criteria related to the situation? Depending on the situation, have you prepared for eventualities as well as necessities? If you have included luxuries can you justify their inclusion? If things will not be useful – delete them!

Rough Draft and Final Draft Composing

After practicing with lists like those cited above, we then create a situational prompt for students in which the list answers a problem that needs to be solved in the context of our inquiry. Here are some lists our students created:

Who might help us understand what is necessary to surviving in middle school?

Middle schoolers, teachers, counselors, parents, psychologists, researchers.

Who might use our lists?

Middle schoolers, parents, middle school teachers, middle school counselors, elementary school teachers, elementary guidance counselors.

What do students need to know and be able to do to survive the first few days of middle school?

How lockers work, how class changes work, how to get around the school using the traffic flow system, how the lunch room works, how the guidance office works, how team-teaching and the house system works, how the bus schedule works, how physical education works, how advising groups work.

These names and lists, final drafts in themselves, led directly into the planning and creation of the guides and introductory videos that we then created.

These activities reinforce composing to plan – and knowledge of purpose and context – while simultaneously enacting procedural knowledge of substance leading to declarative knowledge of substance. As students rearrange the lists into orders of importance or by the chronology of when the challenges and needs will be presented, etc. then they are engaged in procedural knowledge of form to develop declarative knowledge of form. Because naming and listing are simple thought patterns, they are also engaged in drafting and finalizing.

Because both naming and listing are relatively simple and familiar, students can do a lot of drafting and revising in short order, through activities such as those described above. They can publish their lists on chart paper around the classroom, and use these lists as the grist and raw material for mapping, webbing, graphic organizers and other texts that lead to the understanding of further patterns and the composing of more sophisticated text structures.

During drafting, it's important to apply the critical standards that the class has developed together throughout the composing to plan and practice. As we noted for naming, our students typically come up with criteria such as the name is accurate and that it helps you understand and remember. For listing, our students articulate standards like: comprehensive, organized and patterned as needed to be most explanatory and usable. We ask students to use these criteria (and revise them as necessary) as they draft lists together and then alone.

In the unit “What do we need to survive and thrive in middle school?” small groups divided topics that they had identified like knowing how to get around school, knowing about bus schedules, knowing about extracurricular activities, etc. They generated lists of what needed to be known about their topic, and created both checksheets for future middle schoolers, and an instructional video “Everything you need to know about extracurricular activities at our middle school” which of course listed the extracurricular activities, and what you needed to know about each one. These of course added some description to each item, leading us towards our next text structure.

Development of Classroom Culture during drafting and finalizing

This inquiry was the second unit of the year in the sixth grade classroom where we taught it. It followed the identity unit: What makes me me? undertaken so we could get to know each other since we came from different elementary schools. The topic of the second inquiry and their initial experiences entering middle school were compelling and fresh in their minds: what did they wish they had known during the first few weeks of school and how could we help next year's sixth graders?

Because it was taught early in the year, we named and listed guidelines for peer responders. We started with lists of what a good peer response group would sound like, look like, feel like, etc. that reinforced the processes of naming and listing. At the same time, it helped us articulate standards and processes for helping each other. Since the lists included items like "feel appreciated", and "sounds like helpfulness", "asks honest questions to help do our work", we introduced students to the P-Q-P (or P-Q-S) protocol. Upon reading another's work, begin by saying what you like (Praise), wonderings you have about the content, form and process of composing (questions), and suggestions for improving the names or lists (Polish/Suggestions). We even introduced the students to stems for asking assistive questions ("Tell me more about why X is on the list; why you put X before Y on the list . . .") and making respectful suggestions, "I wonder what would happen if . . ." These suggestions for stems were put on an anchor chart to guide them in their peer response. (For more stems and suggestions, see Wilhelm, 2007).

Peer groups then read each others' checklists and viewed each others videos, using the PQP format. Before final revision, publishing and archiving for use by next year's fifth graders, we showed our lists and videos to a focus group of 5th graders from the neighboring elementary school and their parents and teachers, since they were the audience for our work. (MARGIN: CCSS Anchor standard for Writing 4, purpose and audience consideration) These audiences also used the P-Q-P format to provide feedback before the final composing.

Composing to Transfer: Meanings and Effects of Naming and Listing

The CCSS requires that students attend to and understand the meanings and effects of various kinds of text structures so we work to make sure that our students develop this kind of knowledge as they work with names and lists.

Throughout all of our units, we use formative assessments on a daily basis so students can name and celebrate what they understand, and so that we can name what they know and what they could do next if we provide the right instructional support. The work that students did each day in the described activities obviously was a kind of formative assessment giving us all feedback on our progress.

Another specific formative assessment we used a lot in this unit is called "Muddy/Marvy" (Wilhelm, Wilhelm and Boas, 2008). In this technique, students are given two stickie notes. They use one note to record a new insight about naming, listing, or what we need to know to survive middle school on one of the stickies. To extend the reflection, they can be asked to write a note about how they came to reach this insight, or a justification of this knowledge on the back of the note. Likewise, they are asked to take the second stickie and write down one question or concern they have about their understanding, their progress towards the culminating checklists and videos, etc. As students leave class, these two exit tickets are posted on either side of the doorway or on an a chart labeled Muddy and another labeled Marvy. It is simple for us to read through these "lists" between classes and to note patterns of understanding and needs. And we are modeling the use of naming and listing in our own teaching.

Since naming and listing are fairly straightforward, we conclude the unit with some fairly simple reflective composing. We prompt students to write about questions using the past- present-future protocol: Past: What did I learn about naming and listing, and/or understanding the transition to middle school? How did I help others throughout the unit? Present: At this moment, what do I find most important about the unit? In what other ways can we use naming and listing and be of service to others right now? How can I name myself and others, as well as ideas, in ways that will be positive for me and those around me? Future:

How do I anticipate naming and listing will help me in the future in school and in my life? In what other ways might we provide service to other people through lists, names, guides and videos? How could the unit be improved for next year's students?

This kind of composing to transfer helps students to consolidate what they have learned and to consider its value and future use.

To move us towards describing and expertise with other thought patterns, we concluded the unit by looking at some poems and songs that use naming and listing (e.g. "My Favorite Things" described below – Jeff couldn't refrain from also sharing John Coltrane's version, and "The Great Lover" by Rupert Brooke– and students found many other forms of lists usually in songs), and then looking at the kinds of responses that the different organization techniques elicited.

Conclusion

Hillocks (1995) argues that in order to be considered a basic text structure, a structure must have the capacity to support the four kinds of responses we described earlier. Here is the case he makes for how "significant" forms of listing elicit these responses.

Certainly, lists have an informational function, eliciting a *detached* response. I would not have my grocery list any other way. Can lists generate any other response? Poets and songwriters know they can, and they use lists to generate *empathic* responses. A case in point is the song "My Favorite Things" from *The Sound of Music*. According to Elliott (1960), one of the earliest forms of satire was the list of curses or invective used to drive scapegoats from communities during the ritual of ablation. Such lists of invective occur in various domestic and even international disputes, when one party threatens another with a list of scurrilous names. The intended effect of the list is to frighten the recipient in a very direct way (*the involved response*). The abuse leads one to expect, directly or indirectly, bodily harm or worse. Finally, the satiric technique of presenting a list in which one item contrasts with all the others, thereby undercutting its implication (zeugma), demands the *opus-oriented response*. A famous example occurs in Pope's "The Rape of the Lock" in the description of Belinda's dressing table:

Here files of pins extend their shining rows,

Puffs, powers, patches, Bibles, billet-doux.

Placing Bibles in this list strongly implies that Belinda ranks her religion along with the other accouterments of appearance." (pp. 118-119)

Here, George is getting after what we discussed in chapter 3: deep understanding of how the content is structured in particular and nameable ways (procedural and declarative knowledge of form) in order to make particular points and achieve particular effects (procedural and declarative knowledge of substance at the local and global, surface and deep levels, a major thrust of CCSS standards for reading and writing). This constitutes deep understanding of the text at hand as well as how the text structure itself works and can work in general. Promoting such understanding with lists lays the groundwork for doing the same with the more complex text structures to come.

Our major point is simply this: listing and naming are basic pre-requisites to all of the other text-structures considered to be informational/explanatory, so kids had better learn how to generate and use these thought patterns in the wide-awake ways that Hillocks delineates. Names and lists also provide a fantastic way to introduce the five kinds of knowledge and five kinds of composing.

Chapter 7

Getting Right to the Point: The Process and Promise of Summary

Sometimes you just have to get to the gist and get there quickly. Sometimes it's not just *efficient* to get right after the absolute "heart of the matter," but it's absolutely *necessary*. (MARGIN: Summarizing is explicitly mentioned in CCSS Reading Anchor Standard #2 and is implied in Writing Standard 2.b and is necessary to meeting several other standards)

When Jeff is kayaking down a blind drop, signals from the kayaker in front summarize what is absolutely necessary to know about danger spots – nothing more and nothing less is communicated. The signals provide the tersest possible summary of what needs to be known.

Sometimes at school, Jeff will need to find out or convey something about a student or situation to his team teaching partner. He might have two minutes between classes to communicate or receive what needs to be known. He and his partner better be super summarizers or things can go awry!

Jeff's daughter Jasmine didn't understand this concept of summary for quite some time. When she was little, Jeff would come home from work and in the bustle to get dinner ready and read to the girls before bedtime he would often ask Peggy something like "So what did you do today?" Peg would provide a summary of events that Jeff couldn't already assume: "We went to the library and playgroup." Jazzy would stamp her feet and say; "NO! First we got up and had raisin bran and apple juice for breakfast. Then we cleaned up and got dressed. Then . . . " and on and on. It was a family joke then and it has remained so, although Jazzy long ago learned the advantages of getting right to the point through summary.

Similarly, Michael and Karen learned not to ask their daughters Catherine and Rachel about movies the girls had recently seen, especially if Michael and Karen had any interest in seeing it themselves. Catherine will detail every single turn of the plot and Rachel, who has an uncanny memory for dialogue, will chime in with much of the attendant dialogue. On the other hand, they have experienced years of frustration upon asking the classic parent question, "What's happening at school?" Hard to believe that two young women who can talk so long about a movie can be so abrupt when asked to talk about school! In both cases, all Michael and Karen want is a summary – but they get either too much or too little!

The art of abstracting key content from one or many information sources has always been an essential part of disciplinary learning in social studies, science, math and many other domains. You can't do a discipline unless you carry a summary of the basic facts and principles for specific situations forward through your problem-solving work. (MARGIN: See CCSS Writing standard 2.b for any grade level in History/Social Studies, Science and Technical subjects. Also, reading anchor standard #2 at any level in the disciplines)

There are also many business applications for summaries: Michael's wife Karen often mentions how powerpoints are so key to working with her purchasing group. Efficient meetings require presentations that include just the right amount of information. Too much or too little just isn't useful. Jim likewise finds that the summaries provided at faculty meetings, particularly regarding ever-changing school policies, are essential to keeping him in the loop.

Another reason that summary is so important now and is becoming increasingly important is that it has become an integral part of navigating our everyday lives in the age of information glut. We generally keep abreast of world affairs by listening to news bites or reading Internet summaries, and we then try to ascertain trends in that news. We base investment decisions on economic and stock market updates and the patterns we discern in these summaries. We often go to movies after reading series of brief descriptors and reviews like those on *Rotten Tomatoes*, looking for a summary of the movie and a pattern

of endorsements. By using good summaries and knowing how to summarize ourselves, we can make more effective decisions in less time.

Summary summarized!: Why summary matters

Summary is a basic cognitive skill and a general process of reading and writing, meaning that all successful readers and writers necessarily make use of this skill every time they successfully read or compose (see Wilhelm, Baker and Dube-Hackett, 2001; Wilhelm, 2001/2012) since the gist of a text must be brought forward through the reading or writing of a text. The summary, as a thought pattern, is the basis of other forms such as the abstract, précis, synopsis, recap, compendium, digest, sketch, character sketch, resume, memo, lab reports, reviews, the executive summary, and various forms of microwriting. Equally important, summary is employed in some capacity in virtually every kind of writing. Think of a novelist providing a quick account of the developments that got the characters to where they are in the story, or a teacher writing a lesson plan for a sub, or a grant writer discussing related research. Or closer to home, try to think of some kind of writing that you've done in which you didn't do at least some summarizing.

Although all forms of the summary share many essential characteristics, it's important to understand that different kinds of summaries in different kinds of contexts written for different kinds of purposes do vary in important ways. When we write an abstract of research that we've done, we have to articulate our research questions, the theoretical background for our work, the methods we employed, and our most important findings. When Michael wrote a research newsletter though, he focused instead only on the findings and implications. The conventions differ based on kind of summary and the context of use. In this chapter, we will get after the general processes of summarization in terms of the five kinds of knowledge and five kinds of composing, but be aware that slight tweaks will need to be made to develop the task- and text-specific processes determined by purpose, context and text structure of the text being summarized, be it a character sketch, resume, a review or something else.

How Do We Summarize?

Jacqueline Berke (2007) in her classic composition text *Twenty Questions for the Writer* asserts that summary involves briefly and accurately recounting the main points in a larger body of information, and that the problem the summarizer faces is “how to strip it bare of details and implications; how to condense and communicate its core meaning” (129). She maintains that this is a highly creative and intellectually profound task, and researchers into the process would agree (see, e.g. Van Dijk, et al. 1977, Brown, et al, 1983). Berke argues “there is no greater challenge to the intellect and no more accurate test of understanding than the ability to filter an idea through your mind and restate it briefly *in your own words*. Indeed, to read and study efficiently; to do research; to take satisfactory notes; to write papers, critiques, and examinations; to grasp an idea and hold it in the mind, to carry it forward to the next required task – all require the ability to ‘boil down’ materials to manageable scope and see their basic purpose, their main points, and the relations of these points to one another” (129). Berke thus summarizes the basic process of all summarization: “Capture the purpose and topic, the key details, and the pattern expressed by the relationships between those details [MARGIN: CCSS Anchor standard #5] to communicate the key idea(s).”

Ann Brown (e.g. Brown & Day, 1983) focused explicitly on just how one does those things in summarizing text. Based on her own seminal research and that of Van Dijk and Kintsch (1977), she identifies six macro-rules for summary. These macro rules constitute the “crux moves” that students must master to compose summaries and are therefore those we will focus on in composing to practice.

The first two macro rules involve *deletion*: summarizers must discard both trivial and redundant information. The next two rules involve *substitution*, of a superordinate term for a list (called a *generalization rule*) and superordinate action for a list of

actions – (called an integration rule – note that this was Jazzy’s problem in the introduction – she did not integrate actions that fell under a larger action category).

The final two rules involve pure *summary*. First, the summarizer takes a meaningful section of text, like a paragraph or related paragraphs and then finds an encompassing topic sentence or key detail statement if there is one; and if not, the summarizer invents one for use in the resulting summary.

Producing summaries based on multiple texts and data sources is even more challenging than summarizing a single source (MARGIN: CCSS Reading Standard #7). This task involves all of Brown’s macro rules but applied across different multiple texts to be summarized - and attending to patterns of meaning across these texts (like points of comparison and contrast). This kind of summary is of essential importance in the modern world, teeming as it is with rapidly expanding and available fonts of information. The process of “automatic technological summary” or ATS, is designed to electronically search and summarize multiple data sources and is a challenge currently being taken on by computational researchers.

Of course, as Paolo Friere and other critical theorists remind us, we must also learn to read and summarize our experience and “the world” in an effort to reframe and remake that world into one of more possibility. Summarization, in all its forms, is indeed a profound and basic cognitive tool.

Composing to Plan: Developing knowledge of context and purpose for summary (MARGIN: SEE CH. 3)

Like teaching any other kind of text structure, we do so in a context of immediate use, and we use the inquiry-oriented “structured process” approach to develop the requisite knowledge and expertise over time, so that deep understanding and transfer is achieved.

When we introduce summarization for the first time to a class, we therefore like to spend a few minutes exploring real world contexts and purposes of summarization. We like a technique we call “real life seek and find” which asks students to reflect on their use of summary (or another text structure) in their own life. [MARGIN: Lesson Idea] Our students, so immersed in the summaries of signs, facial expressions, text messages and tweets, can usually get us off to a good start. They relate many contexts in which they must summarize – communicating with friends and family – during breaks or in the hallways; in-school communications regarding schoolwork or social issues; while gaming or playing sports to get updates and trade strategies, etc. Though the contexts vary and therefore the purposes, the purposes generally revolve around the following ideas:

- understand necessary information or the point of something
- communicate the gist quickly to someone else
- learn what to do
- get familiar with and retain crucial information
- save time
- turn information into a usable form, into knowledge.
- minimize and manage large quantities of information more easily
- provide the overarching meaning or themes to be carried forward.
- achieve a point of entry to something complex
- filter important and overarching ideas from less important and supporting details (superordination vs. subordination)

- facilitate gathering, placeholding, and organizing information – for the purpose of deep understanding, doing projects, completing tasks, composing papers, creating performances of various kinds

We like to keep an anchor chart on the wall so that we can add purposes and contexts for summarizing as they come up – both in student lives and during the course of the unit work. The anchor chart reminds our students to keep thinking about contexts and purposes of summarization.

Summaries are crucial in any situation in which you are characterizing a knowledge set or participating in a disagreement, as all inquiry units require students to do. In all of our units, we often have students summarize scenes and episodes and articles and primary documents that they read as part of the inquiry. The important thing is that using any text - or groups of texts – to pursue inquiry provides a reason to placehold major ideas through summary, communicate these, and continue to hone and improve the summaries for understanding and use.

We like to continue composing to plan by asking students to consider what we need to learn about to be informed voters in an upcoming election as this inquiry rewards reading and writing summaries and also fosters civic engagement. In fact, through the rest of this chapter, we'll focus on a short unit devoted to the essential question: What do we need to know to be an informed voter? Once students are introduced to the inquiry, they will begin developing procedural knowledge of substance and generating data for their culminating project of composing voter guides that were distributed in the community, as well as on-line versions including permanent information about voting and being an informed citizen, and information specific to the upcoming election.

The important point is that students need to know up front how summaries will be important to pursuing the inquiry and involved in producing culminating projects. It's also important to involve students in making their own spontaneous use of summaries for their own purposes, and in naming its use at that point.

Inquiry Unit Idea: What do we need to know to be informed voters?

We've done various versions of this unit: What do we need to know about X to be an informed citizen, team member, basketball fan, reader of statistics, environmental steward, et al. Any of these also work as prompts for getting kids to summarize.

We began by asking students to find and bring in various manuals and guides like car manuals and video game manuals, guides to vacation planning and the like. We studied these in small groups and identified the specific and general purposes of such guides, the shared elements of all manuals and guides, etc.

We then searched the internet to find different voter's guides and identified the specific elements of voter's guides.

We then began to do some research specific to the upcoming election (which involved an interview with a local political beat reporter and contacts to our legislators, as well as newspaper and on-line reading, much of it in the thought pattern of summary), the students came up with a general list of permanent and election-specific topics to learn about: candidates and their positions, as well as referenda topics and their implications. We then decomposed the task at hand by dividing up the topics and planning how we would find further information, validate it, and present it in our voter's guide.

Elements for our voter's guide:

Introduction:

The Foothills Area Voter Guide Project is designed by Boise students dedicated to the ideal that all people should have access to nonpartisan information about the why, how and what of voting and other forms of civic involvement. We publish some sections of the *Foothills Area Voter Guide* in the six languages that are represented in our class. We offer this as a quick guide to elected offices and federal, state and local elections, propositions, referenda, initiatives, political parties and voting issues.

Permanent information:

Idaho political parties, histories, positions

Job Description, responsibilities, terms of each office

How to register to vote

Voting stations

Absentee ballots

Informational websites

Who currently represents us?

How to discuss issues with others.

How to join political interest groups.

Glossary.

Specific information for this election:

Date of the election

Profiles and platforms for major candidates:

Federal: President, Senator, Representative

State: Governor, Lieutenant Governor, Secretary of State, Legislators, State Superintendent, Judges, et al

Local: Mayor, City Council, et al

Referenda descriptions: what's at stake, pro/con positions, citizen groups supporting each position.

Composing to Practice: Developing Knowledge of Form and Substance

We hope that we've established that summarizing is both crucially important and complex. And because of that complexity, it's essential to make sure that students get enough practice. We provide practice through a gradual release of responsibility that moves from teacher modeling, to mentoring (teacher helping students, students helping students in small groups, then individual student to student assistance – I do it for you, I do it with you, You do it with each other) to monitoring

(where each student is independent and the teacher can monitor their level of mastery; You do it alone). For students to achieve expertise, teachers must repeatedly model summarizing with different kinds of text structures and content within the context of the inquiry unit, and then must mentor student summarizing over time, giving students ample assistance, time and opportunities to practice, practice, practice.

We've mentioned already how summaries involve getting to the main idea and then being able to express this concisely. This is an essential element of reading comprehension, and when students can summarize, they have proven their comprehension. Reading "to mine texts" (Greene, 1991) for information is also a major move for composers, and a major way we exercise procedural knowledge of substance.

In his think-aloud book (Wilhelm, 2001/2012, pp. 128ff.), Jeff provides a fully articulated heuristic useful in guiding students to "reading" for main idea, self-monitoring for correctness, and then using what they have learned to compose a summary. His heuristic encompasses the macro rules for summary so provides practice in all the crux moves for summarizing.

DESIGNER: BEGIN BOX

READING FOR MAIN IDEA HEURISTIC

I. IDENTIFY THE TOPIC (OR GENERAL SUBJECT) OF THE PIECE.

To find clues to topic:

- a) Look at the title
- b) Look at the first and last paragraph: the topic is often named and always implied
- c) Ask yourself: what is discussed through the whole selection? What general subject spreads across the whole text?
- d) Look at captions, pictures, words in bold, headings, and so forth for clues to topic. What do all of these have in common? What do they all have something to do with?
- e) Remind yourself: The topic must connect to all the major details and events from the selection.
Caution: not every detail has something to do with the topic. The topic is the common element or connection amongst the major details.
- f) What do all the major details have in common?

CHECK YOURSELF: It's not a true topic if . . .

- a) It's too general or too big (The topic statement suggests or could include many ideas not stated in the text).
- b) It's off the mark, totally missing the point
- c) It only captures one detail, rather than all of the key details
- d) It captures only some of the details, for example, maybe you didn't think about the ending, or the climax, or a shift or major change of some kind.

QUESTIONS to ask yourself:

- a) Does the topic I've identified give an accurate picture of what the whole selection is about?
- b) Was I as specific as possible in accommodating all of the key details?
- c) After naming the topic, can I now fairly specifically picture in my mind what happened or was communicated in the text? Or might I picture something radically different that also fits my topic statement? If so, how can I revise my topic statement to correct this problem?

II. IDENTIFY THE KEY DETAILS/EVENTS AND THE PATTERN AND TRAJECTORY OF THESE CREATE BY WORKING TOGETHER.

Authors often plant important ideas in rules of notice, e.g.

- a) Details that reflect or refer to the title
- b) Details at the beginning of the text/ or front and center of the picture
- c) Details at the end
- d) Surprises, revelations, whenever your expectations are not met
- e) Repetition – especially repeated details, terms or ideas
- f) Lots of attention given to a detail, for instance, long explanation or description
- g) Subheads, bold, italics
- h) Single sentence paragraphs
- i) Changes in character, tone, mood, setting, plot twists
- j) A question near the beginning or the end

Text structure organizes the overall text into a particular kind of narrative (chronological order), argument (logical presentation of reasoning), or informational/explanatory (paradigmatic organization). This structure patterns the text in flexible yet predictable ways. The structure is usually revealed near the beginning, and then throughout the text with the use of transitions and transitional devices that show how ideas are related to each other.

CHECK YOURSELF: It's not a key detail if . . .

- a) It's interesting, but it doesn't develop the topic/lead to the central focus
- b) It reminds you of something personally important, but if you were to remove it from the piece, the work would not lose any significant meaning or impact
- c) There are no transitions to other ideas or expression of relationship from this idea to another one.

QUESTIONS to Ask Yourself:

- a) Are all the details related to the topic?
- b) How do the key details relate to each other?
- c) What kind of overall text structure is patterning the details?
- d) What pattern do the details make when they are added together?
- e) What point does this overall patterning of ideas add up to and imply?
- f) What can we extrapolate or interpolate from the pattern?

III. IDENTIFY THE MAIN IDEA (the theme or point the author makes about the topic)

- a) The statement of main idea that you identify must make a point about the topic and cover the whole selection
- b) Ask yourself: Is the main idea directly stated? If not, it must be inferred from the pattern and relationship of the key details
- c) Which details help me decide on the main idea? Why are these details important?
- d) The central focus considers how the details relate to one another or lead to one another (what caused or correlated or led or compared to what?)
- e) The main ideas must consider the ending and how the details, character, setting, perspectives, interactions of these and events led to this conclusion.

CHECK YOURSELF: IT'S NOT THE MAIN IDEA IF . . .

- a) It is so literal and specific it doesn't allow the reader to apply the main idea to his own life
- b) It is too general – more like a topic statement than a main idea or point
- c) It is true but misses the point of this text. It wasn't what the author was saying through this combination of these details.
- d) It misses the point
- e) It only fits one detail, event, or part of the story, not the coherent whole
- f) It does not incorporate all the details, but only a few
- g) It doesn't fit the ending or final situation

QUESTIONS TO ASK YOURSELF:

- a) What point do the key details repeat and add up to when taken all together?
- b) Is the main idea or point a statement about the topic?
- c) Is it something useful that can help you to think or act in the world?

Also consider: Do you agree with the statement as applied as a generalization to life and the world? Will you use this idea to undertake action in the world or to think about the world? Why or why not? (MARGIN: All CCSS anchor reading standards, especially 1-3, 5; writing standards 5, 8, 9)

DESIGNER: END BOX

A short version of that heuristic that can guide student summaries of informational text is captured by the acronym **T-D-P-P**: cite the **T**opic (which might be articulated or need to be surmised), the key **D**etails, how the details were **P**atterned, and the **P**oint made about the topic by that patterning of those details. (ED: LESSON IDEA ICONS THROUGHOUT)

As we've noted, however, different kinds of summaries work in different ways. For example, for narrative, a useful frame for summarizing is SWBS or "**Somebody Wanted... But... So**" which captures the characters, initiating situation, complications and consequences of a simple narrative. Arguments, on the other hand, can be summarized using the **CDR** or Claim, Data, Reasoning heuristic (See Smith, Wilhelm & Fredricksen, 2012 for more on the structure of arguments). (MARGIN: All three of these cover the basic elements of informational, narrative, and argument text as described by the CCSS)

Once we've worked with students on summarizing, in Friere's terms, "the word," we move on to work with them on summarizing "the world." We've done so in a variety of activities.

One-minute life summary. Recently, there was worldwide contest to become caretaker of a Barrier Reef island off the coast of Australia. It was called "The World's Greatest Job" and the single criterion for employment was that you had to have led an interesting life. The job application was a video-taped one minute life summary. Students can find and watch examples of these on-line, rank them based on what was included and excluded, and then film their own. The same can later be done in-role as characters, historical figures or authors from readings pursued during the inquiry. We've also done a variation of this called "What's most important about me" which can be shaped into a poem or picture book. This helps students practice the macro rules, do identity work - and parents and student "keepers" (adult mentors) enjoy reading these. This can be refocused to summarize what is most important about a candidate or referendum. (MARGIN: CCSS emphasis on multi-modality)

Sum It Up: In this technique we asked students to imagine they were placing a classified ad or sending a telegram, where every letter or word they use has a set price. For instance, each word costs 10 cents and that they have a \$2 limit. The amounts and lengths can be adjusted depending on the text and student familiarity with summarizing. We've set this up as a learning station, with articles regarding the inquiry in a folder. Students go to this station to practice summaries of short texts whenever they have time or when other students are still working. Like the previous techniques, this one is great for helping students eliminate trivial or redundant material. (Idea adapted from TeacherVision: <http://www.teachervision.fen.com/skill-builder/reading-comprehension/48785.html#ixzz1WcxaP2Sk>, retrieved September 1, 2011)

The collapsing of ideas can also be used as students create tweets, Facebook updates and the like where minimal space is allowed to send a message regarding the unit inquiry. We usually have students create summaries of their own, but later ask them to do it in role as an author or character, e.g. Obama tweeting about the importance of his health care proposals and their potential effect on the economy (see Wilhelm, 2003/2012 for other ideas about summarizing in role). We found this a great technique in our informed voter inquiry. All of this provides practice in macrorules like substituting, integrating, etc.

Framing is a useful kind of structured writing that provides students with a skeleton outline on which to build a paragraph length summary in a particular text structure. As our students prepared to put together their voter guides, they had to consider what text structures to use to provide their summaries. Should they summarize the positions of Obama and Romney separately, or compare and contrast their views in one summary? Should they do a problem/solution structure for the water safety referendum, or a pro/con or for and against or a definition of "water safety" and an explanation of how the referendum

would achieve this safety (or not)? The framing exercise forces students to write within the structure and helps them internalize particular moves and transitions that they can use more flexibly and creatively later. It guarantees a level of safety and relative success. It is particularly helpful and safe for struggling students.

We start by asking students to closely read a text and circle a maximum of ten key concept and transitional words to figure out text meaning and structure. Once they know the structure, they can summarize using the following **sentence frames**:

DESIGNER: BEGIN BOX

Use transition words and overall structural cues to choose the appropriate frame to correlate with the category of main idea for the paragraph. Then plug the most appropriate keywords into the frame so it reads as a comprehensible sentence that is a summary of the paragraph.

If the main structure of the text to be summarized is description/definition, use a frame like "A _____ is a kind of _____ that _____."

If the organizations of the text is compare/contrast, use the frame "X and Y are similar in that they both _____, but X _____, while Y _____."

If the text structure of the text is sequence use the frame " _____ begins with _____, continues with _____ and ends with _____."

If the main structure of the text is cause/effect, use the frame " _____ happens because _____ and _____ (and _____) in the context of _____."

If the superstructure of the text is problem/solution, use the frame " _____ wanted _____ but _____ so _____."

adapted from eHow: http://www.ehow.com/how_4579583_summarize-passage-onesentence-summary-frames.html#ixzz1WiPKpge5

DESIGNER: END BOX

Jeff's students next worked in small groups to produce several on-demand summaries for a class time-line (MARGIN: LESSON IDEA) outlining the history of civil rights with the purpose of seeing how elections might have affected this struggle (see Wilhelm, 2004/2012 for a full description of this project). There were summaries of various historical contexts (The Civil War; Reconstruction; the Depression) and elections on one level. Below this each group of students created several individual summaries which were applied to creating a specific strand on the timeline. For example, Jeff asked one learning group of four boys to provide summaries of Jim Crow laws, and of the influence of *Uncle Tom's Cabin*. They also had to provide an illustration complementing each summary, and place these on the timeline. (MARGIN: CCSS emphasis on multimodality)

On their own, this group chose to create a timeline strand of civil rights in sports, and they composed several summaries about the Negro Leagues, breaking the color barrier in baseball, etc. Afterwards, students studied to the timeline to

see how elections and the political climate in the country might have affected the timeline of civil rights. This activity gave students a sense of electoral history in the United States and how elections have affected the development of civil rights.

Following this, students worked more independently to create a timeline for the past year of the rise and fall of various candidates for president, and various ideas and proposals for economic stimulus, for civil rights issues, for jobs creation, etc. This involved short research and summaries of different events and positions and provided the context and background against which we would be creating our voter guides, and also foregrounded the purposes of the guides in the present context.

(Timelines can work across the curriculum: in science for the evolution of various theories of evolution, Lamarckian to Darwinian; in music for the evolution of musical styles or the development of instruments, etc.)

We then turned our attention to the current election. Students read candidate statements, party platforms and the like. After doing so, they summarized using the TDPP format. They likewise watched debates, read interviews and position papers from various groups, and summarized these using the CDR frame.

Students also studied political advertisements, summarizing the point of each ad, and then summarizing how the ad created its general impression through a combination of images, music, print words and spoken words. (They had great fun with some of Herman Cain's goofy ads.) They then turned their attention to summarizing political speeches. Some students created their own ads for candidates or referenda they supported.

News tickers. As students learned new information for their part of the voter's guide, we challenged them to write one-sentence news tickers which they would post in the classroom. This provided practice in summarizing but also helped them phrase what they would need to say to update their section of the guide.

Shrinklits. As we moved to summarizing our reading about the upcoming electoral issues, we used a favorite technique based on the classic text *Shrinklits* which hilariously summarizes canonical literature into very short poems. The book begins with a poetic summary of the *Elements of Style*, by Strunk and White, to demonstrate why texts should be shrunk to the minimal length.

"Omit needless words!"

said Strunk to White.

"You're right!"

said White.

"That's nice

Advice.

But Strunk,

You're drunk

With words!

Two-thirds

Of those

You chose

For that

Fiat

Would fill

The bill!" . . .

During the unit, groups read either Joan Bauer's YA novel *Hope was Here* or *Election* by Tom Perrotta which involve various political issues and intrigue. Students enjoyed writing Shrinklit versions of the bookx. They also enjoyed writing Shrinklit versions of political platforms and debates. (There are many hilarious student examples of shrinklit versions of classic literature.)

Movie clubs. We encouraged students to form weekend movie clubs and to watch classic movies related to elections: *All the President's Men*, *The Manchurian Candidate*, *Dave*, *The Adjustment Bureau*, *The American President*, *Mr. Smith Goes to Washington*, *All the King's Men*, *Choose Connor Strand*, and even *Napoleon Dynamite* (Vote for Pedro!). If they summarized the movies, they earned extra credit. (See Wilhelm, 2004/2012).

Collapsing lists. Another quick practice technique that develops the substitution strategy (Brown & Day, 1983) is to collapse long lists of details into general categories (this is a move towards definition, compare/contrast, and classification) - you can provide the lists (if the lists are related to the inquiry they can do double duty) or use student found or generated lists.

The feature section of the newspaper and most magazines are filled with lists and articles including lists: Best Summer Reads, Ten Top Autumn Hikes, Reasons to Be Thankful, Hottest New Video Games, etc. etc. You can cut off the headline or just provide the list to students and ask them to come up with the headline or general topic.

Or you can just make up a list like: "brushing teeth, mouthwash, putting on pajamas, saying goodnight to parents" could be collapsed into "getting ready for bed".

Create headlines and captions. This one is also good for the substitution strategy. Take articles from the newspaper, and cut off their headlines. Have students practice writing headlines for stories or match the severed headlines to the "headless" stories. Do the same for photos and graphics. Remove the captions and have students match them. Then have them write their own short as possible captions to photographs and graphics. In the context of our unit, we used articles, photos and political cartoons for the upcoming election.

Slogans. Our students enjoyed writing slogans for particular candidates or referenda. After researching and ranking various political slogans they came up with these rules: drill the candidate's or referendum's name, use strong words, use poetic words and devices (rhymes, alliteration, assonance, onomatopoeia, etc.), catchy, direct and not trumped up, smooth, easily repeatable. They then tried their hand at creating slogans that would summarize the substance of various positions.

Bumper stickers. Some students composed bumper stickers that summarized a platform or position. We then reviewed what had been summarized, and what had been left out of these platforms or positions.

Talking points. In role as campaign managers, students created talking point guides for public meetings regarding various issues.

Jigsaw for cumulative summaries is a cooperative learning strategy that helps students work collaboratively to divide a task into manageable chunks. Since we were creating voter guides and every student and each learning group was making different contributions, this was a strategy we used to share what we'd been working on prior to putting everything together into a final guide.

The technique can be used in any content area and can assist students with learning complicated material. The teacher presents the topic to be learned and divides students into small groups. Each student is responsible for reading and summarizing the information for a subtopic. The student will present the summary of the information to a small learning group along with a justification of its importance. Each student's part is essential just like all pieces of a jigsaw puzzle are necessary for the complete picture. Each student gets to become a teacher and the workload is divided and conquered. This work was helpful as students decided how to produce their guide, and how to make decisions like which section should go first, what the next section should be, etc. all of which was kind of like putting a jigsaw puzzle together!

