

HABITS OF MIND IN THE CURRICULUM

by Arthur L. Costa and Bena Kallick

"Good schools focus on habits, on what sorts of intellectual activities will and should inform their graduates' lives.

Theodore R.Sizer, *Horace's School*, 1992

Schools are about learning and the habits of mind offer a set of valued intellectual dispositions toward which teachers and students consciously and consistently work. The habits provide guidelines for a process for interaction. Loyalty to a process for interaction is as significant as loyalty to the decisions that are a result of that process. We seek to operate in a world that is civil, that respects individuality and differences, and that provides a path for consistency, not uniformity. Senge (1990) suggests that a culture is people thinking together. As individuals share meaning, they negotiate and build a culture. As groups become more skillful in employing the habits of mind, the habits create a renegotiation of the organization by pervading the value system. This change results in the changing of practices and beliefs of the entire organization. By employing the habits of mind, the group mind illuminates issues, solves problems, and accommodates differences. Also through the habits of mind, the group builds an atmosphere of trust in human relationships, trust in the processes of interaction, and trust throughout the organization. The habits of mind facilitate the creation of a shared vision (Senge, 1990).

Sharing A Vision for Process

As a school adopts a vision about the habits of mind that is shared by the entire staff, grade levels and subject areas are transcended. The vision leads to a commitment to a consistent set of behaviors that build a learning community. These behaviors and dispositions are more likely to be achieved because they are reinforced, transferred, and revisited throughout the grades and subject areas, at home, and in the community.

With a focus on habits of mind, educators overcome the historical isolation, disparity, and episodic nature of teaching and learning. Each class can reinforce the values put forth by the habits of mind. For example, persistence is as valued in social sciences as it is in music, math, and physical education. All teachers, regardless of subject area or grade level, can agree on these desirable qualities. The transcendent qualities of systems thinking about outcomes can be found in such habits of mind as enhancing one's capacities for persisting; managing impulsivity; creating, imagining, innovating; thinking about thinking (metacognition); striving for accuracy; listening with understanding and empathy; taking responsible risks; and responding with wonderment and awe (Costa, 1991; Tishman & Perkins, 1997).

" Lawyers tell us these "habits" are very lawyerly, but journalist and scientists tell us they are basic to what they do as well. As a historian I recognize them as being at the heart of my field. As a principal I find them useful when "naughty" kids are sent to my office. I ask them to put their version of the story on one side and that of whoever sent them to me on the other, then we discuss whether what's happened is part of a

pattern, how else it might have been dealt with, and, finally, why it matters." Debbie Meier *The Power of Their Ideas*, 1995. Pp 50-51

Sharing Common Beliefs There are many programs and curriculum designs that can be enriched by integrating the habits of mind. For example, the significant dimension 5 in the Dimensions of Learning Program (Marzano, 1992, pp. 131-152) is entitled "Productive Habits of Mind." The habits of mind that are named in Marzano's book are similar to the ones in this book. When teachers are developing units using Understanding by Design (Wiggins and Mctighe, 2005, 1998) a focus on the thinking dispositions will strengthen the student's capacity for deeper understanding. When teachers are developing a program that focuses on social and emotional learning, the habits of mind become a set of behaviors that foster more thoughtful interactions (Elias 2006). Thus we see that the habits of mind fit within a pattern of educational trends and programs that share a common philosophy of teaching toward broader, more panoramic, encompassing and lifelong learning.

We are witnessing an educational refocusing away from teaching unrelated, fragmented, short-term content toward broader, more enduring, essential, life span learnings. Lauren Resnick (1999) states in her article, "Making America Smarter: The Real Goal of School Reform":

"For over 20 years, psychologists and other students of the human mind have been experimenting with ways of teaching the cognitive skills associated with intelligence. These include techniques as varied as generating analogies, making logical deductions, creating and using memory aids, and monitoring one's own state of knowledge (metacognition). Early experiments on teaching specific, isolated components of intelligence yielded a common pattern of results: Most of the training was successful in producing immediate gains in performance, but people typically ceased using the cognitive techniques they had been taught as soon as the specific conditions of training were removed. In other words, they became capable of performing whatever skill was taught, but they acquired no general habit of using it or capacity to judge for themselves when it was useful.

As a result of these findings, cognitive researchers began to shift their attention to educational strategies that immerse students in demanding, long-term intellectual environments. Now positive results are coming in. In experimental programs and in practical school reforms, we are seeing that students, who, over an extended period of time, are treated as if they are intelligent, actually become more so."

Elevating the Curriculum The current focus on standards and accountability has led many educators away from a constructivist approach to curriculum and instruction. Instead, curriculum designers have emphasized coverage of content and drill in test-related knowledge. As a school staff begins to embrace the Habits of Mind, thinking becomes the focus of curriculum, instruction and assessment. For many educators this is a mind shift. For example, if the intent of instruction is behavioral and assumes that there is a body of knowledge students need to learn and be tested on, then only certain habits would be necessary. Students would need to strive for accuracy, use clear and precise language and remain open to continuous learning. The learning, however, would be teacher-directed and would not require many of the other habits.

If, on the other hand, instruction is concerned with student's developing a sense of curiosity, wonderment and awe, creating imagining and innovating and becoming more metacognitive about what and how they are

learning, then a constructivist curriculum is more likely to provide the sort of challenging, cognitive tasks that require higher levels of thinking.

The curriculum requirements and standards need to be studied to identify where they can broaden student knowledge by “covering” the curriculum and where they can deepen student knowledge by allowing students to “uncover” the curriculum. These curricular decisions always present a tension with time—the question is usually—“will I have enough time for students to dig more deeply into the curriculum?” We suggest that often it is not time that is the issue as much as process. Twenty minutes of a generative discussion may lead to better understanding and longer lasting knowledge than will twenty minutes of detailed coverage of information. Such generative discussion leads to project based learning which provides opportunities for students to become more self directed and responsible for their learning. If we expect students to work more thoughtfully in class, then coaching is required. And, as soon as you raise the expectation for higher level thinking, the habits of mind become a necessary part of the curriculum. Practicing the habits of mind in this context promotes students' recognition of the greater benefits and values of using the Habits of Mind.

The habits of mind are the dispositions that we want students to develop so that they are more capable of successfully working at a higher level. The habits are not another layer that is added on to an already over crowded curriculum. Rather they are a significant part of the generative curriculum—a curriculum that engages students so that they are thinking beyond the test or the final exam to find application in other subjects, in their future careers and in their lives.

Designing Curriculum with Habits of Mind in Mind

Whenever educators set about operationalizing their vision for more mindful schools, they begin with the question of curriculum. The work of Heidi Hayes Jacobs suggests that it is powerful to begin an examination of curriculum through “curriculum mapping” (Jacobs, 1997). In this process, teachers detail what they currently teach and consider how it builds on the foundations of previous learnings and anticipates those of future years. They define the content, skills, and assessments that presently guide their instructional decisions. As teachers share their maps across grades, subjects, and schools, they consider what might be excessive, repetitious, necessary, or missing.

Jacobs suggests that the entire faculty engage in this process, not just a small committee. Curriculum mapping provides a rich opportunity for building curriculum as a decision-making process. The power of these conversations comes from the five basic groups of decisions that teachers consider:

- 🌀 Deciding on content, strategies, and skills
- 🌀 Deciding on a focus for habits of mind
- 🌀 Deciding on materials, resources, and organizational patterns
- 🌀 Deciding on measures of student learning

These decisions about what should be taught, how it should be taught, and how it should be assessed shape the minds of all children. The character of their minds, in turn, helps shape the culture in which we all live. Eliot Eisner (1997) states that schools serve children best when they help students broaden their understanding of content in meaningful ways. We suggest that to achieve this goal, habits of mind must be considered among all the varying curriculum goals and outcomes.

Broad Educational Outcomes* Anthropologist Gregory Bateson (1972) formulated an early notion of relating systems of learning to human growth. Dilts (1994) then applied this form of systems thinking to education. The major concepts are as follows:

Any system of activity is a subsystem embedded inside of another system.