Multimodal summary. Summaries can be expressed through dramatic or visual tableaux, with or without words or captions. Students often enjoy composing summary through of drama/action strategies like a character on the hotseat summarizing events, through a forum drama where the summarizer in role as a newscaster is helped by a focus group in the forum, and through other forms of visual or musical art, like visual timelines, posters, flow charts, songs, parodies or MTV videos (see Wilhelm, 2003/2012; 2004/ 2012). (MARGIN: CCSS emphasis on multimodality)

Again, it is very important that students reflect on how the “moves” in these “frames” reflect general principles of summarizing and understanding so that the frames move students towards thinking heuristically, not merely with the limited frame and therefore algorithmically. Do this by getting them to articulate general purposes, principles and moves and putting these on an anchor chart.

Composing to Draft: Putting it all together

By the time it came to draft their voter guide summaries on the particular candidates or issues to which they were assigned, most of the work necessary to do so had already been done. The students had previously accessed and generated the material to write about and had repeatedly practiced shaping it. So the phases of composing to draft and finalize required less time.

We have found the following summary of research on summarization useful for considering how to help students through their practicing and their drafting. We've also found it useful to share with colleagues, particularly from other disciplines, to help them think about the usefulness of summarization in their content area teaching, as well as how to use summarization instructionally and how to help students practice and draft summaries.

Figure: Research Review on Summarization

- Summarization is very complex and requires repeated practice.
- Summarization, as an organizational study strategy, promotes deep processing. □

- As students identify links to prior knowledge and personal connections to main ideas in text, they enhance comprehension and retention.
- Summarizing is a skill at which most adults must be proficient to be successful in work and in life.
- Summarizing allows both students and teachers to monitor comprehension of material.
- Understanding context, purpose, and general discourse patterns/text structures determines case-specific inclusion and deletion rules: what is found to be significant and therefore put into a summary (This foregrounds the importance of knowledge of purpose and context, as well understanding text structure as pre-requisites to writing summaries.)
- Understanding text properties and thought patterns enhances summarization
- Summarizing conversely helps students understand the explicit and implicit organizational structures of texts, data, experiences, and lessons.
- Summarizing effectively includes logical and categorical connections among the details, which leads to the expression of an overall impression or point.
- Understanding patterns among details not only facilitates memory of the information but allow for its apprehension as an integrative whole with recognition of the relationships between parts.
- Summarizing is improved by providing direct instruction about cues to text-based importance: particularly cues for noticing what is important (see main idea heuristic above), knowledge of text structures, and inference-making capacity.
- Summarizing throughout a longer text, data set, or experience is ongoing, gradual and cumulative (i.e. good readers are always summarizing and bringing meaning forward throughout a text).
- Summarizing and reviewing are processes that integrate and reinforce the learning of major points.
(Brophy & Good, 1986; Brown & Day, 1983; Kintsch & Van Dijk, 1978, Van Dijk, et al, 1977a, 1977b, 1979, 1980, 1983).

As students worked on their first drafts, we helped them to shape that draft with the following techniques.

Chunking. Chunking is an excellent technique for making a writing task less daunting, decomposing it into steps and sections. An outline, issue tree or branch diagram is composed (see chapter 11). Students choose one section and write that chunk. Then they choose another section. Eventually these sections can be stitched together with transitions. This unit was a perfect place to introduce chunking, since different students were summarizing various ideas – or chunks - and then putting them together into a guide. In following units, it's easy to help students see how a prompt or task requires different elements and chunks, and to decide which ones they want to do first, second, etc. In fact, as professional writers, this is how we work. For this book, Jeff wrote all the introductions to the chapters first, then the conclusions, then the descriptions of each text type, etc. This kind of chunking made the task of writing a book much more manageable and allowed him to see his progress, working on one element at a time. It also allowed him to use what he was learning about writing introductions for one topic in the book and immediately use that to write the next introduction while it was fresh in his mind.

Circle and Cross outs. Reading over their notes and then their drafts, students were asked to circle the main details from their readings that they wanted to include in their summary and were asked how they decided on this (to articulate principles and a heuristic for inclusion). Likewise, they were asked to cross out that which should be excluded and cite principles behind those judgments (to cite the heuristic principles of deletion or integration). Transitions were underlined or highlighted and

students asked what these indicate about text structure and therefore what to include and how to foreground the categorical or logical connections between details.

If there was still too much material for a summary, students were asked to double circle repeated words or ideas, or get the main ideas down to a certain number like three by crossing out previous circlings (which assists with generalization, integration, and topic finding or identification macro-strategies). The students then used this technique as they read and responded to each other's summaries for our voter's guide.

Structured Controversy and Forums. When sections of our voter's guide had been drafted out, we had groups share the positions of their candidate or the positions of one side of a referendum issue. Other groups listened to the arguments then presented a summary back to the team so all could see if the important points were clearly portrayed and understood. We also used our drafts as the basis of a newscast of key points about the most important issues facing voters that we video-taped (MARGIN: CCSS multimodal literacy, technology use, speaking and listening standards). This helped us rehearse and share our summaries for the guide, and to get feedback from others in a supportive drama context.

Computer command sheet: Keep, Move, Change, Add, Delete. This is a great idea we have used for years (see Smith and Wilhelm, 2007) to help students provide peer revision advice for any kind of composition. The peer advisor/s provide a "keep" command and explanation- this starts peer revising with justified praise. Then they must provide four more commands for adding, deleting, changing, or moving material (e.g. to more closely mirror the text structure of the original or to more closely address voter concerns) in the composition – this advice must be specific and explained. This technique is particularly good for summarization and is excellent for promoting specific and helpful peer feedback.

When students compose their final drafts, they must accept or reject each piece of advice they are given on each of the computer command sheets they received (typically 3 or 4 from the other members of their learning group and an adult keeper), and explain why they rejected any advice that they rejected. This insures that the students get specific advice, that authors read and attend to the advice they are given, and that they must justify the rejection of advice.

Other kinds of response sheets and the application of previously mentioned frames and activities to the draft can help out with drafting and revising the piece.

(ED:—we could provide an exhibit)

Multiple versions/debates. Because summaries are so short, students can compose multiple variations of a summary and have their peer group rank them. Or each member of the peer group can revise a writer's summary in some way, and then compare this to the original, discussing costs and benefits of each draft. Of course, this is just to explore options; the ultimate decision about substantive revising is up to the writer herself.

Composing to Finalize: Sharing and Publishing the Final Draft

As we've discussed, when students are composing the final draft for sharing and publication, they should achieve deep declarative knowledge of both substance and of form at both the global (entire text) and the local (sentence) levels – i.e. they should be able to describe how the overall text is structured to convey meaning, and how the inclusion of particular words, and

the construction of phrases and sentences at the local level also works towards this end. In the case of our unit, students also needed to justify how their contribution fit the overall voter's guide and how it would help lead to informed voting.

This phase of final drafting is therefore a time when you can do language study and focus on specific correction areas. Particular text structures reward particular kinds of sentence constructions, e.g. listing typically requires knowing how to use commas to denote ideas in a series, or how to use a colon to introduce a series in a list. These techniques are also useful in summary since many related ideas can be conveyed succinctly.

Since the overall text structure determines what kinds of sentences will be useful in a text, we will also follow up on that in subsequent chapters.

Teaching students how to proofread (Smith and Wilhelm, 2007) is also rewarding during this phase. Knowing what to proofread for is determined by the overall text structure and the kinds of sentences likely found there. For instance, students writing lists and summaries often use run-on sentences or fragments, so this is good time to teach how to proofread for such errors (see Smith and Wilhelm, 2007 for specifics on proofreading for fragments and run-ons).

Another problem we have noticed in student summaries is that of faulty pronoun reference that interferes with overall coherence and reader comprehension.

The two most common pronoun reference problems we see in student summaries involve implied and ambiguous pronoun references.

Usually the implied reference error occurs when the antecedent of the pronoun is not actually expressed but must be inferred from the general meaning of the sentence or summary. This particular problem arises with the use of the pronouns *it*, *which*, *this*, *that*, and *these* to refer to an entire preceding phrase or clause rather than to a definite noun. Our students love to make this mistake! Truth be told, it was also a problem Jeff particularly suffers from – after all, *he* knows what he is referring to and it's hard to imagine an audience who might not. Correcting these implied reference errors can be accomplished with one of two major moves: by summing up the idea of the preceding phrase or clause with a specific noun or by rewriting the entire sentence to omit the pronoun or to give it a clear antecedent.

Here are some examples:

WEAK USE OF *IT*: Obama campaigned all week in Ohio and enjoyed it very much.

BETTER: (omit pronoun) Obama campaigned all week in Ohio and enjoyed *this experience in the Buckeye state* very much.

WEAK USE OF *WHICH*: Romney was in a state of shock from all the attack ads, *which* was obvious by the vacant expression in his eyes.

BETTER: (provide an antecedent) Romney was in a state of shock from all the attack ads, *a consequence which* was obvious by the vacant expression in his eyes.

ALSO CLEAR: That Romney was in a state of shock from the attack ads was evident by the vacant expression in his eyes.

WEAK USE OF *THIS*: Herman Cain developed a consuming passion for influence wielding. *This* brought about his downfall.

BETTER: Herman Cain developed a consuming passion and penchant for influence wielding. *This iniquitous propensity* brought about his downfall.

Ambiguous reference (sometimes called double reference) occurs when there are two possible antecedents for a single pronoun. The result, of course, is a lack of coherence and clarity. An ambiguous pronoun reference can be avoided or corrected in several ways: *restate the antecedent*; *use a synonym* for the antecedent; *or rewrite the sentence to clarify*. We ask students to find such errors, and to create different ways of fixing them, and then ranking the fixes, as modeled below.

AMBIGUOUS: Jeff asked Obama to invite *his wife* to the political rally at his house. (Is it Jeff's wife or Obama's wife that Jeff wants to be asked?)

BETTER: Jeff asked Michelle Obama to the political rally at his house.

BEST: Obama and his wife were invited to the political rally at Jeff's house.

AMBIGUOUS: Obama told Jeff that he was a political guru of genius.

BETTER: Obama told Jeff that Jeff was a political guru of genius.

BEST: Obama considered Jeff a political guru of genius and told Jeff so in front of a national television audience.

PROOFREADING CUE: Look for *it, which, this, that, and these* and ask if the pronoun refers to a preceding phrase or clause, or if it could refer to more than one definite noun. If so, fix it!

After such an activity, students are able to proofread for such problems – what kind of problems? - uh, I mean for pronoun reference problems! - in their own and others' papers. It's important to get the help of peer editors since the major cause of pronoun reference problems is that the author knows what she is referring to, even though this may not be clear to the reader.

Composing to Transfer: Getting After Principles of Understanding and Use

As we've mentioned, the five kinds of composing often overlap. Many of the composing to practice activities above also serve as a kind of composing to transfer -if students reflect on general principles of summarizing particular text types, such as the macro rules and how they help us know what to include, collapse and exclude– always related to purpose and context, and to a sense of text structure.

When composing to transfer it is important to get students to articulate heuristics, i.e. to articulate general purposes, principles and moves; situations in which to use summarizing and these principles in the future, in the school and home. These heuristics are transferable and are a rehearsal for future summarizing.

Any composing that constitutes a formative assessment would also count. Any time students produce or evaluate a summary, teachers have a formative assessment that can be used to identify what students have mastered and still need work on. Here are three formal formative assessments we used throughout our unit that provided a "two-fer" since they all require summarizing:

One-Sentence Stickie Summaries. Students explain an idea or concept from a reading, presentation, small group discussion, video, etc. The summary can be subjective or objective and can be used as an “exit” ticket for formative assessment. On the opposite side of the stickie students cite a principle or justification for something they included or excluded. Such summaries could be the result of consensus from a small-group discussion.

3-2-1 is a technique where students can cite the three most important things they learned (about the topic, or about summarizing), 2 things that were surprising or interesting, and 1 question that they still have.

Concentric circles. (See exhibit) We like to use the concentric circle chart to help students articulate declarative knowledge they are consolidating, whether about substance or form. After the first week or section of a unit, students fill in the center circle. After the second week or another natural section of the unit, students fill in the next circle, showing how they have learned something new, or have a more nuanced understanding of concepts or processes. This continues throughout the unit and students have a visible sign of their progress.

Conclusion

As we have explained, the text structures we explore throughout this book form a kind of hierarchy, with one kind of text structure, like naming and listing, being prerequisite to another, like summary. You may have noticed how naming and listing were thought patterns that both implicitly and explicitly informed the reading and composing of summaries. We’ll turn next to how summaries, being about key details, provide the foundation for developing the specificity that is the essence of composing description and process description.

Chapter 8

Description and Process Description/Explanation:

Getting Oriented and Directed

Our lives are filled with descriptions. Just today, Jeff's daughter Jazzy called to describe an artwork she is creating, and to describe her process of registering for classes and moving into her dorm. His daughter Fiona, a singer songwriter, emailed him a process description of how she was approaching the composing of a new song (she's really good! Check out her music and videos at <http://www.facebook.com/pages/Fiona-Luray/123635197720397>). His friend Frank Dehoney described some heirloom winter beets he is sending Jeff, along with directions for planting and cultivating them.

Michael and his administrative assistant Gwen Miller regularly exchange cooking stories. Their post-Thanksgiving discussion was full of descriptions, both of how their new dishes tasted and how they went about making them. Michael's wife Karen has a birthday coming up. She wants a purse and provided a very precise description so that Michael wouldn't mess up when he bought one.

Jim just had a bookcase delivered to his office. Because the bookcase did not include the hardware necessary to installing shelves, he had to provide a very precise description of the bookshelf so that the English department assistant would know what hardware to order. And then he had to listen to a very detailed process description of how to install the hardware.

Description also fills the many blogs Jim reads. Today at lunch, for instance, Jim read about the Chicago Cubs, (bleedcubbieblue.com) which included a description of the Cubs' projected pay roll for next season, a description of the qualities the Cubs' GM is looking for in a new manager, and a description of the skills the GM will seek in potential free agents he signs. In another blog, this one on cooking, (extrapoundcake.com) Jim read a description of a sweet potato risotto which includes "A skillet full of sautéed sweet potatoes, onion and ginger mixed with soft Arborio rice, dry Riesling wine and a few big dollops of rich mascarpone cheese topped with toasted walnuts for a little crunch" and a description of Riesling as a "sweet wine that might remind you of pears or apricots."

Why Descriptions and Process Descriptions Matter

Descriptions and Process Descriptions not only fill our daily lives, they are also essential to knowledge making and understanding in all the disciplines. Description, generally construed, is a text that accurately renders the resonant properties of things. Discourse theorists point out that a description can be either objective (concrete and factual) or subjective (personal and involving opinions and feelings). The type that an author creates is based on her purpose and by the kind of response that she wants to elicit from an audience.

Descriptions are more sensory and elaborated than lists and summaries. They go beyond the key details to provide some sense of how those details were experienced. John Updike's oft-anthologized essay "Central Park" is a great example of transforming what could have been merely a list of sensations into a fully realized description of what he experienced on his walk through Central Park on the first warm day after winter.

The basicness of description as a text is highlighted in Berke's (2007) *Twenty Questions for the Writer* in that 6 of her 20 questions arguably lead to a form of description: How can X be described? What kind of person is X (character sketch)? What is my memory of X? What are the facts about X (descriptive factual report)? What is the present status of X (descriptive status report)? What is my personal response to X (description, but if the process of arriving at this interpretation is described, this would become an explanation or process description)?

Four more, it seems to us, lead to some form of process descriptions: How did X happen? How is X made or done? How should X be made or done? How should X be interpreted? (These last two, depending, could also be construed as arguments about a process).

Description is central not only to the work of the English language arts but also to work across disciplines. The term **descriptive science**, in fact, is considered to be the basic category of science and refers to sciences "whose emphasis lies in accurate repeatable descriptions such as: X causes A in circumstances B" (Wikipedia, retrieved 9/6/2011). David A. Grimaldi and Michael S. Engel (2007) suggest that descriptive sciences are basic and prerequisite to all understanding, problem-solving, design and all other forms of knowledge making. "Descriptive" can be applied to "the array of classical -ologies and -omies: anatomy, archaeology, astronomy, embryology, morphology, paleontology, taxonomy, botany, cartography, stratigraphy, and the various disciplines of zoology, to name a few."

Grimaldi and Engel (2007) maintain further that all knowledge in science, math, history, the arts and the social sciences is based and built on descriptive knowledge. Along these same lines, the oceanographer Daniela Pace (2010, retrieved from her blog 9/19/2011) argues that applied science depends upon prediction and that prediction depends on description. In other words, scientists can only extrapolate and design interventions and solutions based on thick descriptions. We describe, then we come to understand the relationships in the data, then we can infer the meaning of patterns which in turn allows us to interpolate and extrapolate data points. The theories that can then develop are what allow us to propose, design and implement solutions. (MARGIN: Cf. CCSS Reading Anchor Standards 1-3)

Declarative knowledge (a term we've been making extensive use of) is also known in cognitive science as descriptive knowledge or propositional knowledge. This is the kind of knowledge that is, by its very nature, expressed in declarative sentences or indicative propositions. This distinguishes descriptive knowledge from what is commonly known as "know-how", or procedural knowledge (the knowledge of how, and especially how best, to perform some task – though describing this is the domain of process description).

Description, the first thought pattern that we will explore in this chapter, is about relaying declarative knowledge so it can be grasped; process description, the second thought pattern featured here, is about purveying procedural knowledge in an explanatory fashion so this can be replicated.

Unit Idea: What is the Best Possible School?

In this chapter, we'll refer to a unit that Jeff's daughter Jasmine participated in as a third grader, her teacher being involved in Jeff's inquiry across the curriculum project. The essential question for this unit was: "What is the best possible

school?” This question foregrounds description. The major subquestion was: “How can we *become* the best possible school?” which obviously rewards process description. Jazzy was involved in two research groups, one that explored “how can we improve our cafeteria?” and another that explored “how can we improve our playground?” Other groups studied how to improve traffic patterns inside and outside the school, how to improve the library, extracurricular offerings and the like. Each group wrote many descriptions of a best school, of their school, and of processes for improving the school in a particular arena.

Composing to Plan for Description

We typically like to employ two primary strategies for helping students understand why the text structure we are teaching is important: casting them as ethnographic researchers who examine the use of the text structure in their own lives -- and then creating an instructional context that rewards the use of that structure in school. So we begin by asking students to monitor their conversations and communications for a day, logging every time they describe something or hear something described -- both inside of school and outside it, along with the context and purpose of such describing. (MARGIN: CCSS anchor standards for writing 1-4)

And then we make sure that the unit we’re working on rewards description. That’s easy to do. Descriptions are a text structure that can operate in service of any kind of inquiry unit. Sometimes, however, we work with our students on inquiry units that particularly reward description (How does place inform behavior? How does culture shape our identity?) and on culminating projects that involve lots of description, like an ethnography of our school (for example, a cultural journalism project where we compare descriptions of the culture of our school to that of Maycomb County as portrayed in *To Kill a Mockingbird*). (MARGIN: CCSS anchor standards for writing 2, 7-9).

Here are some other units where we have extensively used reading and writing of descriptions: What is a hero? What is right action? What is courage? Such units not only obviously foreground definition but require it. Likewise “Who was the most influential American? our greatest leader? the best movie of all time? the most innovative musical group, the most powerful chemical, etc. all foreground comparison/contrast but also require description.

Composing to Practice for Description

We begin composing to practice by establishing criteria for effective descriptions. Once students have a clear sense of purpose and a context of use, they can begin planning for their particular descriptive piece. We often like to do this with models.

One way to do so is to provide students with three to five pieces of students’ descriptive writing, ranging in quality. If you collect and keep student work, use some of these. If you do not collect student work, you can always get examples on-line or compose various examples of your own. We like to use three to five quite good examples that differ in various ways, so that students will see various models of success. In other words, the texts we choose might vary in quality but not so obviously that ranking them would be easy.

Provide the examples to small groups of students. Ask them to rank the quality of the examples from best to worst, first by working on their own, and then in a small learning group. Their job is not just to rank the samples, but even more importantly, to know why they ranked them in this way. What, specifically, makes the best one the best? Why is the second best pretty good,

but not quite so good as the best one? As students do this, they will be articulating and describing critical standards that can be put on a **class anchor chart** that can guide their own descriptive writing. As a further step, the whole class can examine the piece that most think is the best, and the piece most think is the worst, articulating critical standards for descriptive writing as they do so. (We personally think that articulating and using critical standards is an essential and oft neglected area of learning.)

Ask the students to point out specific techniques this author employed to make his/her writing pack a powerful punch. Ask them to notice and name "power words" that help the reader infer and paint a vivid picture in a reader's mind. (MARGIN: CCSS anchor standard for language #3)

Likewise, ask students to critique the poorer writing, and then to revise it – individually or in a small group – to make it more closely adhere to the critical standards they have articulated. Their efforts can be compared and ranked, revised again, etc. Students can work together to cross out the boring, inert words, and name them as “wimpy words”, replacing them with “power” descriptive words that show instead of tell. Examples could be culled from student writing, or made up. An example: "The river water was ____." This could also be a simile: The river water was as ____ as the ____.

By now, students should be able to create a criteria sheet or rubric in some form, and based on this, a planning sheet for getting and shaping the stuff they will need to write their own description, and should be able to decompose the task and create a plan and schedule for executing it.

Using mentor texts from children’s books and other sources can help students to identify other techniques and moves they might want to develop and use in their own descriptions. Kids can even do an Internet or library “search and find” for powerful descriptions and these can be used in class. Mentor texts for description we’ve liked are *Dr. Dog* by Babette Cole, and *Let's Do Nothing* by Tony Fucile.

Next, we focus attention on helping students meet the articulated criteria. It seems to us that the heart of the matter for composing description revolves around the expression of evocative specificity from a particular perspective. This requires students to be able to use these crux moves: 1) closely observe and record observations, and 2) “see” in a new way, perceiving what is observed with “fresh eyes”, and 3) be able to clearly convey one’s perspective and fresh way of seeing in such a way to create an overall experience and impression for a reader. (MARGIN: CCSS Writing #4)

The poet John Ciardi maintained that whatever is looked at carefully becomes worthy of being looked at carefully. So the question is: how can we help kids to REALLY see things? How can we help them to take off the blinders and typical way of seeing, and notice what we typically do not?

One activity we like is a game where we ask students to journal about five things they think that no one else will notice in this classroom. We ask them to identify these objects or senses or experiences and then to describe them briefly.

We then compare what we have come up with, sometimes with applause and appreciation or even a prize for each item no one else has recorded, or for descriptions that adhere to our class criteria. (MARGIN: CCSS writing standard #7)

Description is about enabling the reader to see, experience and understand what is described, to help them create an informed and complete human response. To do this, the writer must provide enough details -- but only enough detail -- for the reader to infer the whole.

And if writers want to create strong affective responses, they have to do more than accurately render details. The famous Canadian West Coast artist Emily Carr puts it nicely: “We may copy something as faithfully as a camera but unless we bring to our picture something additional – something creative – something of ourselves - our picture does not live” (1972, p. 11).

One way to help students bring something creative to their descriptions is through guided visualization (see Wilhelm, 2004/2012). Ask your students to close their eyes and visualize themselves standing in a particular landscape, starting with something familiar like the football field or cafeteria, though you can quickly move to places further from home like a desert, Antarctica or a rainforest. Prompt students to look around and notice what's above them, at their feet, behind them, on all sides. What's moving? What is in the background? What colors do they see? What small things and large things do they see? What do they hear, smell, feel, taste? What mood are they in and what emotions do they feel? The more details you solicit, the better this visualization technique will work. As students complete this work, they are implicitly building a heuristic for the kinds of things to notice and include in a description.

Ask students to write a description of the place they have imagined. Make sure to remind students to work to meet the criteria for effective descriptions that they themselves have articulated. Coach the students to add "power-packed words" to their descriptions and eliminate boring or inert “wimpy words”. Ask for students to share and work as a group to model adding more magic words and eliminating inert ones. (MARGIN: CCSS language #7)

Another activity/game that focuses students on sensory experience is “The Enjoyment Game.” Jeff and his friend, the poet Paul Corrigan, invented this game on hikes and canoe trips with Jeff’s daughters when they were younger. One of them would describe something they were enjoying noticing. The next person would have to describe something else they were enjoying. There was a premium on descriptions that showed how much you were enjoying seeing, feeling, touching, hearing or tasting something. A variation is to describe something in the surroundings. The next person has to add to that description and so on until all descriptive details for that experience were played out.

Our mentor George Hillocks’ well known observing and writing activities (1995) are also great for enhancing observation and description. For example, in one activity George and his University of Chicago MATs had students describe one of the various shells he had brought in, then give the description to a classmate, asking them to use the description to identify that specific shell.

We have also found it useful to employ “Showing vs. Telling” exercises. One of favorites in Jasmine’s class was to rewrite the school lunch menu so it sounded fabulously delicious, then rewrite the same menu so no one would want to eat it.

Once students have practiced rendering effective details, it’s helpful to have them explore different patterns of organization: spatial (with places or objects), parts of a whole (place or object, subjects with segments), chronological (often with situation or event, or experience of an object or event, memories), super/subordination or order of importance (often with character). Students can read short descriptions using these different patterns and consider why the author chose that particular pattern. Likewise, they can be asked to describe something, and then justify their pattern choice.

Mystery pots can work well to help students infer organization and structural devices. In a mystery pot, you find a short, well-constructed text and mix up the sentences, asking students to reorder the text and identify the textual cues that helped them to do so.

Designer: Begin Box

Reorder the following sentences into the most coherent description. Identify the organizational structure of the paragraph by noting how each sentence is linked to other sentences.

- _____ 1. The kitchen flows into the living area of hardwood floors and modern and colorful Danish furniture.
- _____ 2. 4. Continue through the music room in a counter clockwise fashion and you will find yourself in the kitchen with blue marmoleum floors and energy efficient appliances.
- _____ 3. A full set of floor to ceiling windows allows you to sit there of an evening and enjoy the views of the mountain beyond the deck.
- _____ 4. The grand piano and harpsichord dominate the room.
- _____ 5. When you enter the house through the front door, you will see a music room immediately on your right.

Original

When you enter the house through the front door, you will see a music room immediately on your right. The grand piano and harpsichord dominate the room. Continue through the music room in a counter clockwise fashion and you will find yourself in the kitchen with blue linoleum floors and energy efficient appliances. The kitchen then flows into the living area of hardwood floors and modern and colorful Danish furniture. Here, a full set of floor to ceiling windows allows you to sit of an evening and enjoy the views of the mountain beyond the deck.

Designer: End Box

The organizational structure is spatial, since the reader is directed through space. We can identify the first sentence because of the words “enter” and “front door”. “Grand piano” and “harpsichord” are semantic connections to “music room” so must be next. Then we are guided to visually walk through the room to the kitchen. The kitchen “flows into the living area” which is then described, since this is the only room with furniture, it must be where you would “sit of an evening”.

We ask our students to justify their ordering - and sometimes various orders make sense – but each will have a different effect that can then be explored. Often we have our students circle and draw arrows between words and phrases that connect one sentence to another.

In Jazzy’s class, following this activity the students were asked to write their own short descriptions of places in the school and to then mix up the sentences. If they have provided good navigational devices for a reader, that reader should be able to reconstruct the original text.

As we do this, we create anchor charts of transitions for spatial or object description: above, across, across from, also, before, below, beyond, further, here, in the distance, nearby, next to, over, overhead, on my left/right, opposite to, to the left/right, etc. The chart does not need to be exhaustive to put students in the game and provide them with support for their own reading and composing. (MARGIN: CCSS language standard 3)

Of course, the composing to plan and practice must be focused for specific kinds of description. For instance, for a character sketch – a descriptive blend of physical characteristics, actions, interactions, values – the central issue is usually to make an overall impression or point about the character and to establish a persona. Students can practice doing a character sketch of a stranger; or take the point of view or perspective of a character in a book describing another character or person from that

persona's perspective. Students can focus on creating a sense of personhood based on few well selected, representative details that a reader can use to "figure forth" or can infer from.

It can be fun to have students create a short word sketch that captures character by showing how, as Boswell recommended: to let the reader see him live! Students can also practice citing their own X quality of "Jeffness" or "Jimness" or Michaelness" what is most essential to their personhood; the single quality that sums a person up; what Mary McCarthy calls "The key that turns the lock" (cited by Berke, 67). What are the most "showing" or "salient" (as J.D. Salinger called them) details about a person, from which we can infer much else?

Students can likewise write one sentence paragraphs sketching a person they know well. They can describe and infer character based on a photograph. (See *Fresh Takes*, Smith and Wilhelm, 2009 for more ideas.)

A factual report is another kind of description that is just a dissemination of established and agreed upon information. There is no thesis, and no authorial persona or voice. The factual report supposedly brackets out subjectivity. Such a report is generally assigned by someone up the chain of command who has a need to know. Fact selection is key, as is sharing agreed upon facts versus opinions. Since you can't tell everything, the author needs to choose what and how to present the facts that will fulfill a particular purpose for a particular audience.

Memory descriptions are typically of places, events, or people. One activity we like is the memorable meal description that is great for sensory description. Of course the meal will be described, but the setting and other characters might also be described. (MARGIN: CCSS writing #10)

Composing to Draft a Description

Drafting is the time to think about global issues of structure, and to make use of knowledge about what structure (spatial, sequential, etc.) will assist the reader best. The anchor charts of transitions can also be very helpful during drafting.

What's most important in this stage is to have students use the criteria they developed during the activities we described above as a rubric that can guide their drafting. We challenge our own students to start with substance, and to limit themselves to 3-5 overall criteria. We have found that to use more criteria causes them to lose focus and for our own assistance to students to become diluted.

Here's the criteria sheet that a class of 9th graders came up with, and we think they pretty much covered the most essential elements:

- The composition evokes and sustains a powerful overall impression and effect, and leaves the reader with a strong mental image or model
- Specific, concrete details and sensory words are used effectively throughout.
- An appropriate ordering of the details is skillfully used (spatial, sequential, etc.).
- Appropriate transitional words and phrases are used throughout the writing to keep relationships among elements and ideas clear.
- Sentences with several details correctly use commas (and maybe even semi-colons and colons!) for items in a series.

(MARGIN: This list of criteria covers CCSS Writing Standard a-f.)

We think that it is very important to involve students in articulating and applying their own critical standards both as composers and readers of other works. If we want students to get good at something, then we have to provide them with practice and opportunity to master those skills. We can't think of anything that would supersede the importance of being able to set and apply powerful critical standards.

To that end, Jazzy's 3rd grade class came up with these criteria:

Make sure that you, the author of fantastic description:

Use specific words and sense words that paint a picture and give a feeling to the reader.

Use the right words to link ideas together so the reader can follow the description.

Make a strong overall point to the reader.

(MARGIN: Note the meeting of the CCSS emphasis on purpose, authorial choice and audience consideration).

Final Draft Composing of Description

The final draft is the place to consider adding, deleting or moving specific descriptive words and phrases at the local level. For word choice we often create lists of "banned wimpy words" (nouns: thing; adjectives: good, bad, verbs: said, went, etc.) and brainstorm "power words" to replace these boring old standbys. We often hang the banned words around the classroom with a slash through them, and hang new words around the room for the kids to pull from as they write. We also sometimes have students post "devastating descriptions" from the books they read during silent reading time on the bulletin board or on anchor charts.

Getting feedback is also important when finalizing a draft. As a consequence, we require students to share their descriptive essays with the peers in their learning group and an adult "keeper," a mentor, peer or parent to look over. We tell students to ask their peers and keepers to tell them whether they described their subject matter in a way that made it easy for them to imagine. In Jazzy's class, the students attached the criteria checksheet to their papers and reviewed this with their peers and keeper before the peer or keeper continued to read their paper. This makes it easier for the students authors, peer editors, and keepers to be on the same page and clearly engaged in the same project. It also helps them to communicate which criteria have been met and to brainstorm ways to meet the others. We required the students to ask for constructive feedback, and implement any changes they find necessary. (MARGIN: CCSS Writing 4-6)

Composing to Transfer Knowledge of Description

As usual, the basic forms of composing to transfer are formative assessments, reflective journals, process/task analyses (described below), anchor charts and anything else that brings to articulated consciousness the processes and principles that inform the planning, data collection, forming/drafting, revising and sharing of a particular text structure. The purpose of composing to transfer is to articulate the general purposes, principles and moves of this particular kind of composing; as well as

to name the situations in which this text structure can be used in the future, in school and home, for both personal and disciplinary work.

For the purposes of description, we suggest using a variety of formative assessments throughout the process, and to keep an anchor chart of Rules of Notice for description. What is it you have to notice about an object, place, person, situation/event to accurately describe and understand it? What do you have to notice when you read a description? What can you infer from these details?

In our book, *Fresh Takes on Teaching the Literary Elements* (Smith & Wilhelm, 2009), we provide a thorough list of what might be on such a chart for both people (character, p. 52) and places (setting, p. 96). For example, for character, it would be important to include on the anchor chart such things as first impressions and how these are created, based on specific group memberships, actions, language, thoughts, beliefs, passions and interests, appearance, how others relate to and compare to this character. Changes in character, or surprises need to be especially attended to, as well as the reasons behind surprises or changes in the character.

It's also fun to have students engage in a Photo Find/Painting Find. Students are asked to find a photograph or painting on-line that they find highly descriptive, and then write a short reflective piece identifying the aspects of good description that are met.

Mantle of the Expert Drama activities can also work to help students reflect on the principles and aspects of descriptions. Jasmine's class role-played various characters in Press Conferences, Blue Ribbon Panels, Judges for Prize Descriptions, et al who are tasked with responding to a great description, or ranking descriptions they are provided of a great school, classroom or playground, making sure to name the criteria for their judgments.

A lot of work gets done through such reflection as the same rules of notice apply for writing and reading.

Process Descriptions/Explanations

Process descriptions add the descriptive element of including patterns of procedural meaning (such as logical and often causal connections among the details of a description) so that someone else can re-imagine or replicate the process being described. Specific examples of process descriptions include most explanations, directions, recipes, how-tos, think alouds, process analyses, etc.

The emphasis in this text pattern is on clarity, particularly in expressing relationships between elements and steps. The writer must imagine a reader who is trying to follow the directions or thought process, performing the words in some way, which means the words must be accessible, and expression and transitions must be clear and show relationships of one detail to another. Adequate information must be provided but not too much so as to keep focus and avoid distracting details. The writer must go step by step, following the order of the procedure with words that can lead to thoughts and deeds. This was particularly important in Jasmine's group, as they needed to describe not only the decaying state of the playground, but also the process of replacing it – making this process accessible to their audience of parents.

Process descriptions and analyses are the basis of history, of methodology in math and science and many other subjects. Process descriptions are very important in practical arts and crafts like fine arts, dance, cooking, machining, as well as in sports

and other performance-based endeavors. They are also very important in social sciences and theoretical sciences like economics. There is often an implicit if not explicit cause and effect relationship between steps. This is where the old saying comes from: those who do not understand history are doomed to repeat it. If you don't understand the processes of how things work, the relationship of complex causes and their various effects, then you will not be able to predict and exercise any measure of control over these processes.

Process analysis, in which you not only describe your own process of doing something retrospectively, but also explain the connection between steps and why things work the way they do, is absolutely necessary to understanding, according to current cognitive science. Understanding is “knowing the story behind the story”, knowing *how* things work, and consciously understanding the principles behind *why* things work the way they do. This distinguishes knowing information from possessing and using what can be called “knowledge”. For example, a cook may know the steps of a recipe and be able to follow them; the chef understands the nature of the how and why of the chemistry and the reactions between ingredients. The chef can therefore adapt recipes, be creative and invent. The chef possesses deep understanding that allows for innovation and transfer. The chef has “conscious competence” that the cook does not yet possess.

Composing to Plan for Process Description

As always, effective instruction starts with frontloading that provides some knowledge of context and purpose and begins to develop procedural knowledge of substance. It's always important that students access relevant background from their own experience and then proceed to develop strategies that will allow them to access data in the world outside their experience.

Brainstorming and memory searches are always good, so students could brainstorm times they needed to explain a process to someone, or explain why or how something happened as it did. Athletes, for instance, often share how they excitedly explain certain plays or sequences to each other after a game, trying to figure out how and why some event played out as it did. They also explain how they watch film to try to figure out how certain plays worked or went wrong.