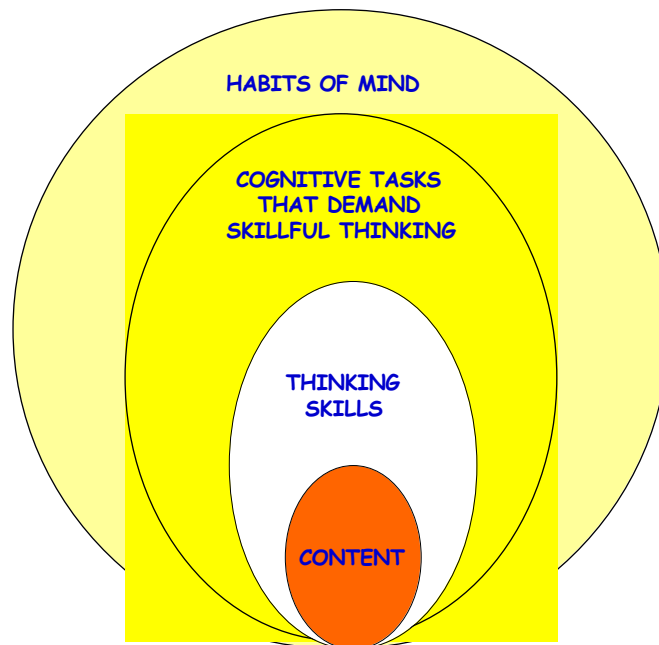
This system also is embedded in an even larger system, and so on. Learning in one subsystem produces a type of learning relative to the system in which one is operating. The effect of each level of learning is to organize and control the information on the level below it. Learning something on an upper level will change things on lower levels, but learning something on a lower level may or may not inform and influence levels above it.

These insights led to a realization that authentic outcomes are subsystems embedded inside other subsystems. In such arrangements, different types and magnitudes of learning occur relative to the system in which one operates. Each more overarching, complex, and abstract level has a greater impact upon the learning of the level within it. Because each level affects the interpretation of the levels below, changing meaning on an upper level changes decisions and actions at lower levels; changing something at a lower level, however, does not necessarily affect the upper levels.

When educators make decisions about curriculum, instructional methodologies, and assessment strategies, they hold in their minds at least four nested levels of outcomes. Each one is broader and more encompassing than the level within, and each represents greater authenticity. We might consider these levels working like a digital camera in which you can zoom in to any one level or zoom out to get a panoramic view of the whole.

The landscape is summarized in Figure 3.1. While we zoom into each level in the text below, skillful teachers learn to maintain the vision of the whole as they work in each level simultaneously.

* *Note:* many of the ideas presented in this chapter are drawn from the article "Maturing Outcomes" by Arthur L. Costa and Robert J. Garmston, published in *Encounter: Education for Meaning and Social Justice*, Vol. 11, No. 1. Spring 1998.



Content Teachers must focus on the coherence and cumulative effects of activities in the classroom. Curriculum design work starts by answering questions such as: What concepts and principles are students learning? State, provincial and school district standards of learning often help with this decision. While teachers maintain interest in day-to-day activities, the learning activities are now employed as vehicles to learn content. Teachers ask: "What concepts or understandings do I want my students to know as a result of this activity? What will I do to help them understand? How will I know they understand the concepts?"

For example, when studying the American Revolution, students learn some fundamental facts about the revolution. In addition, they learn about the concepts associated with a revolution as a means for change. Lessons and activities bring the students to an enlarged understanding of what indicators and triggers exist that cause a revolution and consider whether other options might be possible as we learn from history.

Thinking Skills Drawing upon state, district and organizational standards of learning, teachers begin to select content for its generative qualities (Perrone & Kallick, 1997). Content, however, is not the end. Standards also apply to thinking skills and *abilities* that students are expected to display in such learnings. Types of thinking are often embedded in subject matter standards using specific thinking *verbs* describing what students are to do in meeting the content standard. (For example, "*analyze* the differences" between two kinds of government or "*draw conclusions*" from a certain kind of experiment.) Thus, the content becomes a vehicle for experiencing, practicing, and applying the processes needed to think creatively and critically: observing and collecting data, formulating and testing hypotheses, drawing conclusions, and posing questions.