Search and identify activities are also effective. We like to have newspapers in the classroom, though news sites and other favorite URLs on the Internet also work well. Students can be asked to peruse a newspaper or site and look for process analyses. In today's *Idaho Statesman*, (which we like to call *The Statesperson*) the top local news story is how to protect historic houses in Boise. One of the top news stories is an analysis of how to cut the budget deficit. Leafing through to the other sections there are several recipes, a process analysis of the weekend game as well as particular plays and drives from the BSU football team's victory over the University of Toledo, a process description of how to prepare for a fall fishing trip in the mountains as well as directions of how to reach particular remote fishing spots, the process of wrapping up your summer garden and preparing your winter garden. The health columns describe how to solve back problems with posture and weight lifting, and how to prepare for ski season with certain exercises. Even the advice columnists describe processes of solving particular problems like how to deal with a pregnant teen. And on and on.

It's an easy matter to take this list and brainstorm the purposes of process descriptions and the situations in which they are not only useful but essential. We often ask students to do a scavenger hunt of process descriptions/explanations they provide or hear during a day – the lists are usually quite impressive. From here it is easy to brainstorm purposes and situations in which the present unit can reward process descriptions throughout the unit work, and as a culminating project at the end.

Any unit that involves understanding processes can lead to writing such pieces. For instance, if you ask the essential question: Who is the greatest American leader? You can easily either reframe the essential question to: What is the process of leadership? Or: How do great leaders develop/exercise their leadership? Alternatively, such questions could become a subquestion of the essential question.

Any essential question with “how” (or “what is the process . . .”) leads to process descriptions: How can we create the best musical performance/art exhibit/sconce, etc. (music/drama/art/manual arts)? What determines who wins (math: slope, physical education/health)? How can we determine chemical unknowns (chemistry)? How can I become the person I want to be (identity/personal health)? How can we predict the future of the economy? What would be the best process for reducing the budget (economics)? How can we best protect and promote civil rights (civics/language arts)?

It’s hard for us to imagine a unit that can’t be reframed to include a subquestion that would require and reward process descriptions that would be highly purposeful and compelling to students.

In Jazzy’s classroom, they moved from “What makes the best possible school?” to “How can we make the best possible school?” Jasmine’s group was immersed in a subquestion: “How can we make the best and safest possible playground?”

Composing to Practice for Process Description

Composing to practice, as always, involves continuing to develop procedural knowledge of substance, and giving great attention to developing procedural knowledge of form.

Here’s the heart of the matter for process descriptions, explanations, and directions: *you absolutely have to imagine and accommodate the reader*. This text structure is designed to help a reader understand and/or do something. This is something that must be emphasized with every step and every kind of composing throughout the process of writing process description. For that reason, it is important to provide real audiences and real activity throughout composing to practice. (MARGIN: CCSS Writing #4)

Mentor texts, models, and model excerpts of process descriptions are great for reading, and as models for writing short selections. David Macauley’s *The Way Things Work* and his more recent *The Way We Work* provide multiple excellent examples of process descriptions that include amazing visuals (MARGIN: meeting the multimodal aspects of the CCSS). Students can jigsaw to read and share different parts of the text, tasked with noticing and naming some of the devices Macauley uses to describe processes. Students can discuss how the visuals and text complement each other and work to further understanding of process.

Other good mentor texts include *Why I Sneeze, Shiver, Hiccup and Yawn* by Melvin Berger, *Mr Putter & Tabby Learn to Write* by Cynthia Rylant, and *Born Yesterday: Diary of a Young Journalist* by James Solheim.

Writing after models can always provide powerful opportunities to notice, name and apply different tools for describing a process. BSWP fellow Anna Daley uses a technique called “Author Says/Author Does” to focus her students on noticing and naming. “Author Says” leads to a recounting or summary of the main points – the declarative knowledge of substance to be taken away. “Author Does” focuses students on procedural knowledge of form: how is the author structuring and conveying this

substance through her construction of the text. What signposts, cues and navigational structures are being provided to guide the reader to get the major details and point of the text? (ED: Could provide an assignment sheet)

It's sometimes fun to critique poor models or to follow a negative model. The poet W.S. Merwin's essay "Unchopping a Tree" provides such an opportunity and can be found at http://www.getnewvisions.com/teaching_stories/unchop.html and several other places on-line.

After reading this essay, students can be asked to look at how Merwin uses the process and transitions and structure of process description to describe doing something impossible. Students can then be asked to write about something impossible to reverse, like recovering their lost innocence, unmowing the lawn, taking back gossip, undoing a bad haircut, etc. Students have fun describing how to reverse something that is impossible to reverse, and doing so in a logical, clear and orderly way.

In the strategy "follow only the directions", students write directions for making a peanut butter sandwich. In Jazzy's class, we brought in bread, jam, butter and peanut butter and a knife and lay it out on a table. Then we had a student read their directions. If the directions did not explicitly tell us to unwrap the bag covering the bread, we did not do so. If the directions tell us to take two pieces of bread, we try to grab the slices through the bag without unwrapping it. This led to a lot of laughter, but made the point that directions must be very precise, orderly, clear, explicit and contextual. The students could not assume prior knowledge unless the audience was known to be knowledgeable. (Jazzy's class had fun writing directions for an alien like Professor Xargle from the Professor Xargle books versus for a knowing insider and compare these.) This focus on audience consideration was very important to Jasmine's group as they began to write process descriptions for disassembling and construction of playground equipment. (MARGIN: CCSS Writing #4)

We discuss what was unclear or assumed in student directions, listing the kinds of problems encountered and how to solve them. After this, students can write directions for each other about how to do simple tasks like making paper airplanes. Their partner must explicitly follow the directions and only the directions. This provides immediate feedback about the clarity of the directions.

There are many variations on this activity, like giving directions to places in the school and then following them to the letter, monitoring what makes directions clear, confusing, just wrong or unfollowable!

One of our favorite activities is to provide students with a picture of a Rube Goldberg machine and ask them to describe the process of how it works. These were great fun for Jasmine's class, particularly since the Goldberg machines often resemble playground equipment! It's also fun to for students to come up with their own Rube Goldberg machine to solve a problem (looking ahead to problem-solution), or to critique the Rube Goldberg machine. Goldberg machines were designed to make simple processes complicated, and so they provide negative examples of process descriptions. Students can explore how processes are made more complicated by the machines, and how process descriptions are to make things simple and clear.

Examples can be found on www.rubegoldberg.com/. This site also sponsors a contest for designers of Rube Goldberg machines which some of our students have found fun to enter. This year's contest is to create a machine that can pop a balloon in the most intriguingly complicated way. May the most complicated and crazy machine win! A step-by-step process description must accompany the picture.

Flow charts describing a process are also quite fun for students to produce and combine text and visuals to achieve their end. (MARGIN: CCSS multimodal standards; CCSS Reading Anchor Standard #7 and CCSS Writing Standard #8).

Here's an example from a math class that brainstormed the problem-solving process for algebra and then came up with a flow chart summarizing the process (see Exhibit attached separately).

Sunday cartoons often implicitly describe a process and can be used as the basis for a process description of what has happened. Dilbert is quite good for this. We often use George Booth's famous cartoon "IP GISSA GUL" and ask students to describe the process of what has happened in the strip. Many versions can be found on line, such as at <http://busiek.com/site/ipgissagul.php>

As always, it is important for students to articulate purposes, processes, principles, tools and pitfalls for composing process descriptions in ways that have heuristic value for guiding their future reading and composing of process description.

Another great practice technique is to do think-alouds of various kinds of process descriptions, like lab reports and recipes, being sure to notice specific textual, navigational, and grammatical/lexical features. For example, lab reports have a specific form and tone. Recipes are directive, using imperatives, with many sentences starting with verbs. We do think-alouds of various text types and ask students to create anchor charts describing the features of these different process descriptions. This process builds awareness of the variation of process descriptions, as well as what to do when reading or composing a particular one. When we do think alouds, we do one **for** students, then another **with** students. Then students can do their own with that kind of process description **by** themselves, thus achieving the gradual release of responsibility that constitutes the teaching of procedures.

Composing to Draft for Process Description

The composing to practice process should lead to the articulation of critical standards that can be put into response sheets, criteria checklists, primary trait sheets, etc. These in turn can lead to students' providing each other useful feedback, the use of reciprocal teaching processes focused on process description, as well as the development of declarative knowledge of substance and form at more global levels. Following are some general criteria for process description, based on the standards articulated by Jazzy's class after their composing to practice. Of course these criteria can be tweaked for specific kinds of process descriptions like recipes, etc.

CRITERIA FOR PROCESS DESCRIPTION

- Orient the reader! Introduce an overview of what you are describing and why.
- Provide a clear roadmap that navigates the reader through the process, using discrete step by step descriptions, as well as visuals, graphics and navigational devices if helpful.
- Anticipate possible missteps and how to monitor and correct these
- Define unfamiliar terms and tools that might be important to understand to follow the process.
- Use only "need to know" information! Get rid of "nice to know" info!

Modeling your own response to a student paper based on these or similar criteria and then involving students in responding to another paper will assist them in using the criteria to respond to each other. We also use a technique called roundtable or charette in which we ask for student volunteers to display their paper on the whiteboard, read it aloud, and get feedback from the classroom forum.

We always ask students to serve as peer editors for three other students in their learning group. We have a rule in our classrooms: see three before me! In other words, you have to have three peers (and/or a “keeper” – a parent or adult who is willing to read your paper) agree that you have met all criteria before you can turn your paper in to the teacher. (MARGIN: CCSS speaking and listening standards)

We have found that students can be excellent peer editors for each other *if they are provided with assistance in the form of modeling and mentoring* and *if they are provided with adequate practice understanding and meeting the criteria*. It can also be very helpful to provide a deliverable for the peer responder, such as requiring that they offer one “keep” suggestion about each text they respond to, and then four “change”, “move”, “delete”, or “add” suggestions along with a short justification for each. (MARGIN: CCSS Writing #5)

As another deliverable, peer editors can be asked to do draft marking of the crux moves authors achieve and also caret places where crux moves could be achieved.

Marking the draft

- Draw a straight line (_____) under words or images or transitions that strike you as effective for recreating a process or that are the achievement of a crux move of process description. These words or phrases might include strong verbs, specific details, memorable phrases, and striking images.
- Draw a wavy line (~~~~~) under words or images or transitions that are weak or unconvincing. Put these lines under words the writer repeats too often, ideas that seem vague, flat, or unnecessary.
- Put brackets [] around sentences or groups of sentences that you think should be combined.
- Put parentheses () around sentences that could be clarified.
- Circle overuse of the passive voice ("was written").

Final-Draft Composing of Process Descriptions

Final drafts should exhibit all the five kinds of knowledge, including procedural knowledge of form at the global and local level of the piece. Final drafts are the place to do language study, proofreading, and local level corrections. In the case of process description, work on sentence level specificity or sentence structure that explains connections can be helpful. For instance, an inductive lesson on how colons can show how providing an impetus or catalyst leads to new results can be helpful. E.g. “Pull the trigger: the bullet will then explode from the gun and pierce the balloon, exploding it, and then embedding itself in the target beyond.” Or “Mix the yeast into the batter: wait until the mixture rises to the top of your mixing bowl.” Students then induce the correct use of the colon in a process description and add one or two to their papers. (for more on inductive language lessons, see Smith and Wilhelm, 2007) (MARGIN: CCSS language 1-3, 6)

Composing to Transfer Knowledge of Process Description

The think-alouds we've already discussed are powerful tools for naming what one does in reading and writing, so they encourage transfer. So too are process analyses. A process analysis is a *retrospective* think aloud that describes a process taken after the fact. It's a way of reflecting, after the fact (though soon after!) on the process of reading, composing, or solving any problem or navigating any kind of text. The process analysis describes how you went about completing the task, what decisions were made and why, what options were considered and discarded or could be used in the future.

We often use process analyses with the pre and in-service teachers with whom we work, asking them to compose process analyses of inquiry lessons, classroom activity, peer coaching, or teacher research episodes. We also use them regularly with our school-aged students.

The process analysis answers these questions:

What did you do, and in what order?

Why did you do what you did? And in that order?

What worked? Why did it work?

What did not seem to work? Why not? What did you do about this?

How did you feel at various points in the process?

What options did you have that you did not play out? What could or will you do differently the next time you have this task or are faced by similar challenges?

To what degree were you successful? How do you know?

How can you be even more successful next time?

This is very important for all students, and all teachers, but particularly to novices: there is great importance in naming what you do well, what other options exist and when you might play them out, etc. This leads to conscious competence and to transfer. (For a chapter length discussion of process analyses, see Wilhelm, 2001/2012)

Incidentally, both the short and long performance tasks on the two CCSS assessments, SmarterBalanced and PARCC, requires students to do a process analysis, called a reflection, on how they solved the provided problem. As we've explained, this kind of metacognitive awareness and capacity to justify problem-solving and composing processes is a requirement of understanding. And now it will be a requirement of all our students on the performance based texts they will be asked to take to measure their progress on the CCSS.

Conclusion

When we began this chapter we noted how ubiquitous descriptions are in and of themselves. As we pointed out, description is central to the work of most disciplines. They are also central to the reading and composing of other informative text types. It is to one of these text types that we now turn.

Chapter 9

Divining and Defining: What's the Big Definition?

In our work as educators, we often have to *define* terms, concepts, processes, standards, even theories. For instance, Jeff has devoted himself both as a researcher and as a practitioner to promoting literacy in contexts of inquiry. But “inquiry” is a term that many people construe in different ways. So unless Jeff is in a place where he is sure that his definition is shared, he has to begin by making his definition of inquiry clear: based on work from cognitive science, inquiry is the rigorous apprenticeship of learners into the processes of expert reading, composing, and doing work in specific disciplines.

Even in his everyday life, Jeff has to define things on a daily basis. Recently, Peggy asked Jeff to reserve a “nice hotel” for their anniversary. He immediately asked: “please define ‘nice hotel’ for me, sweetie.” Otherwise, he knew, he was likely to misunderstand and perhaps get into some anniversary trouble! Next, his training partner Willie told him to do two “hard workouts” on his anniversary trip. “Define ‘hard workout,’” he asked. “Level 3, 4 or 5? Endurance or cardio?” You see, athletes classify workouts in various ways and hard is a cover term that could include many different kinds of strenuous workouts. Jeff wanted to be sure to know what Willie meant, which meant Willie had to define the class of “hard workout” he intended quite precisely for him.

As is true at every university, each year Michael and his colleagues have to assess tenure and promotion cases. The discussions of those cases are rife with definitions. What exactly is a “high-quality” article or journal? What is excellent teaching? Before judgments can be made, reviewers have to define the criteria.

And think about how many definitions are involved in parenting. Michael has discovered that “Don’t stay out too late” can mean radically different things to his daughters than it does to him and his wife Karen.

Jim likewise is faced with daily defining problems. For instance, today he met with the fellow members of an interview committee to debrief about the six candidates they had interviewed over the phone. In that discussion, the committee needed to define not only who is a “strong” candidate, but also who seemed to be the “best” candidates to bring to campus for in-person interviews. The discussions revolved around the committee members coming to consensus about the criteria for “strong” and “best” candidates for moving forward to the next step in the process.

The committee asked one another questions like, “How does the candidate complement our existing faculty?” and “What new expertise would the candidate bring to our faculty? How would he/she help us stretch?” These highly contextualized questions, like the others the committee asked itself, work toward understanding a specific and situated definition of “strong” and “best” candidates and which of the candidates seem to meet that definition best.

Our Informational/Explanatory Text Continuum

Clearly, defining depends upon robust descriptions and deep understanding of a concept or phenomenon. We put definition next on the continuum of informational text types because we think it is pre-requisite to comparing and contrasting. Comparisons and contrasts always involve definition of the criteria one employs in making them. For example, all of us have been both secondary and university teachers. If we were comparing/contrasting our teaching jobs, we might talk about which job

has been more rewarding or more difficult or more social or more stressful. To do so we'd have to agree on what those terms mean. Moreover, many, maybe most, comparisons and contrasts are made to make some kind of summative judgment. Which of two movies or restaurants or pitchers or paintings is better? You can't know unless you've defined just what "better" means.

Defining Definition

We will concern ourselves with two types of definition: the short or encyclopedic/dictionary type of definition, and then extended definition, which obviously requires more thought and does more disciplinary "work".

In regards to the shorter dictionary definition, the Purdue "On-Line Writing Lab" (or OWL) has this to say:

"A formal definition is based upon a concise, logical pattern that includes as much information as it can within a minimum amount of space. The primary reason to include definitions in your writing is to avoid misunderstanding with your audience. A formal definition consists of three parts.

1. The term (word, phrase, or concept) to be defined
2. The class of object or concept to which the term belongs.
3. The differentiating characteristics that distinguish it from all others of its class

For example:

- Water (*term*) is a liquid (*class*) made up of molecules of hydrogen and oxygen in the ratio of 2 to 1 (*differentiating characteristics*).
- Comic books (*term*) are sequential and narrative publications (*class*) consisting of illustrations, captions, dialogue balloons, and often focus on super-powered heroes (*differentiating characteristics*).
- Astronomy (*term*) is a branch of scientific study (*class*) primarily concerned with celestial objects inside and outside of the earth's atmosphere (*differentiating characteristics*).

(from <http://owl.english.purdue.edu/owl/resource/622/01/> retrieved October 1, 2011)

These kinds of examples from OWL work well as an introduction to a "dictionary" kind of definition because they are the kind of definition with which students are most familiar. These examples also provide a concrete formula that is easy to follow and is the basis of extended definition. We prefer to present such definitions to students and have them induce the formula. (MARGIN: This process of induction meets CCSS Writing standard 7)

The on-line *New World Rhetorical Dictionary* defines **extended definition** as a writing strategy that describes the finely detailed nature of a concrete or abstract subject. "Extended definition is a kind of essay based on that definition, expanding its scope by considering the subject in more finely layered terms and considering larger issues related to the subject" (for example, the different ways in which varied groups of people might define a term like freedom, the limits placed on the subject in particular situations, examples/counterexamples and borderline test cases, etc). (retrieved from http://college.cengage.com/english/muller/new_world_reader/1e/students/rhetorical.html October 1, 2011)

In a seminal study on teaching extended defining, Hillocks identifies the following strategies for defining: "1) to circumscribe (identify) the concept generally, 2) to compare examples in order to generate criteria which discriminate between the target concept (to be defined) and related but essentially different concepts, and 3) to generate examples which clarify the distinctions" (Hillocks, et al 1983, 276).

In this and other studies, George found that engaging students in working collaboratively to think through problems that require employing requisite strategies led to significantly higher engagement, enjoyment, learning and performance than learning from information transmission about a text structure, or working from models without analyzing those models to determine criteria of substance and form. (MARGIN: CCSS standards for collaboration, speaking and listening)

Both kinds of definitions are entirely situation dependent. Words and concepts can mean many different things to different groups and in different contexts. Think of Jim's interview committee – they wanted to define "best candidate" for the

present context of the English department. Therefore, in writing any definition, it is important not to define a *word*—but rather to explain a *concept* in terms of how it works in the specific context and for a particular purpose. (MARGIN: CCSS Writing Anchor Standard 4)

In short, to teach kids to define, we have to teach them to identify definitional problems, to group, to analyze, and to distinguish. These are the *crux moves* that they must practice and master.

Why Definition Matters

In our previous chapters we’ve discussed why the text structure focused on is important. We think that doing so is especially useful when we discuss structures like naming, listing, and summarizing in order to persuade our readers that these seemingly simple structures are in fact complex and foundational and consequently well worth teaching.

In contrast, definition is so central to so much of what we do both in and out of school that it’s hard for us to imagine anyone not thinking that definition is an important structure to teach. Virtually every public policy issue involves definition of one sort or another. Is this group made up of terrorists or patriots? Is this species endangered? Is this law discriminatory? Virtually every discipline requires definition. Just type definition into the search bar of Youtube to see what we mean. On the first page alone the following disciplines are represented: law, math, sociology, religion, physics, biology, and music. If our students are to be good citizens, if they are to be successful in any discipline, they have to learn to define.

Unit Idea: What Is An Effective Leader?

Composing to Plan for Definition

As always, the purpose of composing to plan is to develop knowledge of context and purpose in which the text/thought pattern is important and useful. The phrasing of an essential question can create a context that requires defining. We’ve taught units around essential questions like “What makes a good friend?”, “Who is a hero?” and “What is an effective leader?” which is the essential question we will pursue in this chapter.

These questions require extended definition to address. In disciplines other than English, any essential question that implies the need for a definition (or ranking or comparison) will provide a unit that will require and reward, support and co-produce the composing of definitions and extended definitions throughout that unit, for example, “What makes a powerful chemical?” or “What were the most influential voyages of discovery?” or “What are the most strategic geographical positions in the world?”

Doing a focused freewrite as a memory search for definitions that students have encountered is another great way to get started. (MARGIN: LESSON IDEA) Brainstorming contexts and uses of definition, monitoring of a day to see how often a thought pattern like definition comes up, engaging in newspaper and Internet “search and finds”, etc. are other quick and useful ways to explore context and purpose. (MARGIN: CCSS Writing standards 4, 7)

Jeff recently asked students to leaf through newspapers and identify concepts that might be useful to define. He asked them to do it by subject area so they could see how definition is important in all disciplines. (MARGIN: LESSON IDEA)

Their list:

Civics/Law: What is guilty? What is murder? What is terrorism? What is pornography? What are civil rights? What is sexual harassment? What is proof?

History/Social Studies: What is an act of war? What is terrorism? What is a citizen? What is patriotism/patriotic action? What is a civil right? What is a 'balanced budget'? What is fair? What is treason? What is equality? What is equality of opportunity? What is fair?

Physical Education/Sports/Health: What is an All-Star? All-American? What is a team player? What is a franchise player? What is a slugging average? What is healthy teen living? What is safe?

Current Events: What is marriage? What is civil union? What is respect? What is Life? Death?

Science: What is environmental protection? What is an ecosystem? What is organic?

Math: What is statistically significant?

Personal: What is friendship? What is ethical? What is right action? What is PG-13? What is maturity? What is appropriate?

(MARGIN: CCSS Reading standards 1 and 2)

Because Jeff teaches a lot of LDS students, they brought up some religious concepts like "What is temple ready?" which caused some laughs since a lot of us had heard the term but had only a vague idea what it meant. But the Mormon church pays scrupulous attention to this definition and its application!

The list went on from here. We could see that the students were able to identify defining problems and relate these to audience needs, the first step in writing extended definitions. (MARGIN: CCSS WRITING ANCHOR STANDARD 4) Before the bell rang, and having these contexts and purposes to think with, the students continued working in groups and came up with this list of **when to embed simple dictionary definitions in compositions**:

- When you are using a term or idea that is probably unfamiliar to your audience
- When you are using a term or idea in an idiosyncratic (idiotsyncratic?) or special way that the audience might confuse with another way of thinking about that term or idea.
- E.g. The term "economy" has many meanings; because we are studying leadership and responsibility we will use "economy" to mean "personal thriftiness".
- When the history of a word (its etymology) is interesting and illuminating and on-point to the case you are writing about so you want to share this.

When to compose extended definitions:

- When the audience needs to know the writer's understanding of a really important term or concept.
- When you want to convince an audience that they should share your definition of a term or concept.
- When you and an audience need to agree on the definition of something to have a discussion, understand each other, or get something done together like solve a problem.
- When the term is just so abstract or complicated that a simple definition will not do.

(MARGIN: CCSS Writing 4 and 5)

We've found these general brainstorming and search activities to be easy and useful. But as we begin to consider more complex text patterns, particularly those important to disciplinary knowledge making and those that are less transparent and obvious to students, we also use other activities to dig deeper into the nature and structure and use of the thought pattern. One way to do so is to engage students in **ethnographic work**. You can model what you want students to do by carefully examining your own behavior.

For example, Jeff recently modeled ethnographic investigation by saying that whenever he wandered the hallways, he had to carry with him a definition of "appropriate behavior" so he would know what student behaviors to ignore and what behaviors he had to address. He often had to define "cheating" or "creativity" in dealing with student work. Likewise, whenever he graded student compositions, he needed to have a definition of an "A" paper versus a "B" paper and so on. Since Jeff teaches classes in both English and Reading, he sometimes has to define for himself, for students or parents what constitutes "English" and what constitutes "Reading."

Jeff asked the class to choose some other school activities, like drama, sports, academics and the like, and talk with people in those activities to identify some terms that might need defining. (MARGIN: LESSON IDEA) For sports, the kids came up with terms like varsity, J-V, point guard, center, All Conference, All State. For drama, they identified lead, supporting cast, crew, musical, drama, tragedy. For academics, they talked about the need to define honors, high honors, AP, as well as the content of particular classes like Environmental Science vs. Biology.

(MARGIN: CCSS Writing 7, collaboration, speaking and listening)

Conceptual Frontloading and Procedural Frontloading:

Dramatic scenarios. One way to get going with learning how to define is to have students illustrate key concepts from the unit through drama, by composing and performing a scene exhibiting a term or trait. Such an assignment requires them to examine what the concept under study looks like in their lived experience. This mining (cf. Greene, 1993; Ladson-Billings, 1994) of their own thinking and experience helps to develop procedural knowledge of substance in both personally and culturally relevant ways. When the concepts are represented and named, we have achieved some declarative knowledge of substance. (MARGIN: SEE CH 3 FOR MORE ON PLANNING)

Because students are exhibiting the trait under consideration, they are also engaged in procedures of defining (grouping, analyzing, distinguishing), so are beginning to develop procedural knowledge of form. (MARGIN: SEE CH. 3) These procedures can be named after the planning and performances, through discussion, formative assessments and other kinds of composing to transfer, to become declarative knowledge of form.

Here's an activity we've used in a unit centered on the question "What makes a great leader?" (MARGIN: LESSON IDEA)

Are You an Effective Leader?

We will divide the class into equal groups of 4 or 5 students per group. Your mission as a group is to come up with a simulation (skit/role playing scenario) demonstrating in action a concrete example of your group's thinking about what an effective leader is and how they act. Your group may use whatever type of leader you want but it must be school appropriate. I will be walking around to listen in. If you come up with an idea and are ready to have it approved raise your hands I will be there as quickly as I can.

In order to accomplish this task successfully within your group you will need to . . .

- 1) Decide among the group who will play what roles.
The roles you need to fill are:

1. Head Leader
2. Assistant Leader
3. Two or Three "Followers"

***This is just an example of how you might divide roles up but you can also choose your own. It is 100% your choice on how the roles are distributed and developed. However, everyone in the group must have an active role to play in the preparation and the performance of the simulation.

- 2) Once roles have been assigned, your group will come up with a short skit that shows effective ways that leadership is exercised. You can choose situations from our daily lives, or more worldly examples. Feel free to use resources (Internet, books, cartoons, your own life, etc.) for suggestions about situations and roles you may want to portray.

- 3) The skit must show an example or examples of "effective" leadership (however your group defines it). The leadership portrayed can be either negative or positive but it should show or suggest how this leadership behavior affects the other members (assistant leader and followers). You might also include a counterexample of less effective or ineffective leadership, perhaps on the part of one of assistant or followers.

- 4) Once your group has your skit prepared, rehearse it a couple of times to make sure it works and makes sense because you are going to perform it for the class. The class will try to identify how you define effective leadership, and how your positive or negative example can be explained to relate back to your definition.

While working on this project, if there are any questions or if a group is stuck I am here to assist you. There is going to be class time provided to complete this activity. However, if your group feels that you do not have enough time you are more than welcome to work on this at home. You are also welcome to bring in small props and materials that you would like to use during your performance.

Your completed group simulation is due on Thursday. We will have three groups perform on Thursday and three on Friday. Groups will be drawn at random so all groups must be prepared on Thursday!

HAVE FUN AND GOOD LUCK!

(MARGIN: CCSS Writing standards 2 and 4, collaboration, speaking and listening, multimodal presentation)

This kind of conceptual frontloading is already helping students to generate ideas for their own definitions of leadership, activating prior knowledge and bringing them into contact with other sometimes competing ideas. The conceptual frontloading above, since it focuses on defining and providing examples or counter-examples of leadership is also introducing students to procedures of defining.

But drama isn't the only kind of activity you can use for conceptual front-loading. The following activities generate conceptual knowledge at the same time that they focus more closely on procedures of defining. Before we begin, we'd like to acknowledge that much of our thinking and many of the activities around extended definition is based on the "defining" work (ha ha ha) of our colleagues and friends (Hillocks, Kahn & Johannessen, 1983; Johannessen, Kahn & Walter, 1984; Smagorinsky, Johannessen, Kahn & McCann, 2010).

Ranking Models. (MARGIN: LESSON IDEA) We very much like activities that rank student models of the text pattern because, unlike ratings and other activities, rankings require students to articulate standards of judgment.

Early on in the first few days of most of our units, we share three examples of student culminating compositions or projects from the previous year's unit. We like to provide three interesting and fairly strong examples of comparable quality, since this modeling sets the baseline for what students expect that they must be able to do. We like for the models to differ in the relative strength of their different components. Defending judgments in contested cases always requires more thoughtful explanations than do clear-cut cases.

It's very important that we teach students what Hillocks calls "enabling strategies," procedures that will help them to do what must be done to compose (or read) a particular kind of text. Following Hillocks, we like to do so in ways that require students to analyze examples and generate substantive content and criteria about form.

The activity of ranking student models can steel student concentration on the criteria of the thought pattern/text structure they will be composing, provides different models of the structure, begins to give them ideas about what to include as well as problems to avoid, and helps them begin considering the process of creating this kind of text. We do this kind of activity not only with the text type students will write, but also with projects like visual displays, video documentaries, PSAs, websites, videos of drama projects or anything else students are being prepared to create.

This activity results in the articulation of a task analysis, in combination with knowledge of purpose and context, which covers most of what we consider to be composing to plan.

We prefer to use examples from the previous year's students. This adds some reality and gravitas to the project. Our students say: "Oh, that's what last year's eighth graders they did. I can do that!" They can't opt out by saying: "That's a professional example and I can't be expected to do that." It's also fun for students to guess about the authors, and since we are quick to say that all three examples are pretty good ones, it is a celebration of previous students' work and how such work became archival – at least in our school! In the case that you are doing an assignment for the first time, it's easy to write your own examples for use in the class, and sometimes even easier to find student examples for use or revision among the dross of the Internet.

Here are three examples of student models from an inquiry into "What constitutes personal greatness and leadership?" conducted in a 9th grade classroom. As you'll see, students chose to respond to a subset of the overarching question.

A great teacher

A great teacher is hard to define. This is because a great teacher is different in different situations and for different people. All teachers instruct. A criterion that all great teachers meet beyond instructing is that they are inspirational. In other words, they make learning fun and interesting and seem worthwhile and important. Another criterion is that they relate to you personally. But what makes something fun and interesting to one person will be different than for someone else. And who anyone likes and feels a relationship with will be different than someone else's likes. So defining a great teacher is really subjective and will be different for different people, but always involves inspiration.

Political leader: Greatness defined

A great political leader can be defined as someone wielding political power and influence who is inspirational, visionary, communicative, effective (most of the time) particularly in times of crisis, and who works for the common good of not only those whom she serves but for the world as a whole. These criteria are highly interrelated.

It's important to discuss and come to agreement on greatness in leadership so we can evaluate our leaders, decide whether to re-elect them, and consider when to call them to account.

For example, Abraham Lincoln was inspirational in that he had a vision of our country as unified ("A house divided against itself cannot stand", "All the soil of this country is American soil."), and as dedicated to equality for all people (The Emancipation Proclamation). But this was not sufficient to achieve greatness as a leader: he also was an effective communicator and could inspire people to belief and action through his words. His Inaugural Addresses and Gettysburg Address are just a few examples of how he framed the issues facing the country in ways the people could understand and "buy into".

Lincoln's greatness is also defined by the fact that he achieved progress and success even in the face of terrible trials. He kept his cabinet together despite many disagreements. He kept the military funded. He was able to get re-elected which allowed the country to successfully end the war. He took every opportunity to further his agenda, such as issuing the Emancipation Proclamation after a semi-victory at Antietam Creek, which made the war explicitly about slavery and therefore introduced constitutional constraints to keep England and France out of the war when they were ready to side with the Confederacy.

His emancipation of the slaves, the re-unification of the country, and his desire and plans to heal the rifts after the war are all signs of his attempts to serve humanity. And these ends were for a greater good for everyone in the country, for the country itself, and for the world, since ending the slavery and becoming a unified country had positive results and was a positive model for people everywhere.

But consider a counter-example. Hitler was also inspirational, visionary and communicative. His speeches were spell-binding and envisioned a new Germany emerging from the ruins and humiliation of World War I. He inspired people to make great sacrifices to achieve his vision. He built the Autobahns and gave everyone a Volkswagen and Volksradio. So why is he not a "great" leader? The first reason and most important reason is that in the end, his vision was unworthy. The Holocaust and a war of conquest were immoral for his own people and hurtful for them and the world. It was selfish and self-serving instead of in service to all. A secondary reason is that he was defeated. He did not emerge victorious from his trials or his country's trials.

Sometimes, the issue of moral effectiveness is not clear-cut in the near-term and we must wait to see what history decides. But moral effectiveness, the ability to raise a people and the world up to greater moral achievement that benefits themselves and others, is the ultimate test of a “great” political leader.

A great teammate

A great teammate is a great teammate: someone who does whatever is necessary to help the team be better, get along better, and to win.

A great teammate is on display when he gives his best every day in practice. A great teammate is when he is sacrificing himself for the team, being willing to sit on the bench, for instance, if another player can help the team more by guarding an opponent or being able to exploit an opponent’s weakness. Being a great teammate means staying positive and cheering on teammates and being happy for their personal success since this leads to the team’s success. A great teammate buys into the program and can inspire other people to work harder and to strive to be better even if he is not the best athlete on the team.

A great teammate is NOT someone who has great statistics, particularly if the stats are so good because they hog the ball or deprive teammates of other opportunities. A great teammate is not someone who is talented and a floor leader but is not friendly in the locker room and doesn’t say hi to you in the hallways.

Wil Larson is a great example of a good teammate. He cheers on everyone, does whatever the coach or teammates ask of him. He often stays after practice to play one on one with teammates working on certain moves. When he is on the field he is always positive and works his hardest. When he is on the bench he cheers the team on. Wilson is the kind of guy who you want to have on your team, even if he is not on the field. That is what makes a great teammate.

We ask students to rank these models from best to weakest, and to journal about the specific reasons that makes one superior to the others. We then have students meet in small groups to discuss their rankings, and much more importantly, the reasons for their rankings. (MARGIN: CCSS Reading Standards 1-9) This can lead directly to the creation of class criteria for our own extended definitions.

Another great activity for foregrounding what is necessary to defining and the obstacles to it is to engage them in experiencing the difficulties involved in defining everyday terms. We’ve modified an activity from Johannessen, Kahn, and Walter (1984) to focus more on leadership so that our students are developing conceptual and procedural knowledge useful in our unit.

They provide a survey for students (MARGIN: LESSON IDEA) that asks students to individually provide the best possible answer to questions like:

-
1. About how many inches of snow would have to fall before you could consider a storm to be a blizzard?
 2. Which of the following are cities, towns or suburbs: Green Bay, WI; Beverly Hills, CA; Aspen, CO; Boise, ID; Los Angeles, CA; Madison, WI; Beaver Dam, WI.

3. At what age does middle age typically start?
4. What is the average height and weight of an accomplished athlete?
5. How many people in this room have brown hair?
6. How many “arts” courses and activities does the school sponsor?
7. If a climate is described as “tropical” what would you expect the average temperature to be on a summer’s day? What about if a climate were described as “high desert”?
8. Rank the following activities in terms of how well they demonstrate leadership: daily morning paper route, photographer for the year book, lead role in the school play, member of the ski club, vestry at church, volunteer at hospital, captain of cross country team, student council secretary
9. How many “leaders” are there in the classroom?
10. What leadership opportunities are available to you at school and at home?

(MARGIN: CCSS Writing Standards 5, 7, collaboration, speaking and listening)

Sometimes students get the point of this activity before they start sharing their individual responses in small groups, but they always get it when they begin to share. We ask students to justify the thinking behind their answers. As we do so, it becomes clear to them that sometimes there are multiple criteria for a concept. In the case of a blizzard –this designation refers to wind and visibility as much as it does to snow. Who are we referring to when we talk about athletes- high school or professional; running, basketball or football? Don’t we need to be more precise? Aren’t there different types of athletes? How are we to define brown, teen, and the arts? What are the breadths and limits on each term? Where does each begin and end? How do we formulate and apply clear criteria? How do we relate specific cases and examples to the criteria? How do we differentiate borderline cases?

As students discuss the problems they encountered, they are coming to grips with the problems that must be addressed while defining.

After such an activity, we ask students to come up with a couple of survey items of their own and encourage them to ask their parents or friends to answer the questions. They can then monitor what obstacles are encountered.

Articulating Criteria/Rubrics. (MARGIN: LESSON IDEA) With this preparation, students can begin articulating criteria for a rubric or checklist for composing definition. The rubric lays out our action plan for composing to practice: what is it that we need to learn to do.

We always like to have our students articulate the criteria for an effective culminating project as far as possible. We believe that if you want kids to get good at something, then you have to help them to engage in that process. We want our students to be able to develop, articulate and apply critical standards, so we make that part of our process.

Student thinking, such as their responses to the ranking activity, their reasons for or difficulties in defining, are put on the board and used to help the class articulate the criteria of a strong extended definition, and to create a rubric or performance check-list.

Here’s one from a tenth grade class. We don’t hesitate to put some of the students’ phrasings into the “terms of art” from the discipline. Since we are inducting them into reading and writing like disciplinary experts, we try to use such terms of art as far as possible. We also like to help the students articulate the criteria in the order in which a writer might do things, so the criteria become a kind of task analysis for what we need to learn to do.

-
1. Identify something that needs to be defined and explain the importance of defining this concept, unless that is blatantly obvious.
 2. State the concept to be defined and place it in the “class” or group of ideas to which it most clearly and closely belongs.
 3. Gather, generate, and analyze examples, counterexamples, aspects and forms of the concept.
 4. Identify specific criteria (or “bases”) that mark the use of the concept to be defined. Where does the term begin and end? How is it differentiated from others in its class?
 5. Provide examples that exemplify these criteria and explain (or “warrant”) how the example concretely demonstrates the criteria.
 6. Provide counterexamples so you can show the limits of the concept, and explain how these examples lie outside the term.
 7. If things are really sticky, you might want to examine a borderline case and explain what would make that example belong as an example of this concept, or of a different related concept.
-

Articulating criteria in such a way guides task completion and the application of critical standards throughout the composing process. Throughout this process, students are practicing grouping, analyzing and distinguishing based on specific criteria. We post the rubric and continue to update it through the drafting and finalization stages. (MARGIN: CCSS Writing 5, 7)

Composing to Practice for Definition

As we compose to practice, we continue to work on developing enabling strategies for generating material for our final compositions as often as possible, but focus primarily on learning procedures for shaping material into definitions. We continue to revisit and update our criteria. Following are some activities that help us to achieve these ends, and to develop the specific moves necessary to composing extended definitions. In Hillocks et al’s terms: 1) identifying the concept generally, 2) generating criteria which discriminate between the target concept (to be defined) and related but essentially different concepts, and 3) generating examples which clarify the distinctions.

Defining the self. Following our principles for sequencing, we like to start close to the home of our students’ funds of knowledge. A fun activity that fulfills this criterion of sequencing is to have students write short definitions of themselves – to capture their identity, the absolutely essential X qualities necessary to their Jeffness, Jimness, or Michaelness. We have them write this definition for presentation to a friend or adult “keeper”, who then can provide advice for things to keep, add, or delete. Generally, students can follow the formula of listing classes of people they belong to as well as how they are unique or differentiated from others in those classes.

Here’s a model Jeff uses:

Jeff is essentially a very active person. He is active of mind and body. Activity is his elixir. He is quick-thinking and quick witted and likes to tell jokes and pull funnies. He likes to read and write and think about things like how to teach and how to live in more sustainable ways but he always puts his ideas into action. He likes to teach and do it through activities like drama

and art and making videos and websites. He likes to bike and ski and he likes to do them fast. Jeff is also relational and loves his family and friends. Relationships are his home. He is only Jeff when telling jokes to others, teaching others and skiing with others. Take away Jeff's activity and he would no longer be Jeff. Jeff being too quiet would not be Jeff. Jeff lecturing is not Jeff. Jeff skiing slowly is not Jeff. Jeff without his family and friends and students and colleagues and fellow citizens would not be Jeff.

Another way of doing of making definition immediately and personally relevant is through a Bio-Poem (MARGIN: LESSON IDEA), which can be done through varying formats for oneself, for characters or historical figures, and then for ideas and concepts. You and students should feel free to adapt the lines to fit the needs of the moment, but here's some of the prompts that we've used:

First name:

Who is a kind of/(member of the class of):

Descriptive words: traits:

Who needs: Friend of:

Who feels: Foe of:

Who fears: Lover of:

Who gives: Who believes

Who would like to see: Who gave:

Who is definitely NOT: Who is considered by others to be:

Who typically: Who typically does not:

Resident of: Who acts to/in service of:

Who is like/unlike: Who contains multitudes of:

Who is made up of/consists of: Who is caused by:

Who is closely/distantly related to: Who compares/contrasts to:

Whose relevant history is: Who is an example of/not an example of

Last Name

After practicing with themselves or a character, it's easy to do this for a concept. Here's an example one 6th grade student came up with

PHOTO

Botanical, natural, life-giving, carbon-dioxide sucking

Who needs sunshine to happen

Who feels green and greening

Who fears total darkness

Who gives out oxygen through respiration

Who would like to see the world covered with trees and plants

Essential Resident of the breathing pulsing Mother Earth!

Creator of the oxygen in the atmosphere we breathe

SYNTHESIS

We then have students consider what was necessary to the process of identifying and defining themselves, others, or a concept as unique individuals or ideas and apply this to our evolving heuristics about defining and about defining identity. Notice how we are moving from close to home defining of the self to further from home defining of concepts. By this time, students can use these techniques as applied to leaders they have read about, or to effective leadership as a concept. (MARGIN: CCSS Writing 2, 4, 7)

A couple of other techniques that are quick and fun and useful for developing extended definitions are Kenneth Koch style poems (see for instance his book *Sleeping on the Wing*), where students write after a model. (MARGIN: LESSON) Emily Dickinson's "Hope is a thing with feathers" is a great example since it provides a metaphor and criteria for a definition of hope and ends with a contrasting example. Students can be asked to follow Dickinson's model for creating an extended metaphor for loyalty, honesty, flexibility, proactivity or another trait that could be related to leadership.

Our students also hugely enjoy creating YouTube Video definitions (MARGIN: LESSON IDEA) that visually depict examples and non-examples that exhibit a concept around the inquiry. (MARGIN: CCSS Writing 6) (ED: I COULD PROVIDE A LINK TO AN EXAMPLE)

Thus far all of the composing to practice ideas that we've shared involve students in all three crux moves. But sometimes we focus more specifically on one of them. Our favorite activity for helping kids identify "classes" or meaningful groupings is from Johannessen et al (1982) and is called the Pyramid Game.

To prepare, come up with ten or so lists of items belonging to a single class. We like to start with familiar items and then move to material from our unit, on leadership in this case. Such lists are very easy to make with a simple google search. We like to make the lists such that they reward different kinds of interests and expertise and therefore encourage teammates to work together.

Little Debbie	Holding	Mike Krzyzewski
Mudpie	Clipping	Pat Summit
Twinkie	Interference	Billy Martin
Snickers	Offsides	Vince Lombardi
Jolly Ranchers	Grounding	John Wooden
Napoleon	Cleopatra	
Grant		Queen Elizabeth
Washington		Margaret Thatcher
Alexander the Great		Hilary Clinton
Julius Caesar		Angela Merkel

To play the game, create teams of 4 or 5 students. The teacher offers the first element of a list – Group 1 has the chance to guess what “class” or “grouping” is described in the list, or they can defer. If they defer, any other group can take a stab. Teams get 3 points for a correct guess and minus 1 for an incorrect guess.

As one option, you can give points for a correct answer but continue uncovering the list to ask for and reward a more precise answer. For example, if students guessed great college basketball coaches for the third list after seeing Mike Krzyzewski and Pat Summit unveiled, they could be awarded points, but the rest of the list reveals that the list more precisely is about the class of great coaches – of any sport at any level.

Another option: To move beyond identifying classes to identifying criteria and explaining how examples fit the criteria you can do the following. After the list is uncovered, each team can be rewarded with up to five points for collaborative writing that identifies the criteria necessary to being on the list, and explains how each item on the list meets these criteria. They can also write about disqualifying criteria, which gives practice in distinguishing and providing counter-examples. Applying this to the leadership lists helps the students to produce substance related to the inquiry as they practice mastering the procedures of forming definitions. A two-fer!

Here’s another option. Put a contrasting example in each group. For example, in list one, add an apple. Make the game about identifying the class and identifying and explaining the contrasting example. Kids will have to explain how the apple is a sweet snack, like everything else in the list, but is a natural complex carbohydrate not a manmade concoction of simple sugars. If you can connect the items on the list to ideas students have been studying in your own and other classes, so much the better (our students had just done a healthy foods unit in health class).

Our students have enjoyed coming up with their own lists about leaders of particular kinds and using these in a second iteration of the game. We often learn a lot about popular culture from this kind of work and it gives kids more practice thinking about the concepts of leadership and the procedures of forming definitions.

What's important is to give the kids enough practice to be successful with the crux move, but to move on when they have mastered it. (MARGIN: CCSS Writing, 4, 5, 7, collaboration, speaking and listening)

Identifying classes is important but so is knowing the limits of the class. Sometimes students need assistance naming specific, substantive differences between items that are related but might not fit the same class. A great practice technique here is called "Name that Group" (MARGIN: LESSON IDEA)(Johannessen, et al, 1982).

Provide groups of students with a collection of objects like shells or CD or video game covers, or other concrete objects – or photos of such objects. Ask each group of students to divide the objects into two groups without any item being left out. Then ask the group to explain the characteristics of each grouping and how they are different. You can quickly move to piles of books about leaders or news magazines that obviously will have stories about leaders, etc.

Students will find that there are many different ways to group their items, dependent on the criteria they decide to use. What is important is to generate criteria that make sense to them and that will allow them to divide all of the objects into two groups.

As a follow up, students could be asked to create groupings for their closet at home, a cupboard or drawer. They could write brief explanations of each grouping's common characteristics, as well as noting violations of the general grouping criteria. (MARGIN: CCSS Writing 5, 7)

"Name that Group – The Sequel" (MARGIN: LESSON IDEA) is an activity that ups the ante. Students can use the same collection of objects but now are asked to create *multiple* criteria for difference such as function, appearance, history, material, etc. Their job now is to create new classifications and ways of classifying (which presages learning a more complex text type). Model for students first, then encourage them to create elaborate criteria for groupings. We ask only that at least two items belong to each group and it is OK if an item belongs to more than one group. The purpose here is generating criteria for grouping.

When students have created characteristic criteria for a grouping, they can give their objects and criteria to another group, asking the new group to classify their items according to the offered criteria. This will demonstrate how clear and usable the criteria are for noting important similarities and differences that might be important to including or excluding an item from a class of objects. It will also demonstrate whether the criteria they articulated are clear and usable for another group applying these to the same set of items. If not, students can discuss why and revise their criteria so that they are usable. (MARGIN: CCSS Writing 2, 4, 5)

To further help students create criteria, examples and explanations of how the example meets the criteria, we like activities like creating oaths or contracts (MARGIN: LESSON IDEA). This can be done for any familiar concept or term and then used for concepts that relate to the inquiry that might be "further from home".

Here's one we've used as a model. Students can follow the model by filling in their own criteria for friendship in the underlined spaces, or can choose to use some of the numbered lines and invent others. Or they can start from scratch.

CREATING A FRIENDSHIP OATH

I do solemnly swear and affirm, for the privilege of being a friend to my friend Dale, I promise:

1. I will support my friend in his interests, beliefs, family and job responsibilities;
2. I will promote his talents and abilities and his becoming his truest self;
3. I will respect my friend and protect his beliefs and reputation with diligence;
4. I will never mislead or judge or get upset with my friend according to unknown and unshared criteria.
5. I will protect my friend's secrets and will expect the same as compensation;
6. I will practice constant communication and avoid offensive conduct; I will believe the best of my friend on all occasions unless proven otherwise.
7. I will never exploit the insecurities and foibles of my friend in public unless the justice of the case demands it;
8. I will not, for idiosyncratic or personal reasons, deny respect or affection;
9. I will personally fulfill the responsibility to help my friend to the fullest of my ability whenever he calls upon me or seems to be in need.
10. I will tell my friend the truth, even if it is hard, especially if it is in his best long-term interest.

Afterwards we ask students to take one of their criteria and compose a specific anecdotal example of how they would meet that criterion. They might also describe a contrasting example and explain how this would be a violation of the criterion.

Students can then move to creating a contract or oath or list of commitments that can be applied to leadership in a particular situation of their choice, which will help them produce substance for future writing on leadership. (MARGIN: CCSS Writing 2, 4, 5)

To help students develop contrasting examples, we often provide negative examples of leaders, or negative models of definitions. (MARGIN: LESSON IDEA) Students can also generate or find their own negative models through Internet research. (MARGIN: CCSS Writing 6, 7) These can then be used to challenge our students to create "How Not To" Guidelines. Here's one from a class of tenth graders Jeff worked with.

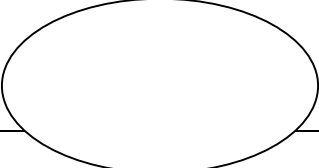
How Not to Write a Definition: things to avoid!

- Don't define a word by repeating or restating the word or using well-known synonyms.
"Patriotism is being a patriot." Come on!
BETTER:
"Patriotism is acting in ways that serve the democratic ideals of America in ways that serve all citizens."
"Skin cancer is a bad disease of the skin." How does this clarify anything?
BETTER:
"Skin cancer is a disease of malignant skin cells replicating beyond control."
- Don't use new terms or complicated words that your audience won't understand and that they are going to have to look up! Really! You are writing this to HELP THE AUDIENCE not cause them more work!
- Avoid defining with "X is when" and "X is where" statements. Define a noun with a noun, a verb with a verb, like that, you know!
- Don't go long if you can keep it shorter! SHORTER IS BETTER, BABY!
- Keep the "class" portion of your definition adequate but focused. It should be large enough to include all members of the term you are defining but no larger.
- Don't define with just a metaphor: "Patriotism is the last refuge of a scoundrel" can convey something true, but it's not a definition, which is supposed to tell us what patriotism is. Metaphors can help a definition, but don't provide one. GET IT?
- Don't use personal details that other people won't get like how Wil Larson is a great soccer teammate or how your grandfather exhibits exemplary stinginess. Most people don't know Wil or your grandfather! So this reference won't help them, DONCHA KNOW!

A variation that focuses on the concepts in the unit is to create a list of how NOT to be a leader with an explanation that relates to each criterion (MARGIN: LESSON IDEA). (MARGIN: CCSS Writing 2, 4, 5)

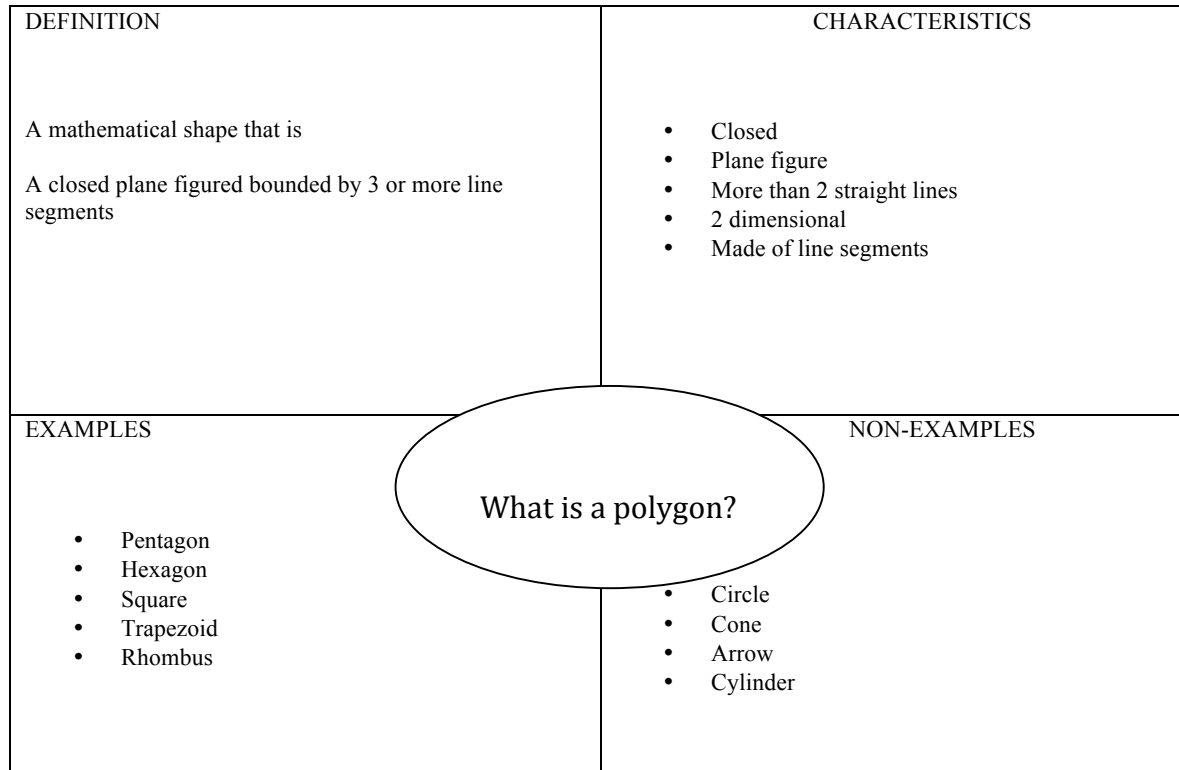
Framer models are a great graphic organizer for helping students to think about putting all these crux moves together, with the exception of explaining how examples fit criteria, which students can be asked to do after creating the Framer.

FRAYER MODEL

SPECIFIC INSTANCES/EXAMPLES	SPECIFIC NON-EXAMPLES
	

GENERAL CRITERIA:	DEF WORKING DEFINITION
PRINCIPLES AND CHARACTERISTICS	

FRAYER MODEL-Examples



(MARGIN: CCSS Writing 2, 4, multimodality standards)

Composing to Draft Definitions

Once students have done even some of the composing to plan and practice explored here, they have developed all five kinds of knowledge (SEE CH 3) and can now put these into play in writing a formal extended definition. It will be important, of course, to remind students of the criteria for the assignment and negotiate further changes to the rubric or checklist based on what they have learned.

We often ask students to collaborate to create a planning guide before we proceed with drafting (MARGIN: LESSON IDEA). This guide creation can also be done at the end of composing as a reflective “composing to transfer” assignment. Here’s an example from a tenth grade classroom. We’ve done this with third and fourth graders and though the guide is simpler, it captures the same principles.

DEFINITION ESSAY -- PLANNING GUIDE

1. Identify what needs to be defined and why.
2. Identify the audience and their needs. E.g. a general audience for whom terms must be broken down in simple novice terms or is it a specific/specialized audience who will know technical terms and have other background that will not require further explanation? (MARGIN: CCSS Writing Standard 4)
3. State the sentence definition of this term (*Term, Class, and Distinguishing Characteristics*)

- The *Term* is the concept(s) to be defined.

- The *Class* is the group or category of similar terms in which the term to be defined is to be placed.
- The *Characteristics* are the essential qualities that set the term apart from all other terms of the same class.

Your job is to make the concept clearer in the reader's mind, so plan how to develop your simple definition into an extended one: you will need to do research to develop some of the following:

Specific examples

Metaphor, Analogy or Comparison

Contrast – with ideas that might be confused with this one

Describe parts or subtypes

Put the concept in relation to other concepts – how is lying related to honesty, etc.?

Provide some history of the term or idea

Describe and commit to any values that may be part of your definition, e.g. a leader must be uplifting to his followers and inspire them to healthy action that is of benefit to themselves and others.

Apply or look for a test that can be used to determine whether something falls within the concept—an *operational definition*. If so, tell how the test works. For example, a car qualifies as a *Zero Emission Vehicle* if it performs a certain way (does not emit anything other than water, hydrogen and oxygen) on a particular test (an emissions test).

(MARGIN: Using the planning guide helps students meet Writing Standards 3, 4-10)

Planning guides can be put in the library, the class website, and used by future classes. Some students like making YouTube Planning guides or powerpoints for their peers. Sometimes we have students build on and improve guides from a previous year. (MARGIN: CCSS Writing 6)

To guide peer editing, we use the following peer editing guide:

General Reaction -- Read your classmate's piece quickly to understand its ideas.

Then tell the author: What was defined? What class does it belong to and how is it different from other elements in its class?

What are your first impressions about the idea being defined?

In what ways was the essay enlightening and entertaining?

Read the piece again. Tell the author:

What is the main point? What is the dominant impression? What stands out the most about this word/concept? How did you see the word/phrase in a new light? How is it different from other similar ideas? How does this definition help you? How might you be able to use this definition in the future?

Consider to Keep:

How has what you as the reader already know, or think you know about the word/term been considered and addressed? How have popular misconceptions been addressed?

What particular experiences/examples/metaphors/visuals, etc. helped you understand the term? What counterexamples helped you differentiate the idea from similar ones in the same class?

Consider to Change/Move/Add:

What clarification do you still need? What experiences/examples/metaphors/visuals, etc. might help you better understand the term and how it is differentiated from other similar ideas?

Consider to Delete:

What is unnecessary in the paper? What words, phrases, or ideas are repeated unnecessarily, or “pad” rather than “add” to the definition.

The use of such guides reinforce good collaboration and good peer editing advice, and helps students to internalize the questions and moves they should be making when self-editing.

Final-Draft composing of Definition

This is the time to turn attention to local level details, polishing the draft for final submission, public sharing, and perhaps even electronic archiving! (MARGIN: CCSS Writing 7; Speaking and Listening Standards) As suggested by Smagorinsky, et al (2010), explanations of how examples meet criteria is often a weak point in student definitions. So, to focus attention on this move, students can be given mini- language lessons (MARGIN: LESSON) on terms that introduce explanations such as: because, or synonyms such as due to, owing to, in light of, following from, whereas, since, for the reason that, etc. – and then asked to practice writing explanations using these terms in the context of their writing.

EXPLANATION EXHIBIT- MODELING – I'll show you how

Criterion: An effective leader is proactive versus reactive.

Example: Coach Jones prepared his team to play offense against a full court press, even though he wasn't sure they would have to.

Explanation: *In light of the fact* that he thought there was a possibility that his team might face a full court press, Coach Jones decided to prepare them for this instead of waiting and having to react if it did happen. This kind of preparation meets the criterion for proactivity.

EXPLANATION EXHIBIT -MENTORING – Now you fill in the blanks

Criterion: An effective leader acts in the interests of those s/he is leading.

Example: President Obama has suggested higher taxes for the rich even though he is wealthy himself.

Explanation: (use your causal transition here) (explanation here)

(based on Smagorinsky, et al, 2010) (MARGIN: CCSS Writing 4, Reading 4, 5)

After a couple of such turns, peer editors should be able to identify places in a paper where explanations are adequate, and where they have not been provided or are not clearly connecting the example to the criterion. Then the activity becomes embedded in the student's own writing.

(MARGIN: CCSS Writing 4 and 5, Peer editing meets Speaking and Listening standards, collaboration)

Composing to Transfer Knowledge about Definition

As always, the use of daily practice and reflections, of exit tickets and other formative assessments, are kinds of composing to transfer because they can inform the critical reading and composing of definitions throughout students' academic careers and lives. So do the criteria guides, planning guides, and peer editing guides that students create and use.

Composing to transfer occurs when students rearticulate heuristics; general purposes, principles and moves; situations in which they could use definition in the future, in school and home. We particularly like to have students compose a **process analysis** of how they completed their definition, along with descriptions of challenges and how they met them, and how they will use what they have learned in the future (see Chapter 8 for more on this). If they experienced trouble they could not overcome and describe this, then we have feedback about what students might need more practice on right now or in the future.

We often find that the process analyses are more useful to our understanding of student understanding than the compositions themselves. We often have students read the process analyses from others in their learning group, and then write a group memo of advice (MARGIN: LESSON IDEA) to us about what to keep, add and do differently in our future teaching. This involves the students in real world research and data analysis with an immediate benefit to future students in our school. (MARGIN: CCSS Writing standards 7-9). Reading these process analyses ourselves and looking across cases to see patterns is a form of teacher research and reflection that helps us improve our own future teaching as we continually learn from our students how to teach them more effectively.

Chapter 10
Comparing and Contrasting:
But What's the Difference?

Jeff's in Canada, doing some work in Victoria on Vancouver Island, as he drafts the intros to several of these chapters. In today's *Globe and Mail* the cover article is about the crash of a Russian plane that killed all of the players on a professional hockey team. The first several pages are nothing but coverage of this tragic event. Whenever Jeff reads a Canadian newspaper, he immediately begins making comparisons to American news coverage, perspectives, attitudes and the like. In this case, he's wondering how much coverage this event is getting in the U.S., which is much less hockey-crazed than Canada, the home of ice hockey.

After reading a series of articles on the hockey tragedy, he turned to a feature Jeff enjoys called "Lives Lived" that does a full obituary of an ordinary Canadian. Today's is about a lifelong elementary school teacher. When reading this feature, Jeff can't help but compare the eulogy to other seemingly normal but heroic people he knows or has known, particularly teachers.

Sometimes a reader doesn't have to do comparison/contrast work on his or her own. The paper also offers stories that make comparisons and contrasts explicit. The business page has a major feature comparing the Canadian and U.S. economies and their economic policies. Articles in the Life section includes a study comparing the attention spans, attitudes, and achievement of students who get less than 6 hours of sleep a night to those who get 9 or more. Another article compares medical school education that begins on day one with seeing actual patients to more traditional education that starts with two years of information gathering. (Guess what? The inquiry approach that provides a context of real hands-on learning and application is greatly superior to the decontextualized book learning approach.)

As we're revising this chapter, it's the holiday season, and Michael's department just had its annual holiday party. Michael finished a disappointing second in the holiday tie competition but he led the talent competition with his parody of "My Favorite Things." (One verse: Department meetings that go on and on/Reading Vygotsky, though he is long gone/Responding to emails/That each hour brings/These are a few professorial things.) No voting is possible without comparing and contrasting. Later Michael went out Christmas shopping for his wife and before he settled on the gold bracelet he bought her he had to make lots of comparisons: 18 carat or 14 carat? Bangle, cuff, or link? He drove there with his daughter Catherine who is a big rap fan. Michael was horrified by some of the lyrics and Catherine responded by comparing and contrasting what he heard to the lyrics of heavy-metal music.

Comparison and contrast is on full display every winter for baseball fans, like Jim, who wakes up every morning to see which player has been signed by which team. Baseball fans read statistic after statistic comparing players not only on their performance, but also by the salary they make. As a fan, we want to know how adding one player helps one team versus another team, and how that additional salary affects who else may or may not be added to the team. In other words, the comparisons are layered, and the reader of any baseball blog during free agency is likely to see statistics and salaries for teams and for players being compared daily (or even more often than that).

Why Comparison and Contrast Matters

Just sayin': explicit and implicit comparisons fill our lives. It's one of the primary ways we think and make meaning. Think of the work that practitioners do in the disciplines. In this morning's *New York Times*, economist Paul Krugman contrasted Keynesian economics with that of the Austrian school. And yesterday physicist Brian Greene wrote about how the work of physics is comparing theoretical models to the data gleaned from the Large Hadron Collider. (On a more personal note, he compared his excitement about the possible discovery of the Higgs particle to his amazement at discovering in his teens "that mathematical symbols scratched in pencil on a piece of paper could describe things that actually happened in the real world" (December 15, 2011, p. A33), a discovery that began his life-long love affair with physics.

And think of our lives: we learn by comparing the familiar to the new and unknown; we come to terms with new situations and challenges informed by how these seem similar and different from our past experience; we use the "past made present" to think through current situations and the "past and present made future" to imaginatively rehearse for upcoming challenges (Wilhelm & Novak, 2011). It's beyond question that it's crucially important for our students to be able to compare and contrast.

Unit Idea: What Influences Us? (MARGIN: UNIT IDEA)

Composing to Plan for Comparison/Contrast

For the purposes of this chapter, we are going to focus on a unit of instruction that addresses the essential question: What influences us? This was a subquestion that we used to lead to a larger essential question: What is most influential/powerful? These questions create a context that requires and rewards comparing. Another framing of this question could be: How do we decide and choose? These essential questions lead in many directions at the unit or lesson level, and can be used with individual stories to explore questions such as: Which character/force/idea is most powerful? Which setting/idea/force/argument is most influential? etc.

As we've discussed, the best way to encourage our students to develop any skill is to create an inquiry environment that foregrounds purposeful learning for functional results. In the last chapter, the unit we described was framed with the question: What makes an effective leader? This could be reframed as "Does leadership change based on time or place?" and would require comparison.

Any inquiry framed with an essential question involving ranking will involve comparison: What is the most powerful chemical? Who is the greatest military leader? What are the most significant animal adaptations? What were the most important mathematical insights/scientific discoveries? Greatest love poems/movies/buildings? Greatest athletes/basketball players/baseball players? Most innovative musicians/ artists/dancers? Most memorable villains? Most influential artworks? Most influential speeches/political initiatives/military campaigns/covert operations? (MARGIN: UNIT IDEAS)

Another way to create meaningful contexts for learning is to identify, during the first few days of a unit, (MARGIN: LESSON/UNIT PLANNING IDEAS) compelling culminating projects that will require comparing and contrasting. In this case, we decided that we would compare and contrast the various influences on particular personal and historical (or current event) decisions that are related in some way. Then, we could pursue our choice of three comparisons: of the influences on a personal decision, on a historical or current event decision, or on how the personal and historical influences were similar and different.

During our most recent teaching of the unit, we read *Julius Caesar* as a class, and most of the students compared the influences on a character in that play to the influences in a situation they had experienced in their own life.

Comparisons depend on describing and defining and often on listing and naming. They can involve multiple subjects, but sometimes they involve only two. Comparison, like any thought pattern, can serve as a substructure of a longer piece—a sentence, paragraph, section, chapter or complete text. (MARGIN: CCSS Reading Anchor Standard #5) It can also, like any thought pattern, become a text structure or superstructure that organizes a whole piece. Comparison works to effectively develop ideas in other kinds of informational writing like description or defining, as well as in narrative, poetry, or argument. (MARGIN: CCSS Reading Standard #7 for Literary and Informational Texts at any grade level (all the way back to kindergarten where this is done “with support”))

As we’ve noted in previous chapters, **think alouds** (MARGIN: LESSON IDEA) are always a great way to model a thought pattern, text structure, strategy or any other process that might be new or challenging to students. In a think aloud, you think through a reading, problem-solving, or performance process, in effect taking off the top of your head to make your thinking and decision making processes and responses to the text visible and available to others.

Think alouds can be spoken out loud, e.g. when a teacher is modeling how to read or write a particular kind of text structure or use a particular strategy, or they can be recorded or written, e.g. when students record their reading “moves” when reading a text. Many other options abound, like using sticky notes to post thoughts and responses throughout a text or recording response on a notebook page that is set next to a page of reading. (See Wilhelm, 2001/2012 for a book length treatment of using think alouds to teach various strategies and text structures)

Once a month, Jeff participates in a movie club with some high school students. They pick a movie they want to see, go view it, then meet afterwards to discuss the film. Choosing the monthly film involves comparing/contrasting. Typically Jeff has a movie he wants to see and the students have one or two different ones that they favor. The group compares the movies and makes a decision based on their articulated purposes of sharing a meaningful experience, enjoying themselves and having something substantive to talk about afterwards. In fact, they begin their selection process by reviewing their purposes in seeing a movie.

Doing a think aloud, in this case of comparing two movies, is a great way to introduce students to any thought pattern and its crux moves. *The crux move of a think aloud is to name the crux moves as you make them!*

Kids make choices all the time: what to wear, what to eat for breakfast, what video games to play or books to read, what classes to register for, who to choose for fantasy baseball, what friends to invite to a party, who to vote for, what lunch to purchase, and what movie to go see on a Friday night. All choices involve comparing and contrasting.

Recently the two choices under consideration for movie club were Werner Herzog’s *Cave of Forgotten Dreams* and the animated feature *Puss in Boots*. The group had a lively discussion before deciding on *Cave of Forgotten Dreams* (incidentally Jeff’s preference). Jeff later did a think aloud of their decision making process to model how they used comparison contrast. (MARGIN: LESSON IDEA)

Jeff was sure to cover the following points in his think aloud:

1. The club had designated a night to see a movie and they had to choose one. They reviewed their purposes for movie club viewing and the following discussion. This is the first step in comparing: *Identify a purpose for comparing.*
2. We identified two movies that we most wanted to see and these were Werner Herzog's *Cave of Forgotten Dreams* and *Puss in Boots*. Both were playing at movie theaters close to the school, which was important since we had to walk there. We wanted to choose the one that would be most interesting, that most of us would enjoy and learn something from, and that would give us the most interesting material to talk about afterwards. The group had a reason to compare because we had an immediate choice to make. This is another crux move: *Identify at least two things worth comparing (because you have an important choice/decision to make; something important to understand or evaluate) and be able to say why these are worth comparing at this time and situation.*
3. We agreed that we would talk to people who had seen either of the movies, and that we would watch trailers and read reviews from various sources. This is a third necessary move: *Gather data about the items or issues to be compared so you can operate from a rich base of knowledge.* (MARGIN: CCSS Writing Anchor Standard #8)
4. The group brought in their research and grouped interesting points they wanted considered under various headings like genre, topic, reviews, special features, special considerations, directors, length, etc.: *Identify meaningful points of comparison/contrast related to the purpose.* (MARGIN: Points of contact are included in CCSS Reading Anchor Standard #3, #5, #6 and #9)
5. *We then ranked/prioritized the points of comparison:* In order of importance, we listed: Genre, Topic, Rating, Special Considerations, Reviews, Special features, Length. Many other items were put into the category of special considerations or left off the list as not that important. We put topic, genre and rating first because we had agreed that we would not see certain kinds of movies (like horror) and would not see movies with a rating that might upset parents (R). So the first three criteria were necessary to meet before proceeding. Special considerations came next because this basically covered why the movie grabbed us. We ended up putting info about the directors here. We then looked at reviews and ratings from sites like Rotten Tomatoes because we wanted to get a sense of what the critics thought to make sure we were not seeing a dud. Special features was a consideration, and so was length – but only because we wanted to have time afterwards to talk.
6. Next we had to make two crux moves: *Decide how to present the points and describe and characterize each point of comparison for each item.* We decided to present all the points for *Puss in Boots* first, in order of importance, then all the points for *Cave* in the same order, to achieve a parallel structure. We chose to do *Puss* first because most people already favored *Puss* and we knew that the last thing you present is the privileged position and we wanted to give *Cave* fair consideration. We considered doing one characteristic from *Puss* then the same characteristic from *Cave* but we thought it might be harder to keep the two movies straight.

Puss in Boots:

Genre: Animated Action and Adventure, prequel to Shrek movies, involves lots of fairy tale and nursery rhyme figures

Topic: The backstory/origin story of Puss and what adventures he undertook prior to meeting Shrek

Rating: PG

Special Considerations: Director Chris Miller. Most highly rated movie was *Shrek 2*. Has directed lots of duds like *Police Academy 4*; seems to specialize in sequels.

Reviews: consistent 3 to 4 stars, repeatedly called solid family-friendly entertainment

Special Features/recommendations: 3-D, animated, Antonio Banderas gets rave reviews for his voice work, funny

Length: 90 minutes

Cave of Forgotten Dreams:

Genre: documentary

Topic: displays oldest known pictorial creations- the beginning of art? Artistic creation, the nature of time

Rating: G

Special considerations: Exclusive access to the cave and its 32,000 year old paintings that are in perfect condition. Supposedly needs to be seen on big screen. Very difficult filming conditions. Delivers a “one-of-a-kind art-history lesson”, super famous director who is pretty mischevious and counter-cultural, quirky and unique.