Here's an example from the State of Virginia secondary school standards:

The student will develop skills for historical and geographical **analysis**, including the ability to: **analyze** documents, records and data... **evaluate** the authenticity, authority and credibility **formulate historical questions** and **defend** findings based on **inquiry** and **interpretation**

Others appear in statements that specify what students are to do to demonstrate that they have mastered a specific kind of content, as for example in a standard-related statement such as this:

Students should be able to demonstrate how the 'second industrial Revolution' changed the nature and conditions of work by: (7-12) **assessing** the effects of the rise of big business on labor.... (7-12) **analyzing** how working conditions changed.... (5-12) **analyzing the causes and consequences** of the employment of children....

These standards present us with not only a pressing need to provide instruction in thinking, they also *legitimize* taking the time to provide the kind of instruction necessary to accomplish this goal. Furthermore, they suggest that successful instruction in skillful thinking should be done *while* teaching subject matter instead of *in addition to* teaching subject matter. Thinking and subject matter content -- are neither separate from nor in opposition to each other.

The following is an expanded list of thinking words that we have culled out from educational standards articulated by a variety of states in the USA, Canada, and elsewhere:

TYPES OF THINKING SKILLS REFERENCED IN STANDARDS

Analyze	Connect	Identify	Organize
Apply	Contrast	Inquire	Predict
Classify	Evaluate	Interpret	Solve
Compare	Generalize	Judge	Summarize
Conclude	Hypothesize	Observe	Test

The standards from which the above thinking words have been extracted represent a random sampling of standards included in present curricular objectives. The implication is that a student cannot demonstrate mastery of any of these required standards without performing one or more important thinking skills.

Process outcomes, therefore, are of greater valence than the outcomes of subject-specific content because to be literate in the content, students must know and practice the processes by which that content came into being (Paul & Elder, 1994; Tishman & Perkins, 1997). At this level, teachers decide: "What processes do I want my students to practice and develop? What thinking skills will be required to activate the mind about the big ideas I am presenting? How can I directly teach those thinking skills and processes?"

Considering the American History example, students might develop a thinking map that examines the sequence of events that led to the revolution. They might be asked to understand the frustration of the people at that time by examining the causes and effects of the Boston Tea Party. They might be encouraged to hypothesize about what might have happened if people waited instead of revolting.

Cognitive Tasks That Demand Skillful Thinking Once teachers have clearly identified the content and thinking skills, they need to design the cognitive tasks that will require students to engage in deeper thinking. Many people refer to this as "backward planning" (Wiggins and McTighe, 1998)). Planning from this perspective means that each level below this one will deepen students thinking about the subject as they process material to meet the expectations of the cognitive task.

Earlier in this book it was stated that the Habits of Mind are drawn forth in response to problems, the answers to which are not immediately known. Teachers, therefore, design rich tasks requiring strategic thinking, long-range planning, creating something new, making a decision, resolving discrepancies, clarifying ambiguities,

constructing the meaning of a phenomenon, conducting research to test theories or ameliorating polarities. If the task is not sufficiently authentic, engaging, and challenging, then students will revert to merely reproducing knowledge. When students are sufficiently challenged, they give meaning to the work, produce new knowledge and draw upon the Habits of Mind. (See Chapter 5 for further elaboration of cognitively demanding tasks.)

In the American history example, students might plan a research project to support their theories that evolutionary change need not lead to revolutionary change. Students could plan and present an exhibit demonstrating their understandings and develop rubrics for judging the exhibits and working together effectively. Additionally, they might reflect on and evaluate themselves both individually and collectively, considering how well they met criteria for the project's completion and for thinking and working interdependently.

Habits of Mind From the broadest perspective of the curriculum landscape, students must use the habits of mind not only to succeed in the cognitive task that is assigned, they also learn that success is ensured by mindfully applying these habits. Through reflection and self-evaluation, they begin to see how the application of the habits transfers to all subject areas.