Reviews: solid 4 to 5 stars

Special Features/recommendations: Groundbreaking content, 3-D, Uses the latest in cinematic technology to show how the art uses the contours of the cave for effect.

Length: 90 minutes

7. The major points were bulleted and put onto charts. These were hung up next to each other to form a T-chart. We made sure to have comparable points across from each other on the chart. This is a further crux move: *Use appropriate graphic organizers to placeholder data so it is organized and can be analyzed.*
8. The final crux move is to *make value judgments and some kind of conclusion or choice* based on those judgments.

Value Judgment on *Puss*: Probably the kind of movie you would watch at home with your family. Lots of opportunities to see it outside of our club meeting. Probably would not lead to substantive discussion about content, form, cinematography, etc.

Value judgment on *Cave*: This should give us a lot to talk about as far as content (man's urge to create art), process (the filming itself and the construction of the film), form (the flipping back and forth from the cave to interviews), the director (who is a narrator/character). This sounds like a unique kind of cinema.

Decision: Ok, we will go see *Cave of Forgotten Dreams* and we will be happy about it.

Afterwards we highlighted the major moves of the comparison/contrast process and put them on an anchor chart, agreeing to update the chart as needed to guide our work and to provide the basis for a final rubric:

- Identify a purpose for comparing. (MARGIN: CCSS Writing Anchor Standards #4 and #10 name purpose)
- Identify at least two things worth comparing (because you have an important choice/decision to make; something important to understand or evaluate) and be able to say why these are worth comparing at this time and situation (MARGIN: CCSS Writing Anchor Standard #2)
- Gather data about the items or issues to be compared so you can operate from knowledge. (MARGIN: CCSS Writing Anchor Standard #8)
- Identify meaningful points of comparison/contrast related to the purpose (MARGIN: CCSS Reading Anchor Standards #3, #5, #6 and #9)
- Rank/prioritize the points of comparison
- Decide how to present the points, and describe and characterize each point of comparison for each item. (MARGIN: CCSS Writing Standard #4 at any grade level and Speaking and Listening Standard #4)
- Use appropriate graphic organizers to placehold data so it is organized and can be analyzed. (margin: CCSS Speaking and Listening Standard #5)
- Make value judgments and some kind of conclusion or choice

Once Jeff had shared the result of the think aloud, (MARGIN: CCSS Speaking and Listening Standard #5) the class connected the think aloud activity to our essential question: What influences us? We discussed what in the thinking process influenced the final decision and why that was. How might the influences be different in different situations? Might there have been influences not mentioned in the think aloud, like Jeff's preference? This activity was a kind of composing to transfer that placeheld ideas about influence and about comparison/contrast. (MARGIN: Throughout the activity, we met CCSS anchor standards for reading, 1-3; 5 and 6.)

For homework the students were asked to consider some times that we compare in our daily lives. The next day the class did a group think-aloud of a couple such comparisons (what to have for breakfast or whether to eat breakfast!), and considered what in the think aloud was most influential on their ultimate conclusion. (MARGIN: This reinforced CCSS writing standards 2 and 7.)

To further develop knowledge of purpose and context through composing to plan, we asked students to brainstorm all the purposes (MARGIN: LESSON IDEA) for comparing that they could, both in our personal lives and in the disciplines. The previous activities clearly helped to frontload this activity. Here's what the class came up with:

- to make a decision – decide which one is better. Like a horse race
- to help you see that despite differences, there are these similarities (useful for healing, negotiation)
- to see that despite similarities, there are these differences (useful for slicing things finely, seeing beyond the surface)
- to persuade someone else about these prior reasons
- to evaluate – compare to a rubric/standards
- to achieve status – differentiates self/ crowds
- to highlight and placeholder key details, see patterns, create new insights
- to show difference over time
- to discover and to problem-solve: figure out difference between animal and plant cell structure
- to understand subtext and implied comparisons (juxtapositions, irony)
- to identify procedural differences: dealing with single vs. multiple variable equations- show equations side by side
- to see multiple perspectives to understand and analyze why and how differences matter

You certainly don't need such an exhaustive list. But composing such a list shows the wide variety of work comparing/contrasting can do personally and in the disciplines (MARGIN: and meets CCSS writing standards 2, 5 and 7). Such an activity also precludes the ancient and persistent questions: Why in the heck do we have to learn this stuff? When are we ever going to use it? The students have already answered these questions for themselves!

Composing to Practice Comparison/Contrast

So how do we get the stuff to write a comparison/contrast about a particular topic? And how do we shape that stuff into a comparison/contrast? This is what we focus on through composing to practice.

We find that conceptual frontloading is a great way to not only activate prior student background that is relevant to the unit inquiry, but to build on it because other students will offer different data and perspectives. The frontloading also is motivating, forging personal connections to the inquiry, and connections from the inquiry back to the world. Finally, frontloading always serves as formative assessment and can provide a template that can be returned to throughout the inquiry, e.g. students can use a frontloading activities like opinionnaire that follows in a variety of ways throughout a unit (e.g. taking the survey as an author or character),(MARGIN: CCSS focus on multiple perspectives. One of the characteristics of College and Career Readiness (in the Introduction, page 7)

Following the principle to start with student experience, we began the conceptual frontloading about influence with this activity.

Sentence Completions: (MARGIN: LESSON IDEA) Complete these sentences in any way that rings true for you:

1. I feel influential when _____
2. I feel influenced when _____
3. People with influence should _____
4. People being oppressed by outside influences should _____
5. I'm most influential when _____
6. I'm least influential when _____
7. The most influential person/idea/force is _____
8. The least powerful person/idea/force is _____

Autobiographical Writing (MARGIN: LESSON IDEA): Write a journal entry about a time when you felt influential and/or persuasive:

And/Or

Write a journal entry about a time when you felt persuaded or oppressed by a person or group more influential than you:

Reflection: What do you think persuasion has to do with influence and power?

We moved next from student experience to the wider world of influence, and introduced the notion of comparisons of ideas with which we thought they would have some familiarity.

Opinionaire on Influence (MARGIN: LESSON IDEA)

Check the group or individual in each pair who you think is the most influential. Be prepared to justify your answer:

___ The President OR ___ Bill Gates

___ Pitcher OR ___ Batter

___ Player OR ___ Referee

___ Women OR ___ Men

___ Actor OR ___ Script

___ Parent OR ___ You

___ Email OR ___ Snail Mail

___ Republicans OR ___ Democrats

___ President of the Student Body OR ___ Editor of the School Newspaper

___ Friends OR ___ Family

___ Musician OR ___ Record Company

___ Internet OR ___ TV

___ Athlete OR ___ Coach

___ Love OR ___ Hate

___ Police Officer OR ___ Judge

___ Comedian OR ___ Politician

___ Armed Forces OR ___ Congress

___ Supreme Court OR ___ Congress

___ Paintings OR ___ Photographs

___ Poetry OR ___ Music

___ Individuals OR ___ Groups

Think of some other comparisons between influential people, ideas or forces that you could pose to your classmates.

When they're done, students share answers to the choices they found most interesting. We then ask them to justify their answers to one or two of those choices with a short comparison paragraph that names aspects or techniques of exercising influence mentioned by both parties. (MARGIN: CCSS Writing Anchor Standard #10 (write for a variety of purposes and time frames)) Students then share their short compositions and identify the comparing "moves" they made and what effects this had on the thinking of the composer and the readers. (MARGIN: As they compose and read each other's texts, they are meeting CCSS writing standard 2, 4 and part of 5; reading standards 1, 2 and an overview of 4-6 on craft and structure, 9 and 10.)

You certainly don't need to do all of these frontloading activities, though we did and found this useful with lots of payoffs throughout the unit. These particular activities are flexible. The activities can be used for different kinds of units framed by different questions like: How far are you willing to go to get what you want? This frontloading can lead into a deepened reading of *Macbeth* or any other text about influence or power or persuasion. And of course sentence completion, autobiographical writing and opinionnaires are general frontloading techniques that that can be adapted to any unit.

These activities built not only declarative knowledge, but involved students in procedural knowledge of substance and form as they were already engaged in producing and shaping material they could use in their thinking and composing throughout the unit. (MARGIN: FOR MORE INFO OF 5 KINDS, SEE CH. 3)

At the end of these activities, we asked the students to choose a significant experience in their lives when they were influenced in their decision-making or behavior. Their next task: to find a current event or historical event where influences on decision-making and action played out in a comparable way.

Focusing on substance

As we further practiced and developed our skills in producing substance, we pursued these big heuristic questions for procedural knowledge of substance, applicable to the production of any text structure:

- Where can I find the data (for my comparison); what data sources are available to me?
- How can I extract the data? What do I have to do to make it available to me?

As students pursued the answers to these questions, notice how they are learning to be researchers – another major thrust of CCSS. (MARGIN: CCSS focus on research One of the five “Key Design Considerations” defined in the Introduction (page 4))

Here’s what a group of seventh graders came up with when we asked them how to get the stuff necessary to comparing various skateboards. In parentheses, we’ve put the research technique from disciplinary knowledge making that mirrors each student response:

- Think about my own experience (autobiographical research/narrative inquiry)
- *Interview with informants/experts (ethnographic interviewing)
- Read – Thrasher, thrasher.com, Tony Hawk’s biography, Consumer Reports (background reading/literature review)
- *Internet research: Thrasher.com, Consumer Reports (background reading/literature review)
- Experimentation – test driving different skateboards (experimentation – data collection)
- Visit visual museum of skateboard development and take notes (artifact study and notetaking)
- Watch movies like *Dog Town*, *Z boys*, etc. (artifact study)
- Go to the skateboard park, observe, talk to skaters (ethnographic observation, participant observation and notetaking)
- Watch skateboard demos – take data down (ethnographic observation/artifact study and notetaking)
- Look at current data sets: look for patterns (secondary research; literature review; data analysis to infer patterns, extrapolate, interpolate)

This seems like a pretty good list. We’re not sure how watching *Dog Town* or *Z Boys* would help with the research, but we’ll let that go! Notice how the students themselves have suggested what kinds of data-gathering research processes (MARGIN: CCSS Writing Anchor Standard #8) you could teach them in this context that they could then use throughout their lives.

You can’t and wouldn’t want to teach kids everything on this list, but you should certainly pick one or two items and teach them and support their use in the context of student data gathering. The teaching would be situated and what is learned would immediately be used. These research techniques will be helpful in the unit at hand, and throughout student lives. The list

also shows how teaching enabling strategies for producing substance helps students to take on the role of researchers and to engage in real research. (MARGIN: Meets CCSS standards 7-9 for writing, on research to build and present knowledge)

In our influence unit, students learned to do Boolean searches on the Internet, found and read about current and historical events with comparable influences to a designated personal event, watched videos, found and conducted an interview with an expert on the event (usually conducted electronically), and learned how to take notes to record their findings.

Focusing on Form

Composing to practice also involves shaping data, including the data we are gathering through our investigations, activities and readings. These are the heuristic questions we asked about procedural knowledge of form:

- *What do we need to do to boil down and form the stuff into a coherent and compelling comparison/contrast?
- *How do we choose what stuff to use? What stuff tells “*the*” story?
- *How do we shape the stuff in a form our audience can understand?

Here’s what our seventh graders had to say. Remember that they had done the composing to plan and conceptual frontloading activities that clearly helped them a lot here.

- Figure out what is comparable/what is worth comparing (in the context of this inquiry or task)
- Identify key features and corresponding features of the things you are comparing (like Cost, Performance)
- Differentiate between fact (Wide agreement among experts) and opinion (individual thinking) – (judging reliability and consistency of data)
- Rank importance of features (prioritizing, selecting data that is best at telling the story or making the case)
- Analyze differences and similarities and consequences of each of these (data analysis)
- Use Venn Diagram or SFAs or T-charts to display data and make sure it’s the appropriate way to display that kind of data given your purpose (data display)
- Consider your audience and what evidence is going to convince them (considering rhetorical stance)
- *Present data through the block method: XXX – YYY or point by point method: XYXYXY (data display and representation)
- *Present similarities then differences, or differences, then similarities
- Make a judgment and explain/justify it in ways that you think will convince your audience (rhetorical stance)

(MARGIN: CCSS standard 4 on writing, emphasis on rhetorical stance; standards 7-9 on research to build and present knowledge)

Practice: How do we now teach them to use these procedures?

These two brainstorming activities that we've just described served as a great formative assessment and showed that the students were totally on track.

Following are some practice techniques to help students to master these **crux moves** of comparison: to identify meaningful points of comparison/contrast related to the purpose; rank/prioritize the points of comparison; describe and characterize the points of comparison, and decide how to present the points. (MARGIN: LESSON IDEA)

Students start in groups identifying two things they all know a lot about – local bands, pizza parlors, video games, teachers, two stores of the same type, two authors, two influences (like friends and parents), etc. We next ask them to list points of comparison, prioritize the importance of these for a particular audience, and describe the important points of comparison for that audience and for the work they want to do. Students could then switch the audience from other students to parents, or from football players to cross country runners and rewrite the description of some of the points to be more friendly and communicative to that audience. Given the unit at hand, they can discuss why the revision would be more “*influential*” with this audience than the first draft, thereby developing more conceptual knowledge regarding the inquiry.

Here's a more advanced activity that requires more research and looking at the data from multiple perspectives. (MARGIN: LESSON IDEA) After reading about two characters or doing research about two related items, students work in pairs to identify the similarities and differences on a T-chart, rank these points on a scale of importance (the scale should be tied to a specific purpose related to the unit, like who is most influential, the best friend, etc.). Next the pairs engage in a page of in-role writing for each character (or force or idea) writing both pieces together, or each writing from one separate role, in the form of a diary, speech, dialogue, or interaction around a specific problem. Students should take care that language, action, tone, attitude as well as content reveals character. The two pieces should be roughly parallel so similarities and differences are apparent.

Another technique that develops these same capacities in a multimodal form (MARGIN: meeting CCSS emphasis on multiple modalities; CCSS Writing Standard #6 at any grade level) is the drama/action strategy (Wilhelm, 2003/2012) of BEST/WORST or GOOD/POOR TABLEAUX .

Tableaux: Tableau is derived from the French word for visual presentation. Tableaux help students visualize and explore both the text and the subtext of a narrative, including setting, scenes, situations, characters, relationships, and meanings. Using this technique, students can ALSO represent vocabulary and create mental models of complex concepts and procedures.

In a tableau, students work together to create a visual picture with their bodies. Generally a tableau involves 4-5 students depicting a scene with the arrangement of their bodies. The technique is often called frozen statue. Variations allow students to interact then freeze, or be unfrozen to speak. Another variation is to draw the tableau as a visual presentation (Wilhelm, 2003/2012).

In the best/worst or good/poor tableaux variation (MARGIN: LESSON IDEA), students work in their groups to identify the important points of comparison they want to portray, then brainstorm how to best portray them through a short action sequence, if they choose, and then through the static positioning of their bodies. They should consider how to portray or at least explain a value judgment based on the comparison.

Students could depict a character or historical figure engaged in a respectfully persuasive influence and then do a contrasting tableaux where the influence is less respectful and more coercive. Scenes could be made up or come from their reading and research for their culminating project. Likewise students could predict best and worst possible results from certain situations or actions. (MARGIN: CCSS Reading Standards for Literacy in History/Social Studies #3, #6 and #9) Students should take care that they cover the important points, present them in roughly parallel fashion, and imply some kind of value judgment.

If students are unfamiliar with the tableaux technique, then we model the creation of one with a group of students, thinking aloud about our problem solving process. After modeling this once, we have found that students become quite adept at using the technique independently, though we still mill about to provide guidance and challenges to them as they plan and rehearse their tableaux.

Another drama technique that uses comparison and multiple perspectives is a kind of hotseat called Good angel/Bad angel (MARGIN: LESSON IDEA) (Wilhelm, 2003/2012) where a character is advised from two different perspectives, one operating in her selfless interest and one to her detriment. Again, students can be asked to make sure that the presentations of the two angels are parallel and cover important points from each perspective. Afterwards students can compare and contrast what the two different groups had to say, how they said it, devices used, which points and techniques seemed to be most influential, etc.

Hotseating: (MARGIN: LESSON IDEA) Hotseating intensifies role-playing by putting a student/s ‘on the spot’ so they can be addressed, advised, interviewed, and questioned in role as a character, force or idea by a forum of students also in role, as journalists, other characters or interested parties, et al. This technique helps students improve their ability to analyze characters, infer, elaborate and think on their feet. (MARGIN: CCSS Reading Anchor Standard #3) A “life line” group can assist the person or people on the hotseat, as needed. (MARGIN: CCSS Speaking and Listening Anchor #1, 4 and 5)

In each of these activities students are engaged in the same process: identifying meaningful points of comparison/contrast related to a specific purpose; ranking/prioritizing the points of comparison; describing and characterizing points of comparison for a particular audience, and deciding how to present the points. (MARGIN: you may notice that we are citing many of the same CCSS Standards for different activities. This is the beauty of having “fewer” standards—it offers the opportunity to transfer those skills to new and different situations for multiple exposures in different contexts.)

Ranking activities (MARGIN: LESSON IDEA)

Ranking activities are excellent to develop capacity in identifying key features and corresponding features of the things you are comparing, for ranking the importance of different features, for analyzing differences and similarities and consequences of these, and for making value judgments.

Jeff has edited a series of books for students that involve such rankings called THE TEN (Scholastic publishers), which involves top ten rankings in a variety of subject areas. Most of these books were written by teachers during inquiries undertaken with students. In many cases, the students were involved in the writing of the books. Even if you are not writing for publication, the process is fun and engaging for students.

Several titles that fit with the inquiry of “What is most influential?” include: *THE TEN Most inspiring Canadians*, *Greatest Hoaxes*, *Hottest fashion trends*, *Greatest Trailblazers*, *Most Significant Conflicts*, *Influential Artworks*, *Influential*

Leaders, Most Essential Chemical Messengers, Most Influential Speeches, Most Destructive Ecosystem Invaders, Most Revolutionary Songs, Most Innovative Bands, Most Gripping War Stories, Most Destructive Inventions (Samples of all books are available at

<http://www.the10books.com/canada/> and can be ordered through Scholastic Canada or USA).

The ranking process can begin by providing students with material about two or three influential bands, influential speeches, etc. and asking them to work in groups to read the material, put it into a comparative format, perhaps by using T-charts, Venn diagrams or Semantic Feature Analyses, that will allow them to make a value judgment about which one is most influential.

The short performance tasks for the CCSS assessments Smarter Balanced and PARCC tests (MARGIN: CCSS ASSESSMENTS) currently require individual writing with data that is provided to the student. The short and longer performance tasks also involve collaborative writing. The longer tasks involve multimodal presentations of findings. Both short and long performance tasks require students to reflect on the process they went through to complete the task, and to justify that process. The activities presented here will prepare students for these kinds of sophisticated assessments.

We've experienced success engaging students in this same process: presenting kids with data from *Consumer Reports* and other resources and asking them to do comparison shopping of a particular item like a cell phone, computer, etc. (see Smith, Wilhelm and Fredriksen, 2012 for more on this). We've also had good luck providing statistics about baseball or basketball players, or teams, and asking students to determine which one was the greatest. We've also provided data about recording artists/groups and asked who is most innovative, influential, significant, etc. Providing students with the data makes the task easier for students, and helps them focus on the process of comparing and the use of crux moves. Providing the data also saves time and students can focus on practicing and mastering the crux moves before they are asked to find their own data and use the crux moves for operating on that data. (MARGIN: CCSS Writing Anchor Standard #9)

If students need still more practice and support, these activities could be followed by a more independent activity asking students to brainstorm a top ten list of some kind. If the list fits the inquiry topic at hand (like the ones above would fit an inquiry about influence) then that's all the better – knowledge of substance and form will be developed together. Then groups can be asked to collect their own data about two or three of the subjects according to particular standards, e.g. If researching bands, they could be asked to visit the band's official website and three independent sources.

We typically conclude the composing to practice phase of any unit with some forms of collaborative writing. In this case we asked small groups of students to compare the two or three subjects they had been researching in regards to influence and come to a value judgment about which of the listed factors is most influential, e.g., to that's band's popularity. If you have time and inclination, students can present their work multimodally through presentation software. (MARGIN: CCSS emphasis on multimodal composing and presentation; Under Key Design Considerations in the introduction (page 4))

We've had students create magazine spreads such as those in THE TEN, or create a class book that ranked several items they have researched. This requires groups to read each others' writing and to agree on an overall ranking, then write a profile of one subject, comparing it to the one that is ranked before, and the one that is ranked after it.

Rhetorical Stance: Audience Consideration Activities (MARGIN: LESSON IDEAS)

As we've noted throughout this book, every act of informative writing involves categorization and is embedded in a meaningful context of use. Effective writers pay attention to that context, especially by considering the needs, interests and biases of their audience and how to address them.

One way to illustrate how audience consideration may affect a piece of writing is to engage students in comparing and contrasting pieces of writing that have a similar purpose but a different audience. (MARGIN: CCSS Reading Standard #9 grades 2-11/12)

We've used a Best of Bach Activity for just that purpose.

The Best of Bach activity reinforces much of the students' previous work on comparing and contrasting and adds issues of stance including audience consideration. (MARGIN: CCSS Reading Anchor Standard #6) The three sets of liner notes below are for three CDs that contain mostly the same music by J.S. Bach, packaged three different ways to appeal to different audiences. Students can be put into groups representing different audiences. Students can then discuss what they think each of these represented groups will look for in liner notes, and contrast this with the primary interests of the other groups. Likewise, students could take on the roles of the writer of each set of notes and explain their perceived audience, rhetorical choices made, comparing these to those of the other two sets of notes.

Possible audiences:

- Classical music aficionados/insiders
- High school musicians with an interest in expanding their musical tastes
- Parents interested in getting music for themselves and their teenage children
- Elevator company employees in charge of getting music for elevators and common areas in different buildings
- Readers evaluating the writing samples according to the standards of the new CCSS writing test
- English teachers
- Music teachers
- Social studies teachers

After reading the notes, the small groups of students are asked to compare and contrast the three sets of liners, and then to decide which one would appeal most to each of the audiences and to explain why.

CD Title: The Best of Bach

Classical music, to borrow a Madison Avenue term, has a bad image. Vast numbers of people believe it is only to be enjoyed by those who have been initiated into its mysteries; others are faintly uncomfortable in the society-page setting of symphony or opera house. Still others are frustrated by, or impatient with, a music which too often takes itself too damn seriously

It really needn't be that way. A pretty tune is a pretty tune, whether it's Lennon and McCartney's "Norwegian Wood" or Bach's "Sheep May Safely Graze". A tricky rhythm is exciting whether it be in the guitar riff of a Mississippi Delta bluesman or Debussy's "Golliwog Cakewalk". Interesting harmonies are moving and enriching, no matter who fashions them – the Mamas and the Papas' "Twelve-thirty" is musically as sound as Vivaldi's "Gloria".

Granted there are snobs on both sides of the dispute, including a host of people who should know better. Classical music is not something separate or just for rich people or something to be endured. About all it takes to enjoy classical music is a willingness to listen. Having decided to listen, perhaps while washing dishes or reading the latest *Sports Illustrated*, all you need to do is to let your mind wander. The music will conjure up images; it might even help you sort out emotions or events; it might tempt you to wonder and ponder what the composer had on his mind when he wrote the music. Or you might just get caught up in the music. You don't have to know that the Beatles' "Norwegian Wood" is in the mixolydian mode to enjoy it, do you? Then why in the heck should it be necessary to know the structure of the sonata format to enjoy Beethoven? If you are convinced, then you are ready to go. We've picked the best of Bach for you. The rest is up to you.

Bach: Cantatas No. 146 and Fugues

In the spirit of the "sacred concert", the cantata opens with an overture, which is nothing other than the first movement of the great D Minor clavier concerto. The solo part is here played on the organ, as indicated in the score and as Bach himself must have played it in St. Thomas church. It is the most magnificent of his concerto movements, music both deep and spectacular. A leaping germinal theme serves for the *tutti* and as an undercurrent to the solo passages. The episodes for the solo organ are increasingly rich and splendid, employing antiphonal counterpoint, cascading arpeggios, and long sustained pedal-points, to unfold the full powers of the instrument. Next comes the slow movement of the concerto, which was also an innovation for the concerto form in its deep almost tragic seriousness. It consists of a chaconne, with a ground bass, constantly reiterated but for interspersed episodes for the purpose of modulation . . .

Switched-On Bach

The prelude in E-Flat Major is an object lesson in how Bach touches an artistic convention with absolute genius. Psych! For three quarters of its length, it behaves like an "arpeggio" prelude, content to make its effect through the building momentum of its characteristic figure. It just keeps on keepin' on. Trucking! Then, just as it has reached an impressive climax, things go awry: The bottom voice seizes the floor for an impressive climax, the characteristic theme flies into a tail-spin, and a passionate recitative is required to restore order. Right on! You go, Bachster! The Fugue (which means "three voices") is notable for the long sixteenth-note scale passages that give it special urgency and passion. Passion! That is what Bach is all about, so tune the skull candy, the audio ornaments on the sides of your head, and listen for it. Just sayin'!

After a discussion of what the authors did and why they did so, students are ready to try making such rhetorical decisions for different audiences on their own. One way we give students practice making these rhetorical decisions is to have them write in-role in a dramatic situation and then to change the audience for that writing. Here's a situation that we've used (MARGIN: LESSON IDEA):

Super Students! You are going to write in role based on the following scenario: A student presents his teacher with a late paper. It's been previously stated by the teacher, on the syllabus and orally, that no late papers will be accepted and that in the event that a paper is late, that paper will get a failing grade. The student, however, feels justified in submitting the paper a day late because

s/he had two other papers due the same day, as well as a test, and the extra time allowed her/him to produce a much better paper and actually learn from completing it. The teacher is reluctant to change her policy or to make a one-time exception. But without such a move, the student's hard work will result in a failing grade and other negative consequences may follow, like a loss of motivation. Should the teacher's policy be changed or an exception be made?

Role 1: Write a letter to the teacher as though you are the student explaining why the late policy should be modified or abolished. In order to do so, you'll have to compare and contrast the results of the teacher's policy to the alternative policy solution you propose.

Role 2: Write a brief letter to students as though you were the teacher defending your policy to parents. In order to do so, you'll have to compare and contrast the results of the your policy to the to the results of possible alternatives.

After students have completed the letters we ask them to work together to compare the stylistic choices each writer made to reach his or her audience.

Composing to Draft Comparison/Contrast

We like for our students to create a complete rubric or set of analytic scales before they draft to remind and reinforce (MARGIN: LESSON IDEA) what they have learned about good comparison/contrast in regards to issues like: Substance, Organization/ development, Audience Consideration, Language Conventions and anything else they think is important to include. Websites like rubistar.com and others provide digital templates and models of rubrics.

We want to emphasize that we think it is important that students compose the rubric to demonstrate their own declarative knowledge of substance and form, or at least to have significant involvement in creating it whenever possible. The groundwork has been laid to identify and rank criteria, so all students have to do is flesh out user-friendly descriptions of each criterion.

If needed, you can model how to compose usable and understandable benchmark statements, then mentor the composition of one or two before having groups compose their own. By jigsawing the work, a class can quickly compose a complete rubric in less than a class period. And guess what: they are practicing specific descriptive writing. For example, an exemplary benchmark for Audience Consideration might look like this: "The writer has identified an appropriate audience and the writing addresses that audience's expectations and needs in specific ways such as content, explaining necessary terms, and tone. The tone helps to meet the purpose and get the necessary work done with this audience in ways that will enhance the readers' experience, enjoyment, and understanding, and these moves can be justified and explained."

Such a model can be discussed. Does everyone get it? Would a peer editor like an adult "keeper" get it? Is it usable? Could you point to sections of your paper and explain how the cited criteria are met, or not? If not, how can we revise the benchmark statement?

Benchmarks are where assessment rubber hits the road. If benchmarks, descriptions of actual accomplishment meeting a criterion, cannot be composed, then students don't have a clear declarative understanding of substance or form. And if they can be composed: well this is sufficient proof that students own the declarative knowledge. By meeting the benchmark and explaining how they do so, they show they have procedural understanding. We often tell the preservice teachers with whom we work: you don't have to make up tests – the world is filled with testing situations. And if students can perform the knowledge we teach them, then learning is displayed and demonstrated beyond all dispute.

Once we've worked with students to develop a rubric, we work with them on how to use it. In a procedure we call roundtable, we display a student volunteer's draft on the white board. (MARGIN: LESSON IDEA) We then model how we would read the paper to check it against the criteria and benchmarks, then mentor response by asking the class as a forum to help us respond to other features. This kind of modeling in what we call a revision workshop helps subsequent peer editing to go much more smoothly.

We next ask groups of four to do the same thing in peer editing groups. We model and mentor a spirit of helpfulness and emphasize that all are working to help everyone write the best possible paper.

More and more often, we use googledocs in peer groups, asking peer editors to note their suggestions as far as praise, moves, adds, deletes or changes on the "track changes" feature. (MARGIN: CCSS Writing Anchor Standards 4, 5 and #6 for collaborative use of technology)

Final Draft Composing of Comparison/Contrast

When our students compose using the comparison/contrast structure we know that they often need help both with how best to signal comparison and contrast without overusing a few pat transitional phrases like "In contrast," "on the other hand," "similarly" and the like and with how to punctuate those structures. As we've argued, we think it is important to choose one or two focal correction areas for the class (MARGIN: the vertical alignment of the CCSS Language Standards lend themselves to this—there are six specific focal areas at each grade level), and to teach everyone how to create these specific constructions and to proofread to correct them. In essence, we want students to inquire into how the construction works in the context of comparing. We also typically have individual students working on one or two individual focal areas. We find, though, if students have more than two or three areas to proofread for, that they give up on everything. It's simply cognitive overload.

It's a great idea to have students act as researchers into the how writers signal comparison and contrast. (MARGIN: CCSS Language Anchor Standard #2) For example, gamers might seek out a comparison of gaming systems like this one from *How Stuff Works* (<http://electronics.howstuffworks.com/video-game5.htm>, accessed December 16, 2011).

The [Xbox 360's](#) processor is a customized Power-PC based CPU from IBM. It has three symmetrical cores that run at 3.2 gigahertz (GHz) each. This processor has a lot of horsepower, but it lacks the Cell architecture of the PlayStation 3 design.

The [Nintendo Wii's](#) processor isn't quite as impressive. It's an IBM Broadway 729 megahertz (MHz) processor. While the chip isn't in the same league as its competitors, Nintendo executives say the processor is more than powerful enough to provide a fun gaming experience.

What are the choices the author makes? In these two short paragraphs the author makes three different choices, using a contrastive clause in a compound sentence (but it lacks. . .), using an contrastive subordinating clause (while the chip. . .), and making a direct comparison (... isn't quite as impressive).

Once students have collected examples, you can pose possible alternatives and have students rate their relative effectiveness. For example the ideas in "This processor has a lot of horsepower, but it lacks the Cell architecture of the PlayStation 3 design" could be written in a variety of ways:

- This processor has a lot of horsepower; however, it lacks the Cell architecture of the PlayStation 3 design.
- Although this processor has a lot of horsepower, it lacks the Cell architecture of the PlayStation 3 design.
- This processor has a lot of horsepower. On the other hand, it lacks the Cell architecture.
- This processor has a lot of horsepower, though it lacks the Cell architecture of the PlayStation 3 design.

As you write the alternatives, you could explain the punctuation conventions of each. Students could then discuss their preferences. No right or wrong answers here, but the rating task requires students to articulate their standards of judgment. (MARGIN: CCSS Language standards, Reading and Writing Anchor Standard 4)

With this preparation, groups of students could write multiple versions of sentences they collected and then the class or another learning group could do the same ranking exercises with their sentences. It wouldn't be long before they'd be ready to take a look at their drafts to make sure they are signaling comparison and contrast both effectively and correctly. And they will have developed a toolbox of alternatives to try out.

Phase 5: Composing to Transfer Knowledge of Comparison/Contrast

Throughout the unit, we ask students to engage in formative assessments: to compose exit and entrance tickets, and to journal continual assessments of how well they are progressing towards reaching the goals of writing their final compositions (We often ask students to self-evaluate their understanding with the designations: Still in harbor? Leaving harbor? Setting out to sea? On the High Seas? We then ask them to provide evidence of progress and designating personal improvement areas and requests for assistance needs.) (see Wilhelm, Wilhelm and Boas, 2008 for various extensions of this technique). (MARGIN: LESSON IDEA)

In this unit, we also had students write “reflective notes” throughout, (MARGIN: LESSON IDEA) an idea that comes from law school and consists of an exploration of a personal reaction to an issue that came up that was either conceptual and about the inquiry, or procedural and about writing in the comparison/contrast structure. We prompted students to write such notes at times when there were chances to compare personal situations to those in our readings, particularly in *Julius Caesar*.

At the end of the unit, we asked students to do a final reflective piece of writing. (MARGIN: This kind of reflection is part of all the Smarter Balanced Performance Tasks currently under review) For this unit, we asked students to consider the following questions, though they only needed to write about a few prompts of their own choice:

- What helped to shape your experience with the comparison/contrast structure?
- What have you learned from this experience and what helped you to learn it?
What was the personal meaning of this experience for you?
- What new insights did you gain?
- What future goals might you meet with what you have learned in this unit?
- What are some topics in your life or in our school and community that could be addressed through the comparison/contrast thought pattern?
- How do your “home funds of knowledge” compare to “school knowledge” in some particular area?

Gut Check: How are we doing with the CCSS?

Although we've been checking off how we are meeting the CCSS in the margins, let's summarize how we are doing. As far as the anchor standards for writing, we always necessarily nail standard 2 on writing informational texts. We hit 4, 5 and 6

for production and distribution of writing, particularly if we do some digital composing and work with GoogleDocs or other software platforms.

The inquiry itself constitutes an extended research project and the shorter research activities, like finding information about a local band, abound throughout the unit. So check off anchor standard 7. Students are constantly gathering relevant information from a variety of sources, and drawing evidence from these sources that supports analysis, reflection and research. Anchor standards 8 and 9? Check and check. Anchor standard 10 – nailed as well – the students have been writing every day – for research, for reflection (composing to transfer), for revision (drafting and finalizing).

What about the language standards? We’ve directly address standard 1 about conventions in our finalizing phase as well as CCSS Language standard #2. Our rhetorical stance activities were all about standard 3: “Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.”

We’ve met the vocabulary standards since vocabulary has been developed for the content of the inquiry about influence and power, and is developed to learn and describe the processes of comparing and contrasting, and is developed and used to compose sentence constructions and transitions useful in the inquiry.

As far as speaking and listening, students are discussing, creating, and presenting to each other in small groups on a daily basis, often multimodally.

Let’s turn to reading: we’ve done some close reading and made inferences from that reading (reading anchor standard 1) and hit the identification of major themes and their development fairly hard (reading standard 2). As far as Craft and Structure, we’ve hit standard 4 by considering word choice and tone in the stance activities.

Since we are exploring text structures in this book, we always solidly hit standard 5, and standard 6 is hammered by assessing persona, perspective and purpose and its effect on style also through the same rhetorical stance activities. Proceeding to Integration of Knowledge and Ideas, we’ve done some multimodal composing to hit standard 7, and rewritten texts and looked at how different texts about similar topics compare, e.g. in the Best of Bach activity, so standard 9 goes down. It all leads to meeting standard 10. Wow, we’ve done well. We have actualized multiple opportunities to meet each standard.

If you read through the Introduction of the Anchor standards, you’ll see we’ve hit some other priorities too: students have been helped to see from multiple perspectives, and have developed deep conceptual understanding of the inquiry topic; they’ve received assistance in multiple ways in learning to be researchers, and have been helped to develop audience awareness and other areas of expertise related to rhetorical stance.

In addition, the work here provides specific preparation for the short performance tasks in the drafts of the Smarter Balanced and PARCC tests currently posted on-line.

Not bad.

SEMANTIC FEATURE ANALYSIS Template

For organizing material, tracking data, teacher evaluation – this could be a figure – excellent for organizing data for comparing and contrasting.