In the example of the American History project, students attend to communicating with accuracy and precision, persisting, listening with understanding and empathy. As they work in their groups, they experience interdependent thinking. Finally, upon completion of the task, students think about their thinking. They might be asked such reflective questions as: "What metacognitive strategies did you employ to manage and monitor your listening skills during your work in teams?" "What effect did striving for accuracy and precision have on your product?" "How did thinking interdependently contribute to your task accomplishment? Questions might also be asked to invite transfer to situations beyond this learning: "In what other classes would it be important to strive for accuracy and precision?" "In what other situations beyond school would thinking interdependently contribute to your success?" This attention leads to a process of internalization. Continuous explicit reference to the habits, practice in applying the habits in their work, identifying and analyzing the skills underlying each of the habits and appreciating the value that the habits bring to their lives leads to students finally habituate the habits as a part of all that they do.

We are proposing, therefore, that teachers deliberately adopt and assess habits of mind as outcomes of their curriculum and instruction. Focusing on, teaching and encouraging growth in the Habits of Mind changes the design of their activities, determines their selection of content, and enlarges their assessments. The bigger the circle in which the outcomes live, the more influence they exert on the values of each learning (Meadows, 1997). If we wish to influence an element deeper within the system, each tiny adjustment in the environment surrounding it produces profound effects on the entire system. This realization allows us to search beyond the habits of mind for systems to which we naturally aspire in our journey of human development, which, if affected, also would influence our capacity to learn (Garmston, 1997)

Designing Curriculum to Focus on the Habits of Mind

It is important to realize that the effects of teaching the habits of mind are not immediate. Forming the Habits of Mind requires many experiences, encounters, reflections, rehearsals, practice sessions, and instructions. To do so, teachers must also get into the habit of teaching the vocabulary of the habits of mind, deliberately structuring questions and inviting students to plan for and reflect on their use of the habits. Students soon begin using that

vocabulary—even at a very early age in pre-school and Kindergarten. They learn to recognize the performance (or absence) of the habits of mind in themselves and others—characters in books and films, in playground experiences, and even in our politicians. They discuss ways that performance could be improved. Teachers and students grow beyond the conscious stage as they internalize the habits of mind. The habits become intuitive, ultimately reaching “automaticity.” The individual strands (behaviors) eventually are woven into a strong cable (habit).

In addition to integrating the habits of mind into the already existing curriculum, teachers know that students go through an evolution of learning in relation to the habits. We describe this evolution in Chapter 3 “A Journey of Continuous Growth.” While this journey is neither linear nor prescriptive, nonetheless, the description provides a framework or map for increasing ϕ integration from a foundation of merely being aware of what are the habits of mind and recognizing them in various situations, through the employment and finding value in using them, then in the adoption of, reflection on and evaluation of their use to the internalization of the Habits of Mind.

This journey provides a staff with a map to serve as a guide towards increasing instructional complexity. In order for students and teachers to take note of the habits as they are developing, these descriptions provide a map to follow. The function of a map is to provide a view of the territory: a starting place, alternative routes, signposts and mile markers along the way and a destination toward which you are heading. Keeping the map in mind or in view during the journey allows you to see where you’ve been and to anticipate where you are going. An example:

In a typical middle school consisting of grades 6,7 and 8, the staff might start implementing the Habits of Mind by building the foundation with all students by helping them become aware of and explore the meanings of the habits of mind, identifying what they look like and sound like. Posters illustrating the habits of mind with logos and quotations might be placed around the school and classrooms as reminders. They might have students define the habits in their own terms and provide examples from their own lives and experiences. (It has been found that students are very adept at this.) Once students know what the habits of mind are, teachers might ask students to find examples of the habits of mind in novels, films, videos, newspapers, and cartoons and on the athletic field.

Teachers often provide a way for students to begin to assess where they are with the habits—are they using the habits as they work with others in a group? Are they using the habits when they study? Once students understand the habits of mind, they can map their own journey of development. Teachers may choose to only provide whole class lessons intent on Building Awareness. This might be all that is accomplished in the classrooms throughout the school.