TERMS FEATURES					

Chapter 11

Classification:

The Most Powerful Thought Pattern in the World?

Jeff, by his own admission, is not a particularly “clean” person, but he *is* organized. The refrigerator and pantry at home are carefully classified with a system his family must not completely understand (since they keep putting things away in the wrong places!). His clothes, books and files, skis and ski waxes and outdoor equipment: all classified.

During his recent trip to Canada, Jeff went to the British Columbia Museum of Natural History. The exhibits reflected a classification system: herpetology, ichthyology, mammalogy, etc. One of the guides, the resident herpetologist, explained that a large part of his job was preserving and classifying artifacts. He told the group that he maintains a warehouse full of specimens that he likened to “a library, organized according to a careful classification scheme, but it’s full of actual physical specimens instead of books.” Why? So specimens could be easily located, and so that patterns and evolutions amongst categories could be seen, studied and tested out.

Why Classification Matters

Modern science is all about classification – all the way from Aristotle to Linnaeus to the current day. The purpose of biological classification is to divide all living things into groups. This enables us to theorize about relationships among the groups. Classification, for instance, was vital to developing the theory of evolution.

The elegance and power of the biological system is that it divides all life into a series of ever-smaller groupings until the individual example is reached, e.g. human beings.

In the case of human beings, classes such as all of Life, Domain and Kingdom are followed by:

Phylum: Chordata

Subphylum: Vertebrata

Class: Mammalia

Subclass: Eutheria

Order: Primates

Family: Hominadae

Genus: Homo

Species: Sapiens

Obviously, this classification could continue to categorize human beings into constituent groups according to different bases, going all the way down to individual people, but proceeding this way would not answer biological questions. In contrast, the biological grouping does not answer sociological or anthropological questions that begin *not* with the universe of all living things, but with human beings. So human beings would be the starting point or “universe” for an anthropological or sociological classification. Your “universe” also determines what is considered to be an individual example: if the topic is kinds of living creatures, then individual species is the most specific case. If your universe is human beings, then individual people would be the most specific case. If your universe was an individual human being, then depending on your purpose for classifying (called the “basis”), ideas like personality traits, interests, affinity groups that the individual belonged to, etc. could be the individual case.

All research and data analysis are based on classification. All three of us are researchers, so we do lots of classifying in our work. Classification is implicated in most intellectual breakthroughs and knowledge-making.

Classification is so crucial to human activity that the anthropologist Claude Levi-Strauss famously remarked that “man is the classifying animal” (cited in Gardner, 1982). Forget the thumb or language, he maintained – what makes us human and allows all uniquely human endeavors is our capacity to sort and categorize. One of Jeff’s research professors, upon hearing the Levi-Strauss quote, joked that “*Jeff* is the classifying animal!” One of the reasons that Jeff loves literacy research is because it involves classifying data during the analysis. Undoubtedly, classification is one of the most powerful intellectual tools of modern humanity.

Since the three of us mostly look at the lived-through experiences of students with different kinds of literacy and learning, we’ve tended to do qualitative research. Our analysis of qualitative data begins with clearly articulating our unit of analysis. That is, we have to divide our data in to some kind of smaller unit. Doing so is an act of classification determined by our purpose or what classifiers call a basis. And then when we code those units we classify again. Even when we do quantitative or quasi- experimental research (where you can count things) like when we examine the kinds of moves student readers make with different kinds of texts, we still analyze our data by separating it into mutually exclusive categories, i.e. by classifying it.

Michael’s not so organized around the house as Jeff is, (just ask his family), but classification is something he does every day. Michael and his family love the show *The Sing Off*, the show that features a cappella groups. The show recently had its Christmas special provoking much conversation about what made some of the songs (e.g., “Baby, It’s Cold Outside) a Christmas song. Similarly, Michael’s been in one book club or another for over 25 years and he has a definite sense of what makes a “book-club book.”

As a kid, Jim used to go on family fishing trips for a week in northern Wisconsin. The first few days of fishing was enough for Jim, so while the rest of the family would head out on the lake for hours on end, Jim would sit alone in the cabin with stacks and stacks of baseball cards and magazines. At the time, the lake and cabin were so remote that the only radio station that would come in was the local one: there was no television, which meant no baseball games. This meant that Jim had hours to himself to organize baseball cards into different categories. He endlessly grouped and regrouped his cards into categories like ... “former Cubs,” “hope the Cubs trade for this player,” “left-handed hitting catchers,” “best photograph on the front of the card,” “best trivia notes on the back of the card,” etc. It was all classifying - for hour after enjoyable hour.

Classification Defined

According to Berke (2007), classification is a “highly methodical form of analysis and an indispensable condition of systematic thought, for it involves a sorting process that groups things into categories based on similar characteristics.” She takes the top-down approach: from general class to most specific instance of it.

Conversely, classification is defined by Mayr (2002) as bottom-up: “The arrangement of entities in a hierarchical series of nested classes, in which similar or related classes at one hierarchical level are combined comprehensively into more inclusive classes at the next higher level.” A class is defined as “a collection of similar entities”, where the similarity consists of the entities having attributes or traits in common. (Retrieved from Wikipedia, November 1, 2011). Both commentators are correct since classifications can proceed from individual examples on up into larger groupings, or from the universe or general topic of items down to individual cases to be classified.

We have previously written about classification as a basic structure of thought and had this to say: “Classification is an essential intellectual tool in math, the physical and social sciences, and in the humanities. Accurate and precise classification is the basis of biological studies and many of our most enduring and explanatory theories. It is essential to all forms of inquiry as the researcher chunks data and is enabled to see new patterns and relationships” (Smith and Wilhelm, 2007, 115).

For that matter, classification and pattern-seeking are essential to good reading (seeing repeated patterns and the complex implied relationships among them) particularly of literature. One of the hallmarks of good writing, especially research writing, and particularly in the content areas, is the capacity to organize data through classification, which in turn allows the writer to perceive, organize and express new insights. (MARGIN: CCSS Writing Anchor Standard #2.a and #2.b at any grade level, CCSS Anchor reading standard 1-3, 5, writing 7-9) Yet it is rarely explicitly taught, causing difficulties for students in both reading and writing this structure (see Smith and Wilhelm, 2007, 115-116).

(In science, categories and subcategories at each level of a classification must be equal, comprehensive (covering all examples at that level) and mutually exclusive. (In more informal classifications, produced for theoretical or practical reasons, there is sometimes more latitude.)

What characteristics your use as the **basis** of a particular classification are determined by your purpose and interests – any universe or population can be classified in many different ways. People can be classified by sexual orientation, socio-economic status, interests, ethnicity, politics, and much more, depending upon the purpose at hand.

Unit Idea: “What are the types/causes/effects/solutions to poverty?”

Composing to Plan for Classification

As always, whenever we devise any kind of instruction, we start with a plan that will be enacted in a particular context. (MARGIN: CCSS Writing Anchor Standard #4 and #10) **And, as always, we think the most powerful context for instruction is an inquiry unit built around an essential question.** It’s easy to ask an essential question that rewards or even requires classification.

Berke identifies the central classification essential question as: What are the types of X? which moves top down. An obvious alternative or subquestion is: What kind of X is Y? which moves from the bottom up. Other versions: How many kinds

of X are there (and what are the effects of each)? If we want to get some immediately functional work done with our classification we might ask: How many kinds of leaders are there? Political ideologies? Friends? Foods? Psychological states? Dreams? Success? Differential equations? Bivalves?

Such a classification question is often a fruitful subquestion of a larger overarching essential question (see how essential questions and subquestions form a kind of classification?). The questions in the last paragraph evolved from the questions “What makes an *effective* leader?” How do political ideologies *affect* human governance and experience? What is a *good* friend? Any question that looks at uses, functions, consequences and effects of classified types is doing this kind of work.

(MARGIN: An essential question sets a clear purpose, which helps students to meet CCSS Anchor standard for writing 4 regarding purpose and stance, as well as standards 1-3 for writing text types that reward the essential question. Also met are CCSS Standard for Mathematical Practice #1; CCSS Literacy Standard #3 for History/Social Studies Grades 11-12)

At the Boise State Writing Project, we are in our second year of a service-learning initiative, sponsored by a local donor. Our purpose is to integrate service learning as a natural part of the curriculum. We have found that working towards service provides a purposeful edge to our work that steels student attention and enriches their engagement.

In the project we’ll describe here, we pursued the question “What are the types/causes /effects /solutions to poverty?” as a whole class. This provided a wide array of possibilities for students to analyze data and to classify it. This question also provided many service learning possibilities.

However, our question was really a subquestion of a larger question: What are the types/causes/effects/solutions of major social issues? This is too big of a question to pursue in a unit (or even a career!) but articulating it does allow students, after doing the group work, to choose a subquestion of their own – continuing to study poverty, human displacement, environmental issues, the corporatization of America, war, or any other social issue -- as happened in the class we will describe.

In the beginning of this book, we talked about the “telos” or ultimate purposes of teaching writing. Inspired by the mentorship of George Hillocks, we take that telos to be achieving understanding for doing functional, meaningful and community-improving work out in the world. This unit allowed us to do this kind of work with our students. Service learning obviously furthers this aim.

Our essential question about poverty is obviously a very important and immediately pressing one. Almost half of the world – more than 3.5 billion individuals – live on less than \$2.50 a day (www.globalissues.org/article/26/poverty-facts-and-stats). The U.S. Census Bureau (2008) reports that nearly 15% of all inhabitants live below the poverty level, the highest rate since 1997 and steadily growing. Many commentators maintain that the poverty standard is artificially low, and that fully one-third of Americans live at a level that could be called poverty.

Conceptual Frontloading. (MARGIN: LESSON IDEA) We asked our students to mark their agreement or disagreement with the following statements.

- o Many people in this country don't have a work ethic.
- o If you work hard in America, you will prosper.
- o Poverty is a sign that individuals aren't taking responsibility and working hard enough.
- o The government’s purpose is to provide security and a safety net for citizens in trouble.
- o Poverty depends on lack of opportunity.
- * Poverty stifles hope.

o People can emerge from poverty and achieve success if they get the right help.

Poverty stifles opportunity.

o People should be responsible for their own economic welfare and not rely on the government.

o We need more equality of opportunity in America.

* Many hard working people nevertheless live in poverty.

* Welfare is actually an investment that leads to greater social prosperity for all.

We then asked them to list the experiences, beliefs and attitudes of mind that led to their agreement or disagreement with at least two of the statements. (MARGIN: CCSS Speaking and Listening Anchor Standard #1 and Writing Anchor Standard #1)

We take the student lists and model how we could classify the attitudes, beliefs and experiences in different ways. We also remind students that we will read a variety of different texts that address the issues from the frontloading activity and that we will ask them to explain how different authors and commentators would respond to this survey (MARGIN: CCSS Anchor standards for reading 8 and 9, Writing 7-9).

Analysis of models. (MARGIN: LESSON IDEA) Another technique for helping students develop knowledge of context and purpose (MARGIN: CCSS Reading Anchor Standard #8) is to provide some short models of classifications and to ask students:

WHY: Why did the author choose to classify this particular data? What work gets done or understanding furthered for the author and for others?

HOW: How did the author categorize the data, i.e. on what basis and for what purpose did the author sort the data into groups?

WHEN/WHERE: In what contexts would this kind of classification of (people, etc.) be meaningful?

Leonard Hooper, a lifelong resident of Down East Maine and one of Jeff's favorite Maine Writing Project fellows, taught for 54 years. He wrote this short classification piece during one summer institute that we have used many times since to help students to such an analysis of a simple classification scheme:

"You can divide residents of Maine into three groups: the Mainers or 'natives', the transplants, and the 'folks from away'."

By looking closely at each group, we can come to a more precise understanding of each.

1. The Natives, a.k.a. "Mainers" (pronounced "Maine-Uhs" by the locals): these are residents who were born in Maine and have lived in Maine their whole lives. These people typically work in the timber, fishery, tourist or other outdoor-oriented industry, or in the service sector.
2. The Transplants: these are people who migrated to Maine from somewhere else and have stayed for at least ten, if not twenty years. This longevity has demonstrated their love of Maine and has led to their acceptance by Mainers. They typically come to Maine for a new way of life, or a kind of employment tied to Maine in some way. They interact positively with Mainers and share their concerns.
3. Folks from Away: these are part-time residents, a.k.a. summer people, who have homes or 'camps' in Maine. They come and go, or are construed to be in Maine for a short-time stay. They are not perceived as being committed to Maine values of local control, love of nature, and willingness to put up with hardship. Mainers and transplants interact with these folks out of necessity or for economic benefit, but in general resent them as outsiders taking advantage of Maine without substantively contributing to the culture. (from Smith and Wilhelm, 2007, 116)

Since articulating the basis for categorization is the primary crux move for classifying, we emphasize discussion on the categories Leonard developed. Some identify the basis as the time spent in Maine, but the discussion will reveal that it is more than that. It is time in Maine plus the more important differentiating qualities of commitment and how devoted people are to the traditional values of Maine.

This short example demonstrates how a social scientist will translate casual local classifications and cover terms (those used by real people) into a more formal, systematic and complete set of groupings. What work can this do? It can help us see relationships among groups, explain interactions between the groups, understand culture and much more. Leonard's essay helped Jeff understand why some students in Maine would say "He's from away!" when he said something they disagreed with, and why, when pleased, they would compliment him by saying something along the lines of "You're our favorite transplant – but just don't go thinking you're something you're not!"

A great follow up to such an analysis is to ask small student groups to come up with some reasons and contexts in which classifying the students (or teachers or staff!) in your school would matter. Small groups could then be asked to begin such a classification scheme, making the attempt to identify enough comprehensive categories so that every student (or teacher) would fit into one group, but only one group. (MARGIN: These activities meet CCSS Anchor Standards for Reading 1-6, 8 and 9; Writing standards 2, 5 and 7).

In the context of our social issues unit, we next did a similar activity to the Leonard Hooper piece with an article about poverty so knowledge of purpose/context and substance begins to be developed together. Here's the beginning of the article from CliffsNotes.com. *Causes and Effects of Poverty*. 1 Nov 2011
http://www.cliffsnotes.com/study_guide/topicArticleId-26957,articleId-26882.html

The effects of poverty

The effects of poverty are serious. Children who grow up in poverty suffer more persistent, frequent, and severe health problems than do children who grow up under better financial circumstances.

Many infants born into poverty have a low birth weight, which is associated with many preventable mental and physical disabilities. Not only are these poor infants more likely to be irritable or sickly, they are also more likely to die before their first birthday. Children raised in poverty tend to miss school more often because of illness. These children also have a much higher rate of accidents than do other children, and they are twice as likely to have impaired vision and hearing, iron deficiency anemia, and higher than normal levels of lead in the blood, which can impair brain function. Levels of stress in the family have also been shown to correlate with economic circumstances. Studies during economic recessions indicate that job loss and subsequent poverty are associated with violence in families, including child and elder abuse. Poor families experience much more stress than middle-class families. Besides financial uncertainty, these families are more likely to be exposed to series of negative events and "bad luck," including illness, depression, eviction, job loss, criminal victimization, and family death. Parents who experience hard economic times may become excessively punitive and erratic, issuing demands backed by insults, threats, and corporal punishment.

The article goes on to describe other effects such as homelessness, which led to still other effects, and a perpetual underclass, which leads to still other effects. (We used the Interlibrary Database search mechanism to help students find about

100 articles of 1-2 pages about the causes and effects of poverty.) (MARGIN: CCSS Writing standards 7 and 8)

Students can be asked the same questions as we asked for the Hooper piece:

WHY might the author have chosen to classify this particular data?

What work gets done or understanding furthered for the author and for others by doing so?

HOW were issues sorted? i.e. what was the “basis” of the classification? In other words, why were the effects divided as they were?

WHEN AND WHERE, i.e. in what contexts would this kind of classification (of effects, etc.) be meaningful?

What do we learn here about why and how social scientists classify things?

(MARGIN: CCSS Reading Standards 1-6)

As a next step, we often use an activity called List-Group-Label. (MARGIN: LESSON IDEA) This activity helps participants to infer purposes and contexts, while also learning to infer and apply the deep categorization structures implicit in lists of ideas that begins to move us into the realm of the procedural knowledge of substance and of form for classification. We’ll illustrate this activity with work Jeff and Jim have done with their Boise State Writing Project CCSS implementation team to help teachers see the underlying structure of the CCSS.

We give the teachers strips of paper, each with a CCSS anchor standard. All the strips at a particular table constitute their list of individual examples. (Of course, participants using this technique in other situations might be asked to generate their own list. Another option is to ask participants to add to a provided list—when we do this we provide a certain number of items, but also give participants blank slips and require them to add at least one item to each category.) We then ask the teachers to group the anchor standards according to underlying purposes versus conventional groupings like reading and composing. We then ask them to label the categories they see, and discuss new insights that are revealed through these categories about the purpose of the CCSS and how to meet them.

- What are the major themes/ groupings? Use “purpose” as the basis for your categorization.

- After completing your grouping, ask:

- What is the absolute center of the CCSS curriculum and how do you know? E.g. “The major thrust of the CCSS is “

- What is the most effective way to meet these standards and why do you think so? I.e. what theory of teaching and learning is implicitly expressed by the CCSS?

The last time we did this activity, here are the groupings the teachers labeled:

- Inquiry/Research (learning with purpose and for strategic understanding and use)
- Inferencing (including how conventions, figurative language, local and global structure contribute to effect and meaning, i.e. complex implied relationships, authorial and structural generalizations)
- Argument/evidentiary reasoning.
- Explanatory writing/process analyses – justification/reflection
- Stance: purpose, voice/perspective, audience consideration, rhetorical choice
- Reconciling differing perspectives
- Representation, revision, presentation

Obviously, students could do this with any set of data – lists you provide, lists they generate, advertisements from a magazine. If the data relate to the ongoing inquiry, so much the better, as they will also develop procedural knowledge of substance. So for instance, if studying leaders the students could be given photos of various leaders in different domains, or photos of leaders in action. The deliverable could be to group and then label separate parts of a classroom museum exhibit on leaders.

In our unit on the effects of poverty, we provided our students with a wide variety of WPA photographs from the Depression, including many famous ones from Dorothea Lange. (MARGIN: LESSON IDEA) We then asked them to group and label the photographs and create a photo exhibit for the class, justifying the purpose of the exhibit and how the groupings they chose served this purpose. Since the photographs obviously explore the experience of people in poverty this activity became a kind of conceptual and procedural frontloading. And because the students composed a museum exhibit based on classification, we are already moving into the realm of composing to practice.

By the end of this composing to plan phase, we ask groups of students to come up with a definition of classification, including its purpose and contexts of use. Here's one that a group of tenth graders came up with (we obviously gave them some labels to use for their various insights, so that they would be learning the "terms of art" regarding classification). Here's one that students came up with:

- Classification schemes group elements or individual examples of a topic group (called a 'universe' or 'data set') into different "classes" (groups/categories /families) that share important defining characteristics.
- Classification organizes objects and ideas so they can be easily accessed, and so that various kinds of relationships, like similarities and differences, can be perceived and explained and then used to solve problems.
- Classifications are used widely in science and math, social sciences and history to understand large data sets and to see new relationships inside those data sets.
- We all also use classification in our lives to organize our stuff, our thinking, and our ways of solving problems and getting around.

We also asked students to brainstorm ways in which we can classify causes or effects of poverty in ways that will be helpful to our understanding and problem solving, as well as ways and venues for sharing what we come up with. In this way, students are beginning to plan for their classification paper. We want them to consider and carry forward this question: What do I want to classify (universe) and why (basis) in regards to our inquiry?

Composing to Practice Classification

It is useful to have students compose **spontaneous classifications** (MARGIN: LESSON IDEA) with other kinds of topics with which they are very familiar, e.g. homework, cafeteria food, curricular activities, sports, breakfast cereals, junkfoods, popular music, video games, television shows, movies, etc. In fact, you can frontload their classification writing by working together to list all the specific examples of courses, extracurricular activities, cafeteria food, etc. that they can think of. They can then work to chunk and classify (group) the list. We often start with groceries, so that students can consider how grocery stores are classified and some of the problems with classifications of very familiar material.

Another quick activity that is a step further from home and into the disciplines is to have students do **word sorts**. Here's one that classifies vocabulary in a geometry unit. From here, it's a quick step to expand vocabulary sorts from a whole class as is done in "**How to speak physics**". This activity has the added benefit of helping students classify the discipline by topical concerns and assists students to understand how vocabulary, as well as ways of thinking and problem-solving around particular topics, helps them to enter into the discourse community of doing physics or any other discipline. (Exhibits for both attached). (MARGIN: CCSS Reading 4; Language standards 3 and 4; CCSS Language Standard #6 for domain-specific vocabulary (tier-three words))

The next step in complexity is to have students begin to work with super- and sub-ordination of ideas by identifying subcategories. We have students create issue trees or branch diagrams that reflect their classifications of familiar material like that in the two previous examples. Issue trees and branch diagrams (MARGIN: LESSON IDEA) are powerful tools for discovering and representing the relationships among various classes and examples, and helps to organize the entire classification scheme.

This organization can also be done in the form of a power outline (with each number reflecting an increasing level of specificity to the classes). These in turn can become the outlines (MARGIN: CCSS Writing Anchor Standard #5 for planning writing) for writing an explanation of the classification.

For example, school activities are organized into a power outline such as the following. Our students needed 5 levels to get from the universe down to individual examples of activities:

1. School Activities
 - 2Curricular
 - 3Sciences
 - 4Biology
 - 5APEnvironmental Science
 - 3Social Sciences
 - 3Maths
 - 3Language Arts
 - ETC.

2Extracurricular

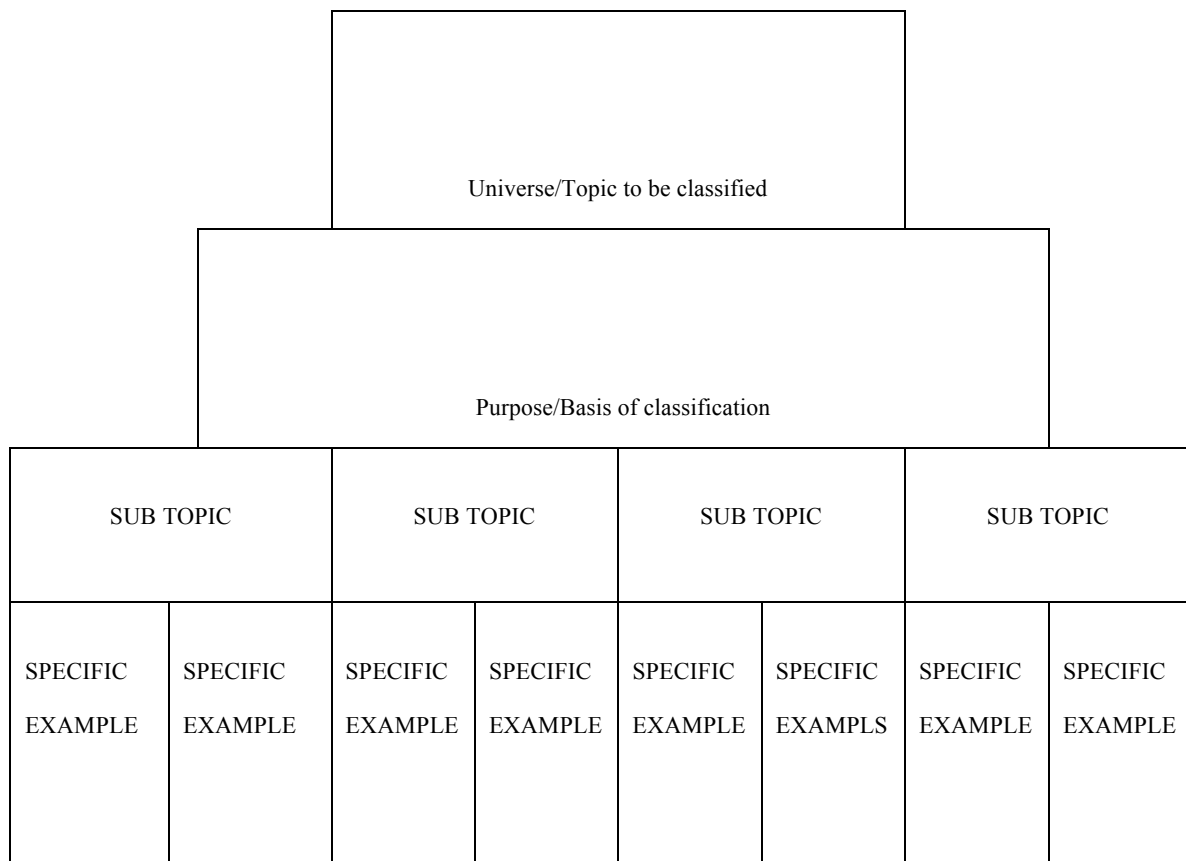
3Sports

3Arts

3Publications

ETC,

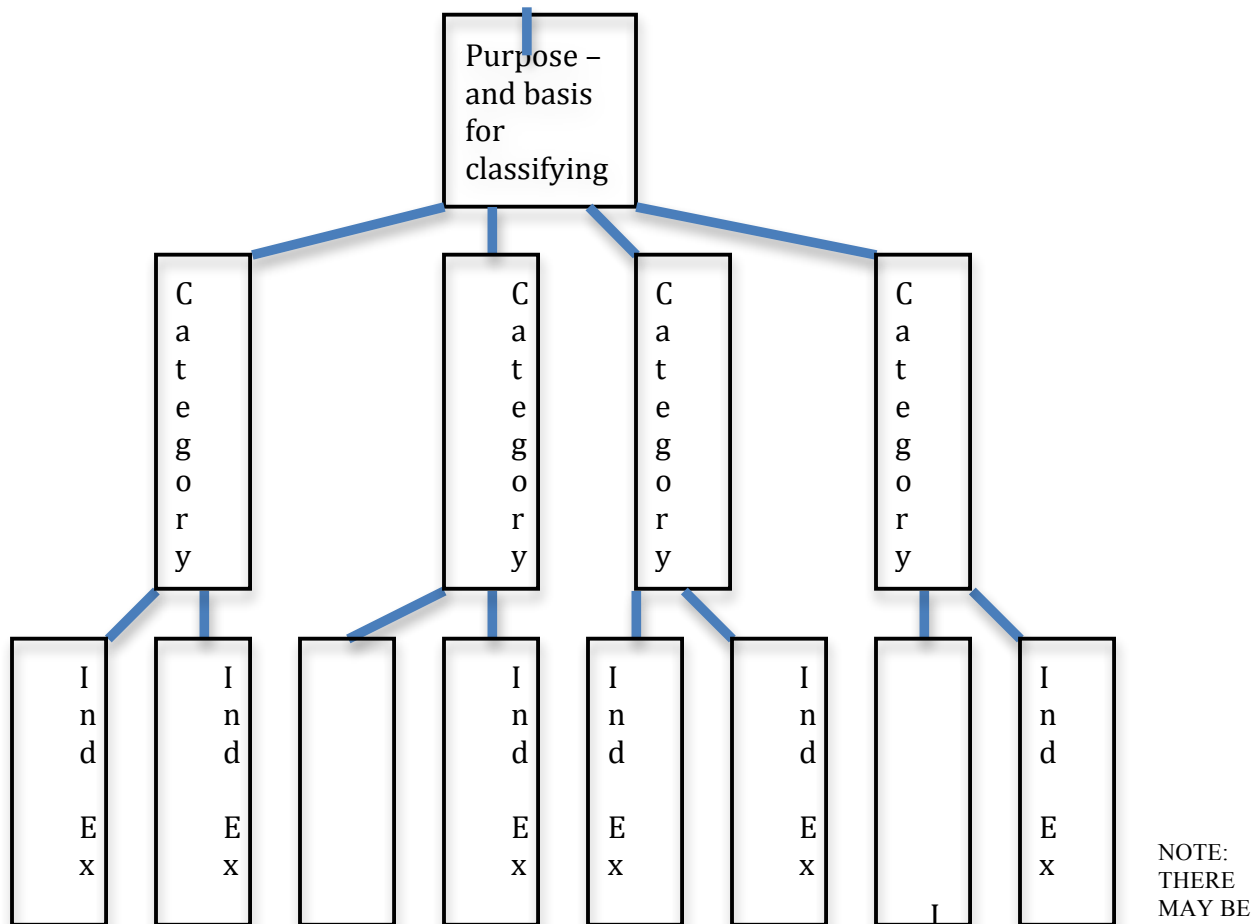
Here's a block diagram of a classification scheme:



Note well: CLASSIFICATIONS will not fit neatly into such a chart. There may be many more or even fewer subcategories, more levels of subordination, etc. This is a highly flexible model, not a “one size fits all” example.

(ED/SAM – I have examples of issue trees and branch diagrams that are not electronic. I can pdf them and send on later if you like. I am thinking to provide a branch diagram for groceries and an issue tree of the school activities.)

UNIVERSE



SEVERAL LEVELS OF SUBCATEGORIES TO REACH THE INDIVIDUAL MAY ALSO BE DIFFERENT NUMBERS OF SUBCATEGORIES FOR CATEGORIES, NUMBERS OF INDIVIDUAL EXAMPLES FOR EACH SUBCATEGORY.

NOTE: THERE MAY BE EXAMPLES. THERE AND DIFFERENT

reinforce their proceed. We give each

Once students are familiar with issue trees and branch diagrams, we like to understand with a **human issue tree**. (MARGIN: LESSON IDEA) Here's how we student one notecard with one of the items below. The students have to create an issue tree with these cards that goes down three categorical levels. They will easily identify that the basis of classification is flavor. Then they will need to identify subcategories and individual examples of the subcategories. The activity requires discussion of how to categorize and fit examples into subcategories. After completion, they can extend the tree for extra credit, since this one is hardly exhaustive. They will need to invent new subcategories to do so, or split the combination subcategory more finely. This activity does not require much time so several examples can be done.

- Ice Cream (universe)
- Vanilla flavors
- Chocolates and Cocoa flavors
- Candy and cookie flavors
- Fruit flavors
- Nutty flavors
- Combination flavors
- Butter pecan

- Black Walnut
- Strawberry
- Vanilla bean
- Chocolate chip
- French vanilla
- Cookies and cream
- Vanilla fudge ripple
- Praline pecan
- Cherry
- Butter Finger
- Chocolate almond
- Rocky road
- Chocolate marshmallow
- Almond Joy
- Fudge

(MARGIN: CCSS Speaking and Listening Standards, 1, 2, 4)

A slightly more complex activity is to provide only some categories and some subcategories and then ask students to create the rest of the classification. (MARGIN: LESSON IDEA) Students will need to come up with individual examples of each and to see if everything they come up with fits a category, is a hybrid, or if new categories and subcategories must be identified.

Following is an incomplete classification we've asked our students to complete. Students were asked to make sure that they have provided individual examples to each of the final identified categories or subcategories, and also make sure that every video game they know fits as an individual example under a branch of categories and subcategories.:

Universe: Kinds of video games

Basis: Purpose of game and associated gamer activity

1. Action
 - 1.1 Shooter
2. Action Adventure
3. Adventure
4. Role Playing
 - 4.1 Multi-Role Player Game
5. Simulation
 - 5.1 Construction and management simulation
 - 5.2 Life simulation
 - 5.3 Vehicle/driving simulation
6. Strategy

Textbooks are typically organized through classification of topics, and often do a very poor job of organizing that classification. One year, Jeff’s students complained bitterly about their social studies textbook for eighth grade world cultures. Jeff asked the student to identify all the topics in one chapter about Northern Ireland, and they created the following list. After generating this list of topics, students were asked to classify them into an issue tree, and then to propose a new way of organizing the chapter (MARGIN: LESSON IDEA):

Livelihood	Agriculture	population
Culture	women and children	religion
The social history of Northern Ireland		protestant
Poverty	Catholicism	fairies
Irish language	politics	paganism
Education	housing	health
Cooking and fuel	diet	dress
Potatoes	customs	social habits
Storytelling	crime	sports
Fairs	Boyle Abbey	Black Church
St. Patrick	British occupation	Easter Uprising
Battle of the Boyne	French invasion of Mayo	priesthood
Sinn Fein	IRA	UPD
Ian Paisley	Parnell	O’Connell
William of Orange	St. Brendan	beers and ales
The Fenians	cider	cream liquors
Soda bread	corned beef	potato cakes
Soccer	hurling	U2
Folk songs	Sinead O’Connor	the Chieftains

(MARGIN: CCSS Speaking and Listening 1, 2, 4; Language 4, 5, 6)

As we move towards composing our own classification essays, it’s useful to look at some clear and short examples of the genre. In the **mystery pot** activity (MARGIN: LESSON IDEA), we cut the following text up into its constituent sentences and ask small groups of students to organize those sentences into the original order. We ask students to circle the cues that lead one sentence to another (transitions, navigational cues, repeated words or ideas) which helps students to consider the audience and to provide coherence for that audience. (MARGIN: CCSS Reading Anchor Standard #5) (Many times with the mystery pot

activity, there are different ways of ordering a text but each ordering will provide a different emphasis, meaning and effect. Students can discuss the choices they made and the effects achieved (MARGIN: which helps meet CCSS standards for writing 4-6). This also reinforces the notion of rhetorical stance. After the reordering, we ask our students to create an issue tree that provides an outline of the classification. Here's an example from the Content Reading In Secondary Schools (CRISS) initiative that we have found useful:

The Origins of Jazz

The roots of American Jazz were planted long before this century was born.

These roots were the beat, the music of the brass bands, and the blues – three roots that eventually jointed together to form that most American of music – Jazz!

The beat, the first root of jazz, began with the varied rhythms of African slaves in New Orleans.

Each Sunday these slaves would gather on Congo Square for a celebration, a “bamboula”.

There they recalled the rhythms of their homeland, rhythms passed down from parent to child.

As some of the musicians beat their intricate rhythms on drums of many sizes, others would dance and clap.

Thus, the beat was born.

The second root of jazz was also planted in New Orleans.

Through its years as a French colony, this city on the Delta had heard the strident music of the military brass band, and had danced to the rhythms of French quadrilles played by some of these same bands at evening soirees.

These sounds and rhythms they combined with the beat of the Congo drums into a music of their own, a syncopated form of melody known as “rag” or “ragtime”.

This music was also played by small brass bands made up of the descendants of those earlier slaves who had established the “beat” in Congo Square.

No one knows who first made up the blues.

It is fairly certain, however, that its roots were firmly planted in the work songs, the plantation cries, the field hollers and the spirituals heard and sung by early slaves as they gave vent to their loneliness, frustration and sorrow.

Eventually, interest in the blues grew until it joined with the beat and the music of the brass bands.

From this union, a new and completely American form of music was born --- jazz!

The children's book Time to Eat by Steve Jenkins & Robin Page also provides a good example of a classification scheme that can work in a mystery pot. We have found that our students enjoy all of these activities immensely, regarding them as a kind of puzzle to be solved. And as we've heard the cognitive scientist Sherry Turkle maintain: puzzles have a natural holding power.

Critiquing negative models. (MARGIN: LESSON IDEA) Once students had some expertise with classifying, our students had great fun critiquing and writing ones that violate the rules.

Here's a great model for an incorrect classification from Jorge Luis Borges that we have our students read. In small groups, we ask them to critique the system, and then to write a fake classification based on the model. We went over this carefully with students to identify the logical classification errors. We then encouraged students to commit and name the same kinds of egregious errors.

"A certain Chinese encyclopedia entitled Celestial Emporium of Benevolent Knowledge. On those remote pages it is written that animal are divided into a) those that belong to the Emperor, b) embalmed ones, c) those that are trained, d) suckling pigs, e) mermaids, f) fabulous ones, g) stray dogs, h) those that are included in this classification, I) those that tremble as if they were mad, j) innumerable ones, k) those drawn with a very fine camel's hair brush, l) others, m) those that have just broken a flower vase, n) those that resemble flies from a distance . . ."

Students also had fun analyzing, explaining and transforming their silly, incorrect versions into classification schemes that fit the criteria of a correct one. If students can successfully do and justify this kind of work, they demonstrate their understanding of correct classification schemes.

By using a sequence such as this, using the reading of models and writing from models as core activities, writers can be helped to develop a sense of global text structure that will lend purpose and coherence to their writing at the sentence, paragraph and text levels. (MARGIN: CCSS Anchor Standard Writing, 4)

After we have practiced enough for students to master the basic tools of classification, we then move to material from the conceptual inquiry at hand. In our poverty unit, we had students read profiles of kids living in poverty (provided by aid

organizations) or profiles of poverty fighters. (MARGIN: LESSON IDEA) We then asked students to classify the causes of poverty, the effects of poverty on the children, kinds of aid, the effects of aid, what they learned about poverty, and anything else they could find to classify. (MARGIN: CCSS Reading 7-9; Writing 7-9)

During the unit, students organized literature circle groups (MARGIN: LESSON IDEA), gave themselves a team name, and read some of the following books. They had to read at least one fiction and one nonfiction book:

Fiction - Begging for Change, by Sharon Flake. Uncle Willie and the Soup Kitchen by DyAnne DiSalvo-Ryan. A Castle on Viola Street, by DyAnne DiSalvo. True Believer, by Virgian Euwer Wolff.

Nonfiction - A kid's guide to hunger and homelessness: How to take action, by Cathryn Berger Kaye. Children of the great depression, by Russell Freedman. Pitch black, by Youme Landowne and Anthony Horton.

We also provided short sections of Jeffrey Sachs' The End of Poverty. The reading choices were selected with an eye of deepening and complex notions of poverty, its causes and effects. (MARGIN: CCSS Reading and Writing, 7-9) (Again our Interlibrary data search service provided us with long list of YA fiction and nonfiction books around the theme of poverty.) (MARGIN: CCSS Writing 8-9)

First-draft Composing of Classification

To begin the drafting process of our classification schemes related to poverty, we asked small groups of students to create a list of do's and don'ts. (MARGIN: LESSON IDEA)

Here's a guide from one group:

DON'T BE GUILTY!

- You must stick with the same basis of categorization throughout and for all levels or you are guilty of the logical error of cross-linking. GUILTY!
- Don't oversimplify! Don't fail to consider the different perspectives or types of a subject like intelligence, courage, happiness, loyalty, friendship, leadership, etc. that people might overlook. GUILTY!

DO BE SUPER SMART!

- Find the story! The story depends on your purpose, and on what insights are revealed through the classification.
- Be complete! A place for everything (every individual example) and everything in its place.
- Make sure you get to individual examples!

Here's a more specific guide that Jeff's students came up during the poverty: unit, which works for students to guide reading, critiquing and composing of any classification scheme.

CLASSIFICATION CRITERIA

A successful classification system will . . . IDENTIFY, DEFINE, COORDINATE, SUBORDINATE. . . all the way to individual examples!

IDENTIFY topic

1. Clearly identify the subject (the limited topic or universe) of the classification (top level of your issue tree).

DEFINE basis

2. Clearly define and explain the basis (the reasoning for dividing the universe into these particular classes).
 - a. is the basis clearly worded?
3. Identify the purpose of the classification and the explanatory power and work such a classification can do for the audience.
 - a. Who is the audience of the classification?
 - b. How does the classification meet audience needs and interests?

COORDINATE classes

4. List the types (general classes) that will be explained and examined (this will be the second level of your issue tree).
 - a. Are all types at any level of equal value? Are they mutually exclusive?

SUBORDINATE classes

5. Each subordinate layer of the classification fits under and is an example of the layer above it
 - a. Are all types at this level of equal value? Are they mutually exclusive?
 - b. Do the types at each level of the issue tree comprehensively account for every member of the universe?
 - c. Does each descending level of the issue tree reflect an intensifying and specifying power of one?
6. The details (specific examples) are divided in terms of the basis.
7. Paragraphing and headers reflect the organization of the content and assists the reader to understand and navigate the text.
8. Transitions and key words are used for coherence and promote reader navigation of the text.
9. The examined types (the most specific examples at the bottom of the issue tree) are individual examples and are specifically shown to the reader.

CHANT IT, CURIOUS CLASSIFIERS: ALL GOOD CLASSIFICATIONS IDENTIFY, DEFINE, COORDINATE, SUBORDINATE. . .

(MARGIN: CCSS Writing 2, 4)

We ask that peer editors read each other's papers and apply the criteria. We also ask them to draw an issue tree of each others' classification paper so that the writer will know if they explained it clearly enough for it to be replicated.

(MARGIN: LESSON IDEA)

Inductive self-study on paragraphing. (MARGIN: LESSON IDEA) We also do work on paragraphing by asking pairs to study the paragraph breaks in two of the professional classifications we have read, and to cite what they think is the reason or reasons for each break. (MARGIN: CCSS Reading Anchor Standard #5) We then create a list of rules. Next we read each other's papers and see if these rules are followed. If not, we decide whether we are missing a rule or whether the paragraphing in the student paper should be done differently. We then create a classroom set of rules about paragraphing for the rest of the year. Here's an anchor chart from a ninth grade class.

Reasons for paragraphing.

To shift to a new idea or perspective or a new subtopic

To restate a point

To emphasize a point

To provide additional support or explanation

To break things up on the page for the reader, so it doesn't look too long on the page

To make things manageable for the audience

To bring related ideas together and emphasize the relationship by putting them together in a paragraph

In classification, to show we have moved to a new category or subcategory or individual example.

To show co-ordination

To show sub-ordination!

NOTE WELL!

*Textbooks tell us to create a topic sentence and then work to create sentences that build on the topic sentence. But the professional writers we looked at and in our own writing we found that real writers don't work that way!!!!

*Paragraphs don't have an independent existence—they are part of the entire discourse and work to promote overall understanding and work for an overall effect!

(for academic research on paragraphing that shows these students were correct, see Lindemann, 2001). (MARGIN:

CCSS Language standards 2, 3; Speaking and Listening 1-6)

Final-draft Composing of Classification

When students compose classification papers that explain their scheme, we have found that learning about colon use (listing); and subordinating conjunctions (for comparing/contrasting) is helpful to them. So is instruction in the use of the semi-colon for differentiation or coordination (MARGIN: CCSS Language Anchor Standards #1 and #2) (There are extensive models for teaching these moves in *Getting it Right*, Smith and Wilhelm, 2007).

Examples of inductive colon use exercises(MARGIN: LESSON IDEA):

1. This school offers many different kinds of sports: _____, _____, _____, and _____ . (use as many blanks as you need).
2. Ice cream comes in many different kinds of flavors:
3. Come up with your own example . . .

Discussion Question: *What do you notice about the language construction? How can you use this construction in your own paper?*

Examples of inductive exercises for other ways of introducing a classification:

1. Not getting enough education, poor health, _____, and _____ are all correlated with poverty..
2. Neither _____, nor _____, nor _____ (use as many blanks as you need) necessarily solves the problems of poverty.
3. One can improve his or her upward mobility by _____

_____, or _____, or _____. All of these are good strategies.

Discussion Question: *What do you notice about the language construction? How can you use this construction in your own paper?*

For semi-colons in a series

The first class of curricular offerings at our school are sciences like life, physical and chemical sciences; the second class are maths like basic, algebra, geometry and calculus; the third class is social sciences . . .

Our school offers many kinds of extracurricular activities like those in the visual arts including filmmaking, glassblowing, watercolors, and portraiture; those in the performing arts like theater, drama and forensics; those in publishing like . . .

Discussion Question: *What do you notice about the language construction? How can you use this construction in your own paper?*

(MARGIN: CCSS Language standards: 1, 2, 3)

Composing to Transfer Knowledge of Classification

You may have noticed that all of the units described in this book culminate in some kind of social action or service learning. Applications of learning, like those students engage in through social action and service, is the ultimate composition for transfer – it *is* transfer! (MARGIN: CCSS: Service learning and social action are in line with what Smarter Balanced and PARCC design for their Performance Tasks—real world application through problem solving.)

Clearly, the classifications in this unit were in service of an even bigger existential question: What ways are available to us to address problems and change our local community and world for the better? In our unit, the final reward for successful learning is that you get to perform your learning all over again. So we asked students to brainstorm a classification system of what we could do as citizens to improve our community.

In preparation, we engaged in a day of short term research (MARGIN: LESSON IDEA)(MARGIN: research required by the CCSS, Writing standard 7) using both local resources like the Society for New Americans and the Salvation Army, and online resources like the National Service-Learning Cooperative's 11 Essential Elements of Service Learning, which emphasizes the need for student voice and student action as an integral part of curricula. The website for Learn and Serve: America's National Service Learning Clearinghouse includes an emphasis on multimedia and social media to get one's message out and raise awareness. (MARGIN: CCSS Writing Standards 7-9)

After reading these resources, the class came up with a classification scheme of what we could do to improve our community that involved the subcategories of 1) working vigorously to deepen our own understanding; 2) listening to each other 3) raising awareness; 4) providing resources to each other; 5) helping each other directly, face to face; 6) withholding judgments of others and realizing poverty (and other issues) is much more complicated than you think; 7) actively believing the best of others and expressing this. Students then provided specific examples of actions that would fit each category of helping.

The students then brainstormed actual ways and practices to enliven each category of “doing” something to improve our community in regards to poverty and other issues.

Students then chose an activity to pursue. To embody some of these methods for working towards changing the community and world, the students went far beyond the classroom requirements and organized a weekend campout in cardboard boxes on the football field to both deepen our experience of poverty and to raise awareness of homelessness. Another group organized students to give up their lunches and eat one cup of rice at lunch for two weeks, donating their lunch money to a local food bank.

Their final reflective writing involved classifying (MARGIN: LESSON IDEA) what they had learned that did not expect: conceptually, procedurally, socially and in any other general topical areas they could identify.

Another kind of reflective writing involves having students reflect on their reflections. (MARGIN: LESSON IDEA) We like to introduce students to a classification system about forms of reflection and ask them to code their own reflections to match those schemes.

Boud (in Boud, et al, 1985) offers this classification of reflective thinking:

Attention to feelings – utilizes positive feelings; removes negative feelings

Association – linking of prior and new knowledge; identify discrepancies between new and old knowledge, feelings and attitudes; reassess prior and new knowledge, decisions and stances

Integration – seeking to understand and connect the nature of relationships of prior knowledge, decisions, feelings and attitudes with the new

Validation – testing for internal consistency between new understandings and appreciations and prior knowledge or beliefs

Appropriation – making knowledge one’s own; internalizing new knowledge and attitudes and stances into one’s identity; considering possible applications in one’s own life context; new knowledge and insights becoming a force in own life

Outcomes – transformation in perspective; change in behavior, readiness for application, commitment to action

In a similar vein, Hatton and Smith (1995) posit four levels of reflection:

Descriptive/non-reflective – descriptive account of events

Descriptive reflection – description with introduction of personal perspective, and/or some contemplation of other or alternative perspectives, and/or acknowledgement of other perspectives

Dialogic reflection - discussion with one’s self; exploration for possible reasons and underlying causes; ability to separate oneself from events and actions; engagement with the self, events, actions and decisions; logical and integrative commentary.

Critical reflection – consideration of the broader social, historical, political and cultural contexts that influence event, actions, decisions; integration of theory and practice to inform observations and decision making.

Introducing and using such schemes gives a final review to classification, but also encourages students to use and appreciate various kinds of reflection.

Conclusion

The classifications throughout the unit itself were all after something bigger than just classification, as they led naturally to cause-effect and problem-solution thinking and text structures, the subject of our next and final chapter.

Chapter 12

Problem/Solution and Cause/Effect:

So What's the Problem?

We've all been in personal and professional situations where problems were denied or just plain ignored until it was too late. Jeff currently is laid up after microfracture surgery on his knee (a surgery apparently reserved for elite athletes *and* Jeff) because he failed to recognize the growing pain, swelling, and tightness in his knee and be proactive about addressing it. He also has a student he was worried about and he neglected to sit down and talk with her until after she was feeling overwhelmed.

Enrollments are down in Michael's department and he worries that his focus on potential causes that he *can't* control (e.g., teacher lay-offs in Philadelphia) have kept him from thinking about potential solutions he *can* control (e.g., doing a better job following up on email contacts).

Jim once taught in a school district where one of the high schools had to be closed for an entire year because a mold problem was ignored for years. The problem was not understood as a problem until health issues for teachers and students grew more frequent and serious.

In contrast, we want to cultivate – both in ourselves and in our students – a problem-seeking and problem-solving mentality. We want to encourage proactivity versus reactivity: a tomorrow mind instead of a yesterday mind. It seems to us that denial or just plain avoidance is an all too-human problem - and it needs solving!

Here's another thing: as a culture we avoid and deny problems. It is undeniable yet still denied that we are facing problems with global climate change, biodiversity loss, air and water quality, food security, poverty, equality of opportunity, educational policy and assessment and on and on. Read the morning paper any day and you can come up with a long list of existing, potential, and even suggestions of hidden unarticulated problems.

In many cases, there are proven ways to address these problems, or at least elements of them, that are often ignored or misused. (Jared Diamond's seminal book *Collapse* is a casebook of solutions for existing problems, and descriptions of the dire societal consequences that have followed (and will follow) if such problems are not wisely addressed. He argues that societal collapse is always caused in part by denial of obvious and growing problems.) In this chapter we will explore how to cultivate a problem-finding and problem-solving spirit, including how to redefine and "reframe" recognized problems, and search for and embrace creative and innovative solutions. We'll also explore how problem/solution and cause/effect structures are related to each other and much more complex than typically purveyed in school.

Here's an example of that complexity: In today's *Globe and Mail* (September 7, 2011), there is a major article about the problem of declining wild sockeye salmon stocks. Four scientists and their studies are featured. Every scientist agrees that sea lice *may* have an effect on the collapse of the sockeye; none is willing to commit to this. All agree that sea lice are propagated in salmon farming operations, and that they spread from these to wild populations. Every researcher also insists that the problem of the salmon collapse cannot *solely* be caused by sea lice. As the reporter Mark Hume, puts it: "All four witnesses replied in the negative when asked if sea lice 'acting in isolation' could have caused the collapse of sockeye salmon stocks." The article concludes that the problem now is to establish some kind of policy that might lead in the direction of a solution, given the murkiness and complexity of the findings in defining the nature of the problem.

This story highlights a major issue that we want to emphasize in this chapter: causality and problems and solutions are way more complicated than most people think, and way more complicated than school portrays them and students tend to make them. As one boy in our study of the literate lives of young men both in and out of school (Smith & Wilhelm, 2003; 2006) proclaimed: “School takes twisty-twirly ice-cream with sprinkles and turns it pure vanilla!” In other words, school uncomplicates and dumbs things down. In so doing, the energy, edginess and usefulness of what we are teaching is lost.

George Lakoff, the cognitive linguist, argues (2008) that human beings have various cognitive biases towards simplicity and direct causality that rarely if ever match reality or bear scrutiny. If we want to meet the correspondence concept and really help students develop expert understanding of problems and solutions and of cause and effect, then we must address these biases in direct and wide-awake ways.

We’ll start with problem-solution because it seems to us that cause and effect is a subset of problem-solution and always in service of it. We need to be confronted with a compelling problem before we are motivated to understand the nature and causes of that problem.

All Roads Lead To Problem/Solution

Here’s our central point: All roads once led to Rome - and all paradigmatic text organizations can and often should lead to problem/solution. Problems are what compel us to use paradigmatic thinking and text structures: to understand, for sure, and to use our understanding to solve problems. Even a text-type as simple as a list is made to solve a problem such as what not forget for a trip or on a run to the grocery store. A recipe solves the problem of how to prepare an unfamiliar dish, as well as the problem of immediate hunger!

Part of developing the proactive, tomorrow-minded, inquiring mindset is to learn how to see problems, even when they exist for others but not for you (this is essential to democratic living). So, too, is learning how to reframe problems so they can be seen in a new way or in a way more amenable to satisfactory solution. (MARGIN: This in turn ties to the CCSS emphasis on understanding multiple perspectives, as well as to flexibility and creativity in thinking.)

A note: We are going to address problem/solution and cause/effect structures in this book on informational/explanatory text because the CCSS refers to these text structures as informational/explanatory. However, unless students are writing about pre-determined causes and effects, or reporting on already clearly understood problems and established solutions, then these texts are not informational, but are in fact arguments and often theoretical arguments at that.

We’re not entirely against this kind of relatively simple informational research and reporting. There seems to us to be some value in reviewing what is already understood about the nature and complexity of understood problems and how solutions address the various aspects of the problem that would involve summarizing and describing. Likewise, it seems important for students to understand the causes of various established effects. That said, it’s more likely for real inquirers and composers to be arguing for causes and effects that are not yet established, or about how to understand problems and possible solutions in innovative and creative ways, so we’d hope that reporting was in service of then creating new meanings – and writing arguments. For this reason, we’ll be doing only a somewhat cursory introduction to these text patterns as informational texts here, and will refer you to our argument book (Smith, Wilhelm and Fredricksen, 2012) for instruction on how to frame and pursue these text structures as argumentative texts.

How the Problem-Solution Pattern Works

Hoey (2001, 123ff.) maintains that the problem-solution pattern works this way: (1) a previous **Situation**, which provides a context for the problem, (2) the

Problem or “aspect of a situation requiring a response” (124), (3) the **Response** to the problem which must address underlying causes (more on this later) and (4) a Positive Result or **Evaluation**. All these features can be seen in Hoey’s humorous fabricated example:

(1) I was once a teacher of English Language. (2) One day some students came to me unable to write their names. (3) I taught them text analysis. (4) Now they all write novels. (123)

Of course, his case, like many others, provides an inappropriate or invalid solutional response turning 4) into “Negative Result or Evaluation”, such as: “This had little effect” (2001, 130). In such cases, the pattern is recycled until finding a response that provokes either a positive evaluation or a negative one with no possibility of retrieval (e.g. the teacher was removed from the classroom and sent to professional development boot camp to address his use of inappropriate teaching strategies).

Hoey (2001, 145-169) distinguishes variations of problem-solution patterns:

Goal achievement, Opportunity-Taking, Desire Arousal-Fulfillment, Gap in

Knowledge-Filling the Gap) but demonstrates that all these can be summarized in the pattern represented as *SPRE* where *S* stands for the situation, *P* for the problem, goal, need of knowledge, etc (depending on the case), *R* for the response, the way of achieving a goal, etc. and, finally, *E* represents a positive evaluation (the pattern ends) or a negative evaluation (the pattern is recycled).

USE A CHART OR THE FLOW CHART HERE

(Hoey 2001:133)

Figure 1. Representation of range of Problem-Solution patterns available

OR

PROBLEM-SOLUTION PATTERN

1- Situation

2- Aspect of situation requiring a response (i.e. problem)

3- Response

4a. Positive Evaluation and / or result: end of story and pattern

OR

4b. Negative Evaluation and or result

5a. The pattern is recycled and continuously goes back to 3 until positive solution found.

5b. The negative evaluation is so strong that it cannot be recycled, end of story and pattern.

e.g. 1- I was a teacher of kayaking

2- One day some students came up to me unable to roll their boats

3- I taught them text analysis

4b. This however had little effect (END OF PATTERN OR BACK TO THREE)

3a. Then I taught them the “C to C” roll

4a. Now they all kayak the Grand Canyon and hit all their rolls!

According to Hoey, the problem-solution pattern is “lexically signaled” either by means of “inscribed signals” or direct semantic references to the text type (e.g. use of the words *problem*, *solution*). “Inscribed evaluations” function as direct signals of problems (e.g. *unfortunately*) or by means of “evoking signals” (e.g. *had no money*). One or more of these signals serves as trigger for the problem-solution pattern, in that it makes the pattern visible to the reader (2001, 140). (MARGIN: CCSS Writing standard 2; Language standards 3 and 6))

Inquiry Unit Idea: “What are your civil rights and how can you best protect them?”

Composing to Plan for Problem-Solution

A good problem-solution paper addresses a problem that is *worth pursuing* and *can be solved practically*. Again, to be an informational text, the problem and solution are already widely understood and the student is essentially writing a report. The first step in planning is identifying problems, (MARGIN: LESSON IDEA) which often involves calling current situations into question. We like to start close to student experience, helping them to identify problems.

We often ask students to list several groups they belong to in some way – these could include English and other classes or a bus route, or a sports team, the fan group of a team, a club, interest group, video game forum, social network, etc. We then ask students to brainstorm as many problems facing each group as they can.

Prompts can include: “what are the purposes of this group?”, “what problem/s come up for you?”, and/or “what obstacles, inefficiencies or irritations come up in fulfilling your purposes?” Students can next be asked to identify individual problems and asked: “What did (or could) you do about this?”, which foregrounds the seeking of solutions, and then “what was (might be) the result?” and “what would constitute success?” which implies an evaluation of the attempt at a solution. (Notice how students are reviewing the SPRE heuristic) (MARGIN: CCSS Writing standard 7 for short research)

Another great activity for composing to plan is called **Our School** (MARGIN: LESSON IDEA). We’ve often used this one in the introduction to an inquiry unit built around the essential question “What are civil rights and how can we best protect them?” (Personal connection! Ever meet a seventh grader who doesn’t think his civil rights are being violated all the time?)

We've begun work on this question by posing a sub-question: How does our school violate students' civil rights? Students work in groups writing down ideas, then record them on the board. It doesn't take too long for the whole board to be filled!

You can then ask students to underline the most compelling problems and then circle those problems to which they think they might be able to provide an agreeable, practical and workable solution. Students choose a problem that is both underlined and circled to write about throughout the unit. Their final paper will be to propose a solution to this problem that can be supported by historical data from their study of civil rights. (We realize that this is using the problem-solution structure in service of an argument, but again, this is how this thought pattern is typically used.) (MARGIN: CCSS reading standards 7-9; writing standards 7-9)

If students continue to pursue this kind of inquiry they have a great advantage. They can write as an expert with knowledge and from the authority of their own experience arguing for solutions to real problems that they know about.

Another activity is to have students work in groups to fill out the problem-consequence chart. (MARGIN: LESSON IDEA) (Exhibit attached)

If students are writing a problem-solution report of established problems and solutions, they must meet the challenge of coming to understand the social context of the problem and the problem itself, as well as attempts to solve the problem and explanations for why such attempts have worked or not. Doing so will require research, wide reading, perhaps including interviews of expert, etc. (MARGIN: CCSS writing standards 7-9)

As students select their own topics they need consider two crux moves: the problem- solution pattern works if you can provide an explanation of the problem and provide a justifiable solution to the problem. Before we accept a topic from a student, we therefore ask them to respond to the following prompts for decomposing a task (MARGIN: LESSON IDEA):

Develop a rationale for your topic: why it matters, why it's a problem, and why it has or can be solved. (The brainstorming strategies from the listing/naming chapter can help here.)

Define your initial understanding: summarize and clarify what you know about the problem and what you think you know about potential solutions. (Many of the strategies from the summarization chapter can assist here.)

Determine what you need to learn: develop questions to help you begin your research. What data sources are available to you? Develop a plan for getting the data you need. (Some of the process description strategies, like brainstorming a flow chart, can be helpful here. This task decomposition can lay out a protocol or plan of how to pursue their research.)

One of the things we emphasize to our students: Don't jump to *any* conclusions—Keep all your ideas categorically tentative!

And one more: Research, research, research. – creatively research - seeking out other perspectives! (This typically provides an opportunity to teach students how to do searches, judge validity of data, observe, take notes, interview, etc. as needed.) (MARGIN: CCSS Writing standards 7-9)

Composing to practice problem-solution

As we noted above in our discussion of Hoey, there is a vocabulary that signals patterns. These signals occur particularly in introductions, transitions, conclusions, and in expressions of semantic relationships. In an ingenious study by Galán and Pérez (2004), these researchers found that studying language cues along with text patterns greatly enhanced comprehension and the capacity to flexibly use such patterns in composition.

Following are the language cues they highlighted for students to notice and use when reading and composing problem-solution patterns for personal-oriented problems. Rather than memorizing such a list we suggest doing think-alouds (MARGIN: LESSON IDEA) of mentor texts where students circle and identify such words, and keep anchor charts recording the words and what they signal. This strategy can obviously work with any text structure. (MARGIN: CCSS writing standard 7 for short research, Reading standards 4-6, Language standards 3-6)

Excellent mentor texts for problem-solution include children's books such as *Should I Share My Ice-Cream* by Mo Willems, *Pirates Go to School* by Corine Demas, *Memoirs of a Goldfish* by Devin Scillian, and many of Kevin O'Malley's books.

Of course, problem-solution patterns can be found easily in newspapers and news magazines, and in electronic form on the Internet.

PROBLEM signals (personal)

Adjectives

Ashamed, anxious, bold, cheeky, concerned, disgraceful, distressed, disturbed, embarrassed, embarrassing, funny, humiliated, mistaken, nervous, overwhelmed, rude, sad, surprised, worried.

Nouns

Anxiety, boldness, cheek, concern, disgrace, disrespect, distress, embarrassment, humiliation, insolence, mistake, misunderstanding, nerve, rudeness, sadness, shame, situation, shyness, surprise, worry.

Verbs

To be ashamed, to become anxious, to bother, to blush, to be concerned, to confuse, to disrespect, to distress, to disturb, to embarrass, to forget to humiliate, to mistake, to misunderstand, to show up, to trouble, to undergo, to upset, to worry.

SOLUTION signals (personal)

Adjectives

Cheerful, delighted, grateful, (un)happy, miserable, (un)pleased, relieved, (un)satisfied, (un)solved

Nouns

Attitude, conclusion, consequence, decision, excuse, delight, happiness, idea, reaction, relief, result, satisfaction, solution.

Verbs

To accept, to apologize, to become aware, to cheer up, to conclude, to deal with, to decide, to do about, to excuse, to help, to make up one's mind, to manage, to meditate, to please, to react, to realize, to reflect, to satisfy, to solve, to think out, to work out, to work things out.

LINKING WORDS

After, afterwards, consequently, eventually, finally, however, in the end, so, suddenly, then, therefore, thus

Another thing we like to do is to provide students with **problem-scenarios** (MARGIN: LESSON IDEA) and ask students to discuss the problem and their possible causes, solutions, etc In our unit on civil rights, we've used this one that fits our civil rights unit quite well: Recently, many refugee families have moved to our town. The children of these families are always subjected to lack of cultural resources and sometimes subjected to name-calling, threats and bullying behavior.

Students can be asked to do research on-line or elsewhere and present solutions to these problems in multimodal formats. Such a project can easily be undertaken as homework. They can then easily begin to generate specific problem scenarios of their own for discussion, related, as always, to the conceptual inquiry at hand. (MARGIN: CCSS Speaking and Listening standards 1, 2, 4, Writing 7-9).

Doing such work requires students to describe the situation, problem, and possible responses and their evaluation. Students can then write their own real or hypothetical situations for their peers to analyze in the same way.

Worksheet (using issues that came up during the "Our School" discussion) (MARGIN: LESSON IDEA)

- Because of suspicion of drug dealing and drug use in schools, student lockers are being searched by sniffer dogs and administrators.
- For the same reason, all teachers and all athletes must undergo random drug testing. Students in other activities are exempt. So are all staff members.
- Because many students have been sleeping at the Occupy Boise camp and coming to school in dirty clothes, and in clothes proclaiming political advocacy supporting the protesters, the school has created a new dress code requiring students to wear clean clothes and prohibiting political advocacy expressions.
- Students using cell phones during class time have had their cell phones confiscated until the end of the grading period.
- The school cafeteria often serves food that violates the dietary restrictions of students due to health concerns and religious observances. This particularly affects students who get free lunch.

Alone or in groups, apply the SPRE frame to each, rank the problems in order of seriousness, or seriousness as a threat to civil rights, then generate possible actions or solutions to the problem justifying your rationales for success.

As students read the text materials and do classroom activities, students can “test” their solutions against those that have or are being tried in the world (an opportunity for research), refining and/or modifying their own solutions as they see fit. (MARGIN: CCSS speaking and listening standards; writing standard 7)

Activities like these reinforce the SPRE heuristic and build conceptual and procedural knowledge necessary for the inquiry. Because we want our students to make connections from the inquiry to their own lives and the world, we ask them to scan the newspaper or Internet news sites or interest sites and to analyze problems. Prompts such as those in the following **problem-solving protocol** (MARGIN: LESSON IDEA) can help:

- What is the context/situation of the problem?
- Does the problem really exist? How can we tell?
- What is the history of the problem, the story behind it, how it has come to our attention?
- Who is affected by the problem? Who is not affected?
- What are the current consequences, and possible future consequences if the problem is not addressed?
- Does anyone benefit from the existence of the problem?

(adapted from Axelrod and Cooper, 1999, p. 383)

We emphasize getting students to ask: What is the problem? Who says it is a problem, and why do they say so? If students can gather some facts and figures as they do their explorations, put them in here and make sure they cite their sources and references. (MARGIN: CCSS tie to short research projects)

These activities help students to practice employing organizing heuristics for drafting problem-solution structures.

Likewise, it’s important to creatively consider innovative solutions- to get outside the box. Brainstorming three or more possible solutions to a problem and explaining how these would address causes is one step. We call this activity **3 or more or snore!** (MARGIN: LESSON IDEA) Another is to research solutions that have been tried or proposed, and to interview experts who might be available in the community or on-line. (MARGIN: We have found that many experts willingly email with students, and this helps to meet CCSS Speaking and Listening Standards as well as many of the reading and writing standards.) We ask students to consider not only solutions that eradicate the problem but also those that would *reduce* the symptoms and effects, or *first steps* to take. We ask them to consider combining approaches and trying new angles.

We ask students to consider: what steps towards the solution seem most timely, doable and useful? How will you gauge and evaluate the success of the intervention? What will count as progress or success? Students are learning to articulate and apply critical standards for problem-solution as they do so.

We also emphasize internalizing these questions (MARGIN: IMPORTANT CLASSROOM ROUTINE): Why will your solution work? How will you address objections, e.g. if the proposal may cost a lot of money, explain why it will be worth the money, or how it can save money in the long run, or whatever.

It's important to establish criteria (MARGIN: IMPORTANT CLASSROOM ROUTINE) for solutions. Since resources for solving problems like money, time, people, energy and technology are always limited a good writer needs to establish selection criteria to pick reasonable solutions to the problem. These criteria make the solutions realistic rather than fanciful. Describing the implementation of a solution is a kind of process description so the strategies described in Chapter 8 are useful here.

It's always important to consider and actively imagine the audience (MARGIN: IMPORTANT CLASSROOM ROUTINE), to think about who they are, and their familiarity with the problem, how they are implicated, their biases towards solutions, objections they might have, as well as how to proactively address these. We've found discussing the audience in small groups and listing possible objections like lack of money, comfort with the status quo and the like is helpful to students. Drama activities (MARGIN: LESSON IDEA) where group members play an audience of people resistant to the proposal is often helpful during the practice and drafting process. (MARGIN: CCSS writing standard 4 for audience consideration and rhetorical stance)

What's important is for students to practice identifying and describing the situation/context (the chapter on description can help with this), the nature of the problem, possible/best responses/solutions, and an evaluation of the response in terms that a particular audience will understand and accept.

First-Draft Composing of Problem-Solution

As always, we propose that students read and think aloud with mentor texts (MARGIN: IMPORTANT CLASSROOM ROUTINE) and to keep an anchor chart (MARGIN: IMPORTANT CLASSROOM ROUTINE) of what they notice. They should use these texts to articulate criteria for the pattern, which can then be used to articulate critical standards, create an assessment rubric or checklist based on the most important criteria (MARGIN: IMPORTANT CLASSROOM ROUTINE). (MARGIN: CCSS Reading standards 2, 7-9)

Here's an example from a recent group of students. Again, we try to keep criteria to the most important 3-5 so that instruction, peer response and the composing process can be focused like a laser on what is most important. Criteria should be articulated by students and reflect what they need to learn about the text pattern during the unit to be successful with the final composition.

- *Engagingly introduces and clearly describes the problem*, including the causes and effects, and the consequences if the problem is not resolved.
- *Clarifies the criteria* that can be used for evaluating and judging options
- *Describes/Proposes various alternate solutions* in a logical, coherent way and gives detailed steps for carrying out the "best" solution.

- *Shows how the solution actually works/will work* to solve the problem and address its root causes.
- *Uses language cues* to navigate the reader through the text.

Peer Response. (MARGIN: LESSON IDEA; IMPORTANT CLASSROOM ROUTINE) Students should already have plenty of practice understanding and meeting the criteria through the “composing to practice” phase. The criteria should also work to guide students through the steps of writing the paper. Finally, the criteria should work to help peer groups respond in helpful and substantive ways as students work through multiple drafts.

Some helpful hints for peer responders:

- Read a draft straight through, then record:
- General impression: write 2-3 sentences describing the general impression given.
- Praise: cite a few elements of the composition that seem particularly effective.
- Read again, then record:
- Questions: what needs clarified or elaborated?

Responders might share a brief description of the nature and importance of the problem to see how it matches the author’s conception. Likewise the reader points out the reasons the proposed solution makes sense and the steps for implementing it. If something is missed, the author knows this must be made more clear. (MARGIN: CCSS Reading standards 1-6)

Final Draft Composing of Problem-Solution

Students are often more motivated to compose stellar final drafts if there will be a **public sharing** (MARGIN: IMPORTANT CLASSROOM ROUTINE) of their work. For problem-solution, these can often be presented in public forums, to school boards, parent groups, or to any group that might be able to support or use the proposals. This was particularly apt for the civil rights unit, and presentations were made to school administrators and local legislators. Following this, many students engaged in public service awareness campaigns about civil rights issues facing members of our community. At Jeff’s school they hold a “Learning Fair” every quarter to which the public is invited. These presentations can be put into multimodal form to meet CCSS standards for multimodal composing and for public presentation. (MARGIN: CCSS LINK)

Of course, rehearsal, feedback and proofreading are all very important before making a public presentation. (MARGIN: CCSS speaking and listening standards 1-6) Jeff has two great stories about such presentations. During a unit on “What is teen health?” one group of students became very interested in sleep deprivation research, even going so far as to interview a Mayo Clinic sleep researcher. They found that researchers agree that high school students need to sleep in and that it makes much more sense for elementary school to start earlier in the day and high school to start later. The school board agreed to hear their presentation, replete with multimedia data displays. It was well received but then the students got *quite* a lesson on bus schedules, sport schedules, credits for graduation and much else! They learned that the problem was much more complex than they had thought, and went back to rethinking their solution!

In another case, a group of students in an alternative program presented to the school board about maintaining their program - which the board was considering eliminating due to poor student attendance. Attendance was perfect during the three weeks in which the students researched and created their presentation about solving the problem of poor attendance while

maintaining the positive effects of the program! They gave a fantastic presentation and the school board voted unanimously to maintain the program. The next day, not one of the students came to school! The point of their presentation: allow us to do meaningful and immediately applicable work, and students will come to school! We suppose that they did not foresee the next meaningful project once success on this one had been achieved!

Composing to Transfer Knowledge of Problem-Solution

Students can always write a **process analysis** (MARGIN: LESSON IDEA) of the process they went through to compose their paper and/or presentation. They can do a P-Q-P for themselves: praising what they think they did best and what went well, what questions they still have about composing problem-solution patterns, and what they will do the same and differently next time they write one.

Likewise, students can write a short one page paper reflecting on what they learned about their topic from the pattern, as well as what they learned about using and composing the pattern. We ask students to explain what assisted and contributed to their learning. We ask them to consider what they learned from their readings, from the planning and practice writing, from the drafting, use and revision of criteria and peer response, as well as from the reflecting they are doing. How does problem-solution tend to make use of other patterns like description and definition?

We also ask them to consider the nature of problem-solution patterns and policy solution proposals in the world – why are they important in both personal and social ways? What contributions can they make? In what situations are they most useful and does the student foresee using them or being affected by their use?

This develops meta-cognitive awareness of their own learning process, and allows them to make plans for future more independent ventures into problem-solution patterns.

We also always like to have them review the problem-solving that they are doing in other classes and to identify and make use of the strategies they have learned in our class. This fosters immediate transfer. (See Problem Sort exhibits for Physics and think aloud for math) (Exhibits attached)

The Cause and Effect Thought Pattern

As we have already explained, cause and effect is typically a part and parcel of problem-solution patterns. Still, because it is sometimes taught as a separate pattern, let's turn some separate attention to it here.