In the next school year, the 6th grade students are now in the 7th grade and those who were in the 7th are now in the 8th grade. The 8th graders have now graduated and gone on to high school. While the new 7th and 8th graders may need a brief review of the habits of mind, teachers would *not* want to spend the year at the becoming aware of and exploring the meanings of the Habits of Mind. Rather, they would want to focus more on the strategic applications of the Habits of Mind. They might invite students to be alert to and aware of the use of their habits of mind as they work on complex problems and rich, cognitively demanding tasks. They might discuss the values of the habits and how it served them in working towards greater skills in problem solving and decision-making. They would invite students to transfer to life situations beyond the school.

Meanwhile there is a new crop of 6th graders who have just entered the school. They may know nothing about the Habits of Mind and would therefore have to be introduced to them, as the 6th graders were the previous year.

Again as the third school year begins, those original 6th graders have now become 8th graders and are becoming well skilled in the Habits of mind as a result of the staff's coordination, articulation and reinforcement across the various subjects and classes that students have taken. Now those 8th graders need to expand their capacities, to extend the value and to build commitment to continuous growth in the Habits of Mind. The teacher stresses metacognition by discussing with students what they are thinking about to guide their decisions, actions and thoughts. Values and benefits of using the Habits of Mind are continually explored. By now, students autonomously and without prompting employ the Habits of Mind, assess themselves, and develop goals and strategies for their improvement.

Meanwhile the 6th graders have become 7th graders and are ready for their strategic application of the habits of mind—to build alertness, skillfulness and valuing of the Habits of Mind. And yet another crop of 6th grade students are new to the school and are introduced to the experiences designed to explore meanings.

Obviously this same map could be employed by an elementary or secondary school staff. Ideally, we envision a sequence of learning about, becoming more skillful in and more spontaneous and wider use of the habits of mind in a setting beginning at the kindergarten (even pre-school level) and continuing though to graduation from high school.

While the map described above provides an idealized view of the journey, realistically it doesn't always work quite that way and is not that "linear". What the map does suggest, however, is that when teaching habits of mind directly, there needs to be a sequential development of the kind of curricular lessons that will be offered to the whole class. At the same time, teachers need to differentiate based on the individual needs of students. Students are at varying levels: advanced in some of the habits of mind yet novices with others. Some students come to school with well-developed habits while others may have fewer opportunities to see role models and develop the habits. As students become better at self-assessing, teachers can provide richer coaching examples so that each student is mapping his or her own road to internalizing the habits.

When students who have never heard of the Habits of Mind transfer in from other schools, they need to become aware of what the habits are and how they define the school culture. The map provides an overview that also allows teachers to individualize depending on students' emerging knowledge of and display of the habits of mind.

In Summary

School staffs view the habits as the most panoramic view of the curriculum as they understand the long-range, cumulative, enduring nature of learning. They understand that success is desired not only in school but also in life. When all staff members share this kind of vision, their work transcends grade levels and subject areas. Panoramic outcomes are more likely to be achieved because they are reinforced, transferred, and revisited throughout the school, at home, and in the community.

It should be emphasized that learning activities are still taught. Content is selected for its generative nature, and processes are practiced, but they now accumulate into grander, more long-range, and life-long outcomes. Activities, content, and thinking processes become vehicles for achieving these larger, more enduring, and essential

habits of mind. Instead of a single teacher asking, "What do I want?", instructional teams now decide: "Which habits of mind do we want students to develop and employ? What will we do to assist their development? How might we work collaboratively to determine if students are developing increased skillfulness in such dispositions over time? What will we see or hear in student behaviors as evidence of their growth? How might we practice and assess our own growth toward these habits of mind through our work together?"

Staff and students learn to draw upon the habits of mind to organize and direct their intellectual resources as they confront and resolve problems, observe human frailty in themselves and others, plan for the most productive interventions in groups, and search out the motivations of their own and other's actions. The habits become the desirable meta-outcomes for the entire community—staff and students.

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