As human beings moving at the speed of life, we are constantly confronted with problems that require us to consider causes. Just today, there were bubbles in the glasswork Jeff's wife Peggy pulled out of her kiln. She needed to know what had caused the bubbles: her kiln shelf, moisture in the kiln, the temperature, the glass? Jeff's back bike tire was losing air – was the tube bad, or the valve? Did he have a goathread pricker in the tire? If that was the cause, then could the problem be solved by tightening the valve and extracting the goathread and using goo?

Michael just got back from a meeting with his financial advisor. Their discussion was focused almost exclusively on what's causing the current market volatility. He came home to find that some of his Christmas decorations had fallen down. In order to decide what to do, he had to determine whether the fault lay with the way he put them up or with the many years of wear-and-tear they had endured.

Jim spent some time with friends brainstorming the causes of the Cubs long World Series drought – the longest in the major leagues. More positively they discussed the possible effects that might follow from the hiring of a new General Manager and some recent trades.

In all cases, we needed to identify the cause of a problem and its effect before we could experiment with solutions leading to a different desired effect.

Cause and effect essays are concerned with the why: why things happen (causes) and what happens as a result (effects). The effects typically constitute some kind of problem - which is why cause-effect is usually a subset of problem-solution and often embedded in that pattern. And sometimes we are trying to avoid certain effects in the future so we go from asking "why did that happen?" to "How can we keep that from happening?" Conversely, we may be proactively trying to improve a situation, so that our positive actions can be causes for reformed effects.

How the Cause-Effect Pattern Works

Cause-effect is about asking "Why?" A simple tool: to define the cause of something, ask yourself "why". Ask yourself "what" and you will determine the effect. Well, OK, that's good as far as it goes, but it does get considerably more complicated than that.

"Determining **causes and effects** is usually thought-provoking and quite complex. One reason for this is that there are two types of causes: *immediate causes*, which are readily apparent because they are closest to the effect, and *ultimate causes*, which, being somewhat removed, are not so apparent and may perhaps even be hidden. Furthermore, ultimate causes may bring about effects which themselves become immediate causes, thus creating a *causal chain*. For example, consider the following causal chain: Sally, a computer salesperson, prepared extensively for a meeting with a client (ultimate cause), impressed the client (immediate cause), and made a very large sale (effect). The chain did not stop there: the large sale caused her to be promoted by her employer (effect)."

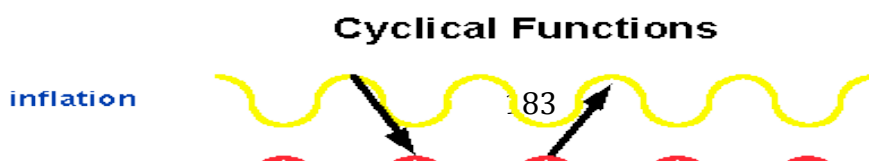
(Alfred Rosa and Paul Eschholz, *Models for Writers*, 6th ed. St. Martin's Press, 1998)

(Exhibit: Cause and Effect chart here)

The social research methods (www.socialresearchmethods.edu) website maintains that three criteria must be met to maintain that you have evidence for a causal relationship: Temporal precedence, Covariation of the cause/effect, and No alternative explanation.

Let's take the temporal precedence issue first. Here is what the Social Research Methods URL has to say about the complexity behind temporal precedence: "First, you have to be able to show that your cause happened **before** your effect. Sounds easy, huh? Of course the cause has to happen before the effect. Before we get lost in the logic here, consider a classic example from economics: does inflation cause unemployment? It certainly seems plausible that as inflation increases, more employers find that in order to meet costs they have to lay off employees. So it seems that inflation could, at least partially, be a cause for unemployment. But both inflation and employment rates are occurring together on an ongoing basis." The authors go on to explain that this kind of cyclical situation can involve processes that influence each other making it very challenging and

complicated
to establish a



causal relationship.

Before you can show that you have a *causal* relationship you have to show that you have some type of relationship. For instance, consider the statements:

if X then Y

if not X then not Y

If you observe that whenever X is present, Y is also present, and whenever X is absent, Y is too, then you have demonstrated that there is a relationship between X and Y.

Let's illustrate this pattern with a teaching problem. I teach close reading through think-alouds of particular text types, then my students improve in their capacity to read that kind of text. If I do not do modeling of close reading of particular a particular text type through think-alouds, then my students' capacity to read these kinds of text is not improved.

This provides evidence that the intervention and the result are related. Notice, however, that the existence of the relationship doesn't provide evidence that the teaching intervention (think-alouds in this case) *caused* the outcome – since there might be other factors involved. Demonstrating a relationship does not demonstrate cause. This is sometimes referred to as the "third variable" or "missing variable" problem. It is also the difference between demonstrating correlation and demonstrating causality. So it is necessary to brainstorm all alternative explanations for the observed effect and to rule them out.

(<http://www.socialresearchmethods.net/kb/causeeff.php> September 23, 2011)

if more of the intervention then more of the improvement

if less of the intervention then less of the improvement

Berke also describes various criteria for causation: 1) uniformity, i.e. two events (X and Y) are “so closely and conditionally connected that one cannot occur without the other” (205) which subsumes temporality and covariation, and 2) sufficiency, i.e. that the cause or number of causes explored are sufficient to explain all the effects. Add the criterion that there are no other possible explanations and Berke is in agreement with the social science research.

We put these insights into a simple heuristic of crux moves for establishing causality: T-C-S-NO: Time (temporality)-Continuity (covariation)-Sufficiency -No other explanation.

Inquiry Unit Idea: How can we really establish the truth?

Composing to Plan for Cause-Effect

As usual, we have students brainstorm situations in which they needed to identify the cause of some effect (MARGIN: IMPORTANT CLASSROOM ROUTINE) – e.g. why someone is angry with them, or why their grades are going down. We then ask students to keep a log throughout a day where they observe the purposes and possibilities of discerning cause and effect relationships. We make an anchor chart of purposes and contexts that reward understanding causality (MARGIN: IMPORTANT CLASSROOM ROUTINE).

We most recently embedded cause and effect into a unit on truthfulness, framed by the question “How can we really establish the truth?” which followed our unit on “What are your civil rights and how can you best protect them?” since students had become very interested during the civil rights unit in how to establish the truth. The students generated subquestions like: What causes people to lie, twist the truth, and tell the truth? What are the effects of lying, twisting and truth-telling in different situations? How does situation and perspective effect what seems “true” to you? What are obstacles to perceiving the truth? (MARGIN: CCSS writing standards 4 and 5) The culminating essay explored the causes and effects of deception, delusion and attempts to find the truth in a novel, movie, or historical case.

During the unit, we read excerpts of Kathryn Schulz's fascinating book *Being Wrong* (2010) along with Elie Wiesel's *Night* and Avi's YA book *Nothing but the truth*.

The final composition was to identify the causes of deceptions, delusions, lies, cover-ups, tweaking of the truth, etc. in at least one historical or current event, and to consider the effects of these failures to tell the full truth. (MARGIN: CCSS Writing standard 4; Reading standards 1-3)

Using what we had learned in the previous unit, we first brainstormed what the causes might be for bullying and civil rights abuses, failure to implement bullying and civil rights protections for different groups, to enforce basic civil rights and anti-bullying measures, etc. To kick off the next phase of the unit at hand, Kaidi Stroud, the teacher with whom Jeff was working, developed the following assignments to provide both conceptual frontloading about the inquiry topic regarding how to establish truth, but also procedural frontloading into practicing the identification of causes and effects.

Autobiographical Response:

Establishing Truth

(MARGIN: LESSON IDEA)

Journal prompts:

It has been said that there are at least two sides to every story. What do you think this means? What could possibly be the underlying causes behind different versions of events or situations?

Using the SPRE heuristic:

Think of a recent disagreement you've had with a friend, family member, or teacher and tell the story. What was the situation? What caused the disagreement? What was your side of the story? What was the other side/s? What might have caused the differing perspectives? What problems were caused as a result of the disagreement? What were the effects? What possible solutions might there be to reconciling the problem? How would you evaluate an effective response?

After writing your story, respond to this prompt: Are there really two (or more) sides to every story or is one side the real truth and the other sides just wrong?

Truthfulness Ranking

Each of the following scenes describes an attitude towards truthfulness that is held by a character you will meet later in our unit reading. Read each scene and rank them, from the scene that best fits your ideas, beliefs and values about responsibility to truthfulness (1) to the scene that least captures your ideas, beliefs and values about truthfulness (3). Make sure you can support your opinions about what constitutes responsibility to truthfulness in different situations. Be sure to identify perspectives you have a problem with, the possible causes and effects of such a perspective, as well as how that problem might be resolved for you. You'll be sharing your responses in groups and then with the whole class as we discuss what we think our responsibility is to ascertaining the truth.

____ A. Jennifer Stewart was the education reporter from the *Manchester Record*. As such, she was intensely interested to cover the story she heard about a local student who was suspended from school for singing the national anthem during the school's tape-recorded playing of it over the loud speakers. While Ms. Stewart interviewed the student in question, two other individuals

were present who often interrupted the student or answered questions in his place. When Ms. Stewart felt as though she had an accurate representation of the student's story, she attempted to contact the school superintendent, principal, assistant principal and the teacher in question. They were unwilling or unable to answer her questions. Despite her inability to fully fact-check the story from all perspectives, she decided to run the story.

_____ B "Old Horse" was a retired algebra teacher. He was known amongst the faculty and students to have a sharp tongue. Everyone called him "Old Horse" because of his looks. Part way through the school year, Old Horse got a new student in his class. His classmates nicknamed him Rabbit because of his buck teeth and hare lip. Old Horse stayed after school with Rabbit to help him catch up on algebra, even though he knew becoming friends with the boy would make him more of an outcast. Then one day -- out of the blue -- Old Horse embarrassed Rabbit in front of the class. Shortly thereafter, Rabbit made new friends. Old Horse never told anyone why he treated Rabbit so meanly, but it would appear as though he had a master plan for Rabbit.

_____ C There was once a boy who lived down the street from Walter, a boy who had inflammatory rheumatism (a disease that causes joint pain). This boy was surprised that Walter didn't have to go to school but fished any day of the week he wanted. One day, after spotting Walter by the water on his way to school, the boy's legs and back began to hurt. He decided that he had inflammatory rheumatism as well. He told his teacher he ached all over and she sent him home right away. Since Walter had the illness and went fishing all day, this boy decided that fishing was the most logical way for him to spend his time, too. Though there was no medical diagnosis of inflammatory rheumatism from a doctor, the boy did feel better fishing instead of going to school.

Nothing but the Truth:

An Opinionaire

Identify whether you agree (A) or disagree (D) with each statement. Then choose one statement that you feel particularly strongly about and write a brief comment about what in your experience of the world causes you to feel this way. Then choose one statement you disagree with strongly and do the same.

We will discuss what problems are avoided or caused by adhering to different statements.

_____ 1. Telling the whole truth is always the best.

_____ 2. It is ok to stretch or hide the truth sometimes, especially to protect or help someone.

_____ 3. There is only one real truth.

_____ 4. There are many real truths.

_____ 5. Truth is absolute -- it is what it is and it never changes.

_____ 6. Truth is malleable -- it can change and bend over time, with context and perspective, depending on who is looking at it.

_____ 7. Knowing the truth is an intellectual (thoughtful) process.

_____ 8. Knowing the truth is an intuitive (emotional) process.

_____ 9. It is not possible to ever fully know the truth about something.

_____ 10. It is ok to ignore facts or evidence, if it interferes with your truth.

_____ 11. Almost everything we think we know is actually stuff we believe.

_____ 12. There are not different realities, but there are different ways of perceiving reality.

These two activities serve to personally connect students to the inquiry, build motivation, highlight different perspectives, and help students begin to generate ideas about cause and effect. (MARGIN: CCSS focus on multiple perspectives; Reading 4, 9)

Reading newspaper articles or paying attention to new reports on various forms of electronic media about situations involving personal, group, local and global problems can also help students consider and plan what they might want to write about, and lead to discerning or inferring cause and effect. (MARGIN: LESSON IDEA) Every day the newspaper is filled with disagreements about different issues, and articles describing people telling the truth, speaking truth to power, being delusional or in denial, or just lying like crazy. We ask students to compose journal responses to the news stories they've been following, rating how well causality is established and even ranking how well authors establish causality, listing both strengths and weaknesses in their approaches. (MARGIN: CCSS Reading 5, 6)

Before leaving the planning phase, we like for students to identify potential topics for their culminating composition. We like for them to consider the inquiry, their interest, the interest of an audience, the importance and possibility of establishing causality (or the lack of it), what they already know, AND data sources for finding out more. If they can address all these aspects about a topic, we have them put that topic on their possible topic list in their journal (MARGIN: LESSON IDEA). (MARGIN: CCSS Writing 7)

Composing to Practice Cause-Effect

The crux move here is establishing causality. So, how *do* we establish a cause-effect (causal) relationship? It is rare that there is a single cause for an effect, particularly with complex personal, social, or content area problems, so it is important to practice speculating on multiple possible causes. For example, present a cause and ask students in role, e.g. as authorities at an inquest or some other mantle of the expert role (see Wilhelm, 2003/2012), if this single cause is sufficient to explain the effect. If not, have them brainstorm other possible causes.

Berke (2007) suggests having students respond to and judge the causality in morals or parables, such as this Sufi one:

“What is fate?” the Mulla Nasrudin was asked.

“An endless succession of intertwined events, each influencing the other.”

“That is hardly satisfactory. It does not accommodate cause and effect.”

“Very well,” said the Mulla, pointing to a procession. “That man is being taken to be hanged. Is this because his parents neglected him which leads him to anger, or because someone gave him silver that enabled him to buy a knife with which he committed the murder, or because someone saw him do it and witnessed against him, or because nobody stopped him, or for some other reasons?”

Ask students how they would respond. (MARGIN: LESSON IDEA) This activity will help them to distinguish ultimate and immediate causes, as well as explore different ways of establishing causality. As they test out what they think are the causes, they can apply the T-C-S-NO heuristic.

At the time we are writing this book, there is a popular series of advertisements for DirecTV that plays on extended causal chains that begin with the ultimate cause that you get cable instead of DirecTV. “You get your cable bill. The numerous surcharges make you angry. Your wife thinks you have anger management problems. She leaves you. You become single. You adopt a cat for companionship. You grow a scraggly beard and never wash. You never go out and begin eating cat food. You adopt numerous cats for companionship. Don’t become stray pet collecting person: switch to DirecTV.” Other ads present causal chains that end with: “don’t end up lying in a roadside ditch”, and “don’t be a person whose grandchildren wear dog collars.” Students can have fun critiquing the causal chains presented, and in proposing their own causal chains emanating from a single ultimate cause.

We like for students to engage in free reading and to participate in movie clubs related to the inquiry (Wilhelm, 2004/2012). In this unit, we encouraged them to read and watch mysteries and spy thrillers, which afford many opportunities to consider how the truth is both obscured and ascertained, and also many opportunities for considering causality, particularly in the domain of human motivations.

Another activity we like is to get students to create flow charts that identify causes (why, because of) and reasons for certain effects (MARGIN: LESSON IDEA), connecting these with arrows to certain results and effects (what), and then to the conditions and consequences of this effect, leading to possible solutions or corrections, etc. We ask students to consider primary or immediate causes as well as ultimate or necessary causes. We remind students that effects are often the problem in a problem-solution paper.

Student Example: (ED: We could create A FLOW CHART OF THIS)

YOUR CAR WON’T RUN– WHAT CAUSED THIS?

OUT OF GAS.

SOMETIMES THERE ARE MULTIPLE CAUSES OR A CHAIN OF CAUSES – KIDS COULD MAKE LISTS OF FLOW CHARTS

YOU WERE DRAGGING A TRAILER SO YOU BURNED MORE GAS THAN USUAL WHICH MEANT YOUR REGULAR ROUTINE FOR GASSING UP DID NOT WORK. YOU WERE CROSSING THE DESERT AND THERE WERE NO GAS STATIONS. THE GAS GAUGE DOESN’T WORK. YOU WERE WORRIED ABOUT A SICK FRIEND AND WERE DISTRACTED FROM MONITORING THE MILEAGE.

- WHAT ELSE HAPPENS BECAUSE YOU RAN OUT OF GAS: YOU ARE LATE FOR AN APPOINTMENT. YOU DON'T GET YOUR HOMEWORK DONE. YOUR FRIENDS WORRY about you – you get in trouble from your parents – you get grounded – you lose your girlfriend because you are grounded.

When students have completed such a flow chart, they can apply the T-C-S-NO heuristic to see if they have covered the ground in reasonably establishing causality between certain causes and effects.

Composing to Draft Cause-Effect

It can always be helpful to writers in the drafting phase to decompose the task at hand and make a schedule – setting goals in the order they need to be achieved and even putting due dates on them. As always, we ask students to use what they have learned through planning and practice to articulate critical standards and criteria. (MARGIN: IMPORTANT CLASSROOM ROUTINE)

Here's an example that a group of seniors came up with

CRITERIA for Cause and Effect

- States the cause/effect relationship being examined. – in introduction (for a control claim) or in conclusion (for a culminating claim).
- Focuses on an important subject involving causality AND illustrates the relationship between causes and effects; distinguishes between a cause and an effect.
- Establishes causality according to criteria of time, covariation, uniformity, sufficiency and elimination of alternatives.
- Provides an effective organizational strategy (cause-to-effect, effect-to-cause, or cause/effect chain of events), one which is clearly best suited for the topic, purpose and audience.
- Uses appropriate transitional words and phrases throughout the writing to keep relationships among ideas clear. Things flow.

Peer responders can follow a protocol like the following (MARGIN: LESSON IDEA)

Read the draft, and tell the author:

- Relay your general impression, identifying an aspect of the paper that seemed particularly effective.

Reread the draft: Tell the author

- How the introduction oriented and affected you
- How you knew that you had enough background information, or not. Point out places where those less knowledgeable than you might need more information or explanation.
- How did s/he make the topic important and compelling? How could s/he do this even better?
- List the causes and effects that were explored.
- What was compelling and convincing in the relating of causes and effects? What might have been missed?
- How did the author establish her own authority and credibility?

(MARGIN: CCSS Writing 2, 4, 5, 7-9)

Final-Draft Composing of Cause-Effect

It's always good to have students identify transitions and other navigational devices as they read, and to create anchor charts for reference (MARGIN: LESSON IDEA). Then when they write their essays, they can use these transitions and other

devices to help navigate the reader, and to justify and demonstrate relationships among causes and effects. (MARGIN: CCSS Writing 4)

Some Transitions for Cause and Effect:

Purpose:

for the purpose of,	in the hope that,	for fear that,	so that,
with this intention,	to the end that,	in order to,	lest
with this in mind,	in order that,	so as to,	so,

Cause/Reason:

for the (simple) reason that,	being that,	for,	in view of (the fact),	inasmuch as,
because (of the fact),	seeing that,	as,	owing to (the fact),	
due to (the fact that),	in that	since,	forasmuch as,	

Condition:

on (the) condition (that),	granted (that),	if,	provided that,	in case,
in the event that,	as/so long as,	unless	given that,	
granting (that),	providing that,	even if,	only if,	

Effect/Result:

as a result (of this),	consequently,	hence,	for this reason,	thus,
because (of this),	in consequence,	so that,	accordingly	
as a consequence,	so much (so) that,	so,	therefore,	

Consequence:

under those circumstances,	then,	in that case,	if not,
that being the case,	if so,	otherwise	

It's always good too to help students proofreading for the kinds of issues you see that are particular problems for cause and effect writing. For example, in our experience, it is helpful to have students look for repetition (MARGIN: LESSON IDEA). We have them circle repetitions of any kind as well as of transitions like "the reason is because" or "the reason for" and use variations like "what follows is". The author is then asked to justify how the repetition works to create a desired effect, and if it does not, can brainstorm possible variations to eliminate needless repetitions and provide variety.

Sometimes students need help with other language structures and with presentation of evidence, particularly numerical. The URL

<http://lilt.ilstu.edu/gmclass/pos138/datadisplay/sections/goodtables.htm>

and several others have great suggestions for presenting numerical data, particularly for cause and effect essays. Numerical data can establish patterns that support causal relationships across cases, one of the crux moves of establishing causality, particularly through co-variation. (MARGIN: CCSS Language standard 3)

In our unit, we read excerpts from *Damned Lies and Statistics* (Best, 2001) to explore how numbers can both express and obscure the truth. We then looked at how graphs can represent or misrepresent numerical data. Finally, we reflected on how the use of numbers and numerical data related to our essential question about establishing the truth.

Composing to Transfer Knowledge of Cause-Effect

Process analyses can lead to creating a flow chart or how-to protocol for establishing cause and effect or for using cause-effect patterns in thinking, problem-solving, or composing (MARGIN: LESSON IDEA). Students can always use the P-Q-P format (MARGIN: LESSON IDEA) to self-assess, recording what pleased them, what questions they still have about cause-effect, and what they are now prepared to do in the future, as well as when they anticipate using the structure and how they will try to improve their use of it in future disciplinary and personal work. They can also journal about what they learned about a particular topic, e.g. an aspect of establishing or approaching truth, or a cause of deception, and how that might be useful and applicable in new situations, as well as about what they learned about using this particular thought pattern.

Axelrod and Cooper (1999) suggest that students should also reflect generally on establishing causation. How comfortable were they when dealing with possibilities versus certainties, and with theorizing causality? Is there any difference in their comfort level prior to the unit and after it? How might their own prior knowledge, biases and values have influenced the causes and effects they decided to support? Who benefits from the causes and effects they established, if accepted by others? Who might not benefit? What contributions does speculating about causes make in the disciplines, in our personal lives, to society that other patterns of thinking and writing cannot make?

We like to have students design a multimodal version of their reflection, present this in a small learning group, and post this on the class wiki. (MARGIN: LESSON IDEA) (MARGIN: CCSS Speaking and Listening 1-5)

We often also have students post these reflective writings on the class wiki, and then ask students to respond to three other students, expanding on their reflections. (MARGIN: CCSS standards for collaboration)

And if they can do all of these things, they're ready to take their show on the road, that is, to transfer what they've learned to new composing situations.

Conclusion

BRINGING IT ALL TOGETHER:

WORKING TOWARDS OPPORTUNITY AND POSSIBILITY

We've been making the argument that the real power of all the informational thought patterns and text structures is in their "telos": in the *work* they can get done, and the problems they can circumvent or solve. When we categorize, organize, analyze and come to understand categories and patterns of data, as the patterns and structures explored in this book help us to do, then we are ultimately able to see problems and causes, see effects and propose solutions, proceed to making and evaluating arguments, and as a result, change our understandings and transform our behaviors in wide-awake ways.

The three of us have dedicated our lives to teaching literacy, and to both developing and promoting the most powerful methods to help students, particularly struggling ones, to read and compose in more potent, useful and transformative ways. Above all, we want our work to *matter*.

That's why we promote the context of inquiry for all reading and composing – because reading and composing are then in service of understanding and application in regards to important and compelling problems. As we recounted in the first chapter, the research supporting inquiry, construed as the rigorous apprenticeship into expertise, is compelling and unrivaled.

When it comes to any kind of learning, we want our students to go beyond what is already understood and to reframe problems, see new causes or complexity of causes, and to propose creative new solutions and evaluate innovative effects. We want them to internalize and apply critical standards for concept, procedure and genre. We want them to compose in such ways not to repeat what is already known, but to create new meanings and possibilities. We want them to resist simple and accepted explanations and ways of doing things. We want them to apply their passion and imagination to the problems facing themselves and the world.

In that world, problems abound, and the knowledge and methods to solve many of these problems have not yet been conceived nor created. As we argued in our final chapter, we need to cultivate a "tomorrow mind" versus a yesterday mind in all our students.

Jeff particularly enjoys books by Malcolm Gladwell because Gladwell is so good at complicating and reframing problems so they can be understood and sometimes solved in new ways. Right now, Jeff is reading Francis Lappe Moore's *Ecomind*, in which she argues that we misconstrue at least seven causes of our current ecological dilemma and if we reframe these we'll see that these supposed causes are in error, and this will lead us to new framings, new understandings, new hope and new solutions.

Michael is going to his book club tonight to discuss Lou Ureneck's *Cabin: Two Brothers, a Dream, and Five Acres in Maine*. The book contains lots of description, both of physical details and processes. Lots of analyses of causes and effects. Comparisons of urban and rural life and of different kinds wildernesses. Michael anticipates a rousing discussion, focusing especially on whether the building of the cabin was indeed a solution to the dislocation the author was feeling and whether analogs exist for the club members.

Jim is spending considerable time reading research on teacher induction and the kind of teacher talk that helps teachers to learn from each other. He is interested in applying these insights to his work with both pre-service and in-service teachers.

Such it is: our favorite informational authors help us to see the world in a new way, often shocking us and directly addressing our misconceptions or simplified understandings of phenomenon to deepen our understanding and lead to reformed ways of thinking and of living. This is what we want for our students.

Setting the Task Before Us

In David Schenk's book *The Genius in all of Us* (2010) he provides substantial reviews from the recent research in cognitive science and neuroscience. His point can be summarized thus: Talent is a process. It is learned. The causes of talent are interactive and dynamic, as expressed by the formula $G \times E = \text{Talent}$. Genetics TIMES Experience leads to Talent. Expertise is a specific response to environmental demands. Expertise comes from the power of process and practice. Expertise comes from assistance, "deliberate practice" and nurturance over time.

In other words, all of our students can become more expert composers and readers of informational texts if we provide purposeful contexts for using them, assistance over time, and lots of feedback that covers the five kinds of knowledge and the five kinds of composing.

The famous Anders Ericsson (e.g. Ericsson & Lehman, 1996) research established that 10,000 hours of practice is necessary to gain expertise, based partly on his finding that practice animates neurons, and builds neural pathways through the brain, which builds ever evolving new capacities. Ericsson also established that technical facility must be abetted by creativity. True expertise adds something innovative from the self. According to Ericsson expertise always involves risk taking and cultivating intellectual adventurousness.

He further asserts that expertise is a flexible mental representation of what to do in specific situations and the facility to do it. Expertise therefore requires complex adaptations and control mechanisms. This requires elaborate preparation and the use of anticipatory cues and flexible *heuristic* thought patterns. This is what we have attempted to provide and cultivate in this book for both teachers, in terms of instruction, and for students, in terms of getting the necessary reflective practice to read and compose with informational thought and composing patterns.

To summarize Ericsson: Talent is the result of acquired skill. Acquired skill requires taking a long and incremental view, constant practice, reflection and the willingness to take risks and innovate. Think of the lessons of this research for us as teachers, and for our students. Think of the promise of the CCSS if teachers K-12 work on the same few generative anchor standards for reading and composing informational text throughout the twelve years of a students' schooling, putting their own insights and innovations to play in service of this project.

Einstein once famously protested that he should not be called a genius: "I just stay with problems longer than most people" was the explanation for his insights. What if we stuck with the most generative problems throughout our careers? What if we helped our students stay with problems and processes until deep understanding and facility were achieved?

In this regard, it's important to note that the CCSS are part of a systemic educational movement, but they are only one part. They provide solid and generative goals, but not the contexts for reaching them, nor the necessary methods for achieving them. This is what must be determined by professional teachers in the contexts of their own classrooms, where we will all need to cultivate motivation, provide assistance and prodigious amounts of guided practice, and engage our students in experiencing the rewards that come from visible signs of actual accomplishment and from doing significant work together.

In short, we think that through effective instruction the goals of the CCSS and much more can be met. We hope that this book gives you ideas about how to devise that effective instruction. And even if the CCSS evolve or are not adopted in your state, the instructional models and methods we develop as a result of their influence are still apposite and useful.

Working Towards Democracy

Teaching is at once immensely challenging and tremendously sublime. At its heart, teaching is immensely hopeful work. All three of us are committed to creating learning situations and instructional assistance that actualize all of our students' potential, particularly those students who often struggle in school. And further, we are committed to helping them participate in mutually beneficial ways to the life of our democracy.

In this book, we have presented both theory and instruction devoted to developing not only competence in literacy, but competence in life. We know from our own experience that using the five kinds of knowledge/five kinds of composing heuristics develop general, task-specific, and especially text-specific processes of reading, composing and learning. Further, the instructional model shared here develops generative habits of mind: motivation, engagement, curiosity, creativity, problem-solving, flexibility, willingness to take risks, fortitude and endurance, joy in the challenge, nameable competence and reflectivity. We cannot think of a time in human history when these habits will be more essential than they are already today.

We believe that nearly anything is possible for our students if we are respectful of them and provide them with meaningful opportunities and assistance to meet important challenges. This is not just an ethereal belief. Benjamin Bloom, at the end of his career, committed himself to studying human potential (1976, 1985) and found that any student could achieve the next available goal if provided with the right assistance in a meaningful context of use.

We believe in providing instructional opportunities to all our students, and we believe that if they receive the right instruction, they will thrive and grow no matter their backgrounds or challenges, no matter how they (and we) are assessed. and measured. These beliefs put schools and teachers at the center of the democratic enterprise. And this is where we think all of us truly belong.

Activity chart

Ch 6 NAMING AND LISTING

Planning

BACKWARDS/Project: Surviving and Thriving in Middle School guide and video guide

Nickname activity

Naming activity – rule of notice

Criteria brainstorm for naming

Brainstorm when we have used lists

List structures

Ethnographic research at home

List brainstorming activity – debrief

Practice:

Comparing Lists

Reorganizing lists

Popcorn

Forced listing

Meditation

Freewriting

Brainwriting

Passaround

Gallery Walk

Rolestorming

Mantle of the expert

Metaphoric thinking

Drawing terms

Analogy/Medici effect

Trigger talk/trigger writing

Vocab development

Survival simulations

Simulation debrief

Situational prompts

Draft:

Apply critical standards

Final:

Peer response guidelines

PQP

Tell me more stems

Checklists

Focus groups/Review boards

Transfer:

Muddy/Marvy

Past-present-future protocol

Song and poetry versions – ASK STUDENTS TO MAKE CONNECTIONS?

Ch 7 SUMMARY

Planning: Brainstorming purpose:

NEED FRONTLOAD ON LEADERSHIP?

Timeline: On-demand and free choice summaries of civil rights events/trends

BACKWARDS/CP: voters guides/user guides (remember examples)**

Task decomposition

Practice: Heuristic – STUDENTS CAN GENERATE A HEURISTIC OR FLOW CHART

CRUX MOVES?

TDPP

SWBS

CDR

One-minute life summary, video taped

Sum it up

Tweets, facebook updates, etc. in role

Shrinklits

Collapsing lists

Headlines and captions

Multimodal summaries

Framing

Framed sentences

Practice with other kinds of guides? (ELEMENTARY EXAMPLES – OR PUT IN LISTING CHAPTER)

Draft

Circle and cross outs

Structured controversy

Video taped summaries

Computer command sheet (PROVIDE MODEL?)

Final

Run-ons, fragments (NEED SHORT EXAMPLE?)

Transfer

One sentence stickies – as entrance and exit tickets

3-2-1

REFLECTIVE JOURNALING?

Description

Intro: HIGHLIGHT QUANTITATIVE/EMPRICAL VS. QUALITATIVE/EXPERIENCED

ARE THE CRUX MOVES IN HERE?

Plan:

Ethnographic research

EQ: What is the best possible school and how can we become this?

CP: PROPOSAL for an area of improvement and how to implement it.

NEED A FRONTLOAD?

Practice:

Rank models from reading

Identify power words and wimp words

Collaboratively revise weaker examples

Inserting similes and metaphors (USE FIRST IS A CAT THAT DANCES ON LOGS – SOME KIND OF METAPHOR LESSON)

Develop criteria and planning sheet (PROVIDE ONE?) PERHAPS FROM SENSORIUM

Mentor texts: search and find descriptions

CRUX MOVES?

What no one else will notice

Guided visualization

Providing power and eliminating wimpy (cross-outs and additions)

The Enjoyment Game

Observation Game

Showing vs. Telling – with school lunch menu

Pattern practice

Mystery Pots

Transitions anchor chart

Salient detail

Photo descriptions

Memory descriptions – memorable meal

Draft

Criteria sheet

NEED SOMETHING MORE HERE

More on transitions; description patterns?

Final:

Word choice – move to drafting? I THINK SO.

Peer/Keeper Feedback – TRAINING THE PEER?

Transfer:

Rules of notice chart – PROVIDE ANCHOR CHART?

Photo Find and short reflective piece

Mantle of the Expert: Press Conference, Forum, Description Judges

REFLECTIVE JOURNAL?

Process Description

MAKE SURE TO PUT MATH THINK ALOUDS HERE? ENOUGH CONTENT AREA EXAMPLES THROUGHOUT?

Planning:

Memory searches

Search and Identify

FRONTLOADING ON WORKING TOWARDS CHANGE?

Practice:

Multimodal models – name moves and devices

Writing after models – author says/author does

Reverse models – Unchopping a tree

Being literal: Follow only the directions

Post-mortems

Rube Goldberg machines

Flow chart – PROVIDE AN EXAMPLE?

Descriptions of cartoon sequences (INFER THE GUTTER)

Think alouds (ADD MATH EXAMPLES)

Draft:

Criteria sheets

Modeling response

See three before me!

NEED ANOTHER PEER EDITING TECHNIQUE HERE

Final:

Colons

NEED ANOTHER ONE for PROOFREADING – MAYBE MAKE A FLOW CHART OF THE PROCESS – MAKE SURE THERE ARE MONITORING STRATEGIES – IF THIS DOESN'T WORK THEN DO THIS TO SELF CORRECT- ARGUE FOR THE IMPORTANCE OF MONITORING AND SEEING FROM AUDIENCE PERSPECTIVE

Transfer:

Process analysis

NEED A TIP SHEET – GET FROM TAPS

Definition:

Plan:

EQ: What makes a great leader? NEED TO CITE IN PLANNING

CP: TOP FIVE LEADER RANKING

Focused freewrite/memory search

Newspaper listing

When to use anchor charts

Ethnographic observation WHAT ABOUT INTERVIEWING?

Dramatic scenarios: Are you an effective leader?

Ranking Models

Survey

Articulating criteria/creating rubrics

Practice:

Defining the self

Bio-poems

Definition poems/Koch style

YouTube definitions

Pyramid game

Pyramid game with outlier

Name that group

Name that group-sequel

Oaths and contracts

How to and How not to guidelines

Frayer Models USE MORE GRAPHIC ORGANIZERS THROUGHOUT?

Draft:

Planning guide

NEED A REVISION STRATEGY

Final:

Explaining how examples fit criteria (MAYBE GOES IN DRAFTING?)

BUT THEN WILL NEED PROOFREADING STRATEGY HERE

PEER EDITING STRATEGY

Transfer:

Process Analysis WHAT I DID, HOW IT WENT, WHAT I WILL REMEMBER AND DO
DIFFERENTLY NEXT TIME – RPA, IPA,

REFLECTIVE JOURNALING

Compare/Contrast:

Plan:

EQ: What is most influential? (How do we decide and choose?)

CP: C/C INFLUENCES

Think alouds (MATH THINK ALOUDS HERE? CHECK ALL THE MATH AND SCIENCE STUFF)

Anchor charts of crux moves

Brainstorm purposes – in life and content areas

Practice:

Sentence completions

Autobiographical writing

Opinionaire

Getting the data – brainstorming sources

Shaping stuff – brainstorming forming strategies

T-charts

In-role writing

Best/Worst and Good/Poor dramatic tableaux

Visual tableaux

Tableaux vivant

Good Angel/Bad Angel

Hotseating

Triptychs

Cartoons

Rankings

Venn Diagrams

SFAs

Comparison Chart

Consumer Reports

Provide data for comparisons and rankings

Top Ten lists – independent

Collaborative writing

Rhetorical Stance/Audience consideration:

Moll Flanders- protocol

Role play scenarios

The Best of Bach

Draft:

Jigsawed Analytic Scales

Compose benchmark

Mentor texts

Roundtable/Forum Peer Response

Save the Last Word

Googledocs

Final:

Subordination

Subordinating conjunction list

Multiple revisions

Transfer:

Still in harbor

Reflective notes

Reflective journal protocol

Classify:

Problem/Solution and Cause/effect

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