

Habits of mind

Phillip Moulds and Michelle Ragen

Dr Phillip Moulds

Phillip is the Deputy Headmaster – Curriculum of Brisbane Grammar School. Along with his teaching of Physical Science to grades 9-12, he has responsibilities in the areas of school planning, professional and curriculum development and administration.

While teaching, Phillip completed his PhD at the University of Queensland in 2002, with his thesis exploring the deliberate teaching and assessment of thinking processes and dispositions (Habits of Mind). In 2003 he received a prestigious Westfield Premier's Scholarship as a part of the Queensland 2003 Teacher Excellence Awards, and was awarded the Australian College of Education Teacher Excellence Award in 2004.

Michelle Ragen

Michelle is the Assistant Head of English at Brisbane Grammar School. As well as teaching English in Years 9-12, Michelle has an active role in developing curriculum resources and implementing the pedagogical framework.

Introduction

The Habits of Mind are a very natural idea. Think of children that you know, and you will be able to identify characteristics that they demonstrate when they are actively engaged in thinking and learning. It is these characteristics that suggest the general concept of the Habits of Mind and make it persuasive at the same time.

Considerable research demonstrates that successful people in almost any walk of life also display these characteristics or dispositions. Art Costa calls them Habits of Mind. They are patterns of thinking and behaving in intelligent ways and are displayed when people are confronted with life's dilemmas and problems. We want our children to develop those habits that lead them to become lifelong learners, effective problem solvers and decision makers, able to communicate with a diverse population and to understand how to live successfully in a rapidly changing, high-tech world.

In this article Costa's 16 Habits of Mind will be described. Strategies for how you, as teachers, can help your children develop these habits, and ways to observe whether your children are getting better at them will be suggested. This list is not meant to be complete. As we learn more about

these habits, we will discover additional indicators of growth in children's thinking abilities.

1. Persisting

Efficient problem solvers persevere even when the solution to a problem is not readily apparent. They have a wide range of problem-solving strategies. Children often give up in despair when the answer to a problem is not immediately known. You might hear them say, "I can't do this," "It's too hard," or, they just want to get the task over with as quickly as possible. They lack the ability to analyse a problem, to develop a system or strategy to approach the problem.

Children develop persistence by increasing their use of alternative strategies of problem solving. They collect evidence to indicate that their problem-solving strategy is working, and if one strategy doesn't work, they know how to back up and try another. They realise that their strategy must be rejected and another employed.

Help your children by reminding them of previous successes with similar problems, that there are many strategies to try, and that they are effective problem solvers. It is more helpful to learn three ways to solve one problem rather than learn one way to solve three problems!

2. Managing Impulsivity

Successful people have a sense of deliberativeness. They know how to monitor their own impulses and resist jumping to conclusions. Often children blurt the first idea that comes to mind, shout out an answer, start to work without fully understanding directions or make immediate value judgments about an idea – criticising or praising it before considering its pros and cons. They may take the first suggestion given or accept the first idea that comes to mind rather than considering alternatives and consequences of several possible directions.

Help your children to learn to manage their impulses, by asking them to explain rules before beginning a task or game, talking over a plan for solving a problem, exploring alternative problem-solving strategies, and considering consequences of actions before beginning.

3. Listening to Others - With Understanding and Empathy

Successful people spend an inordinate amount of time and energy listening. They empathise with, and strive to understand, other people's points of view. Being able to paraphrase another person's ideas, detecting indicators of their feelings or emotions, accurately expressing another person's concepts, emotions and problems - are all indications of listening behaviour.

Some children ridicule, laugh at, or put down each other's ideas. They are unable to build upon, consider the merits of, or operate on another person's ideas. You will know if your children are getting better at listening when they can attend to another person, demonstrate an understanding of, and empathy with, another person's idea or feeling by paraphrasing it accurately, building upon it, clarifying it, or giving an example of it. When a student can say, "Peter's idea is ... but Sarah's idea is ... " or "Let's try Shelley's idea and see if it works," or "Let me show you how Gina solved the problem, then I'll show you how I solved it," then you know they are listening to and understanding others' ideas and feelings.

4. Think Flexibly

Successful people consider alternative points of view. Sometimes children think that THEIR way to solve a problem seems to be the ONLY way. They may decide that THEIR answer is the only correct answer. They are more interested in knowing

whether their answer is correct, rather than being challenged to find other answers. They avoid ambiguous situations and have a need for certainty rather than tolerating doubt. Their minds are made up and they resist being influenced by reasoning that contradicts their beliefs.

As children become more flexible in their thinking they consider another person's point of view or rationale. They can state several ways of solving the same problem and can evaluate the merits and consequences of two or more courses of action. When making decisions they will often use such words as "however", "on the other hand," or, "If you look at it another way ...".

Discuss with your children how thinking flexibly can aid their success and describe how you handle situations when working with others who are not flexible.

5. Thinking About Their Thinking (Metacognition)

Successful people are aware of themselves – their own thoughts, actions, values and their effects on others. Often children are unaware of their own thinking while they are thinking. Lacking a plan of action to solve a problem before they begin, they are unable to determine if that plan is working or if it should be discarded and another plan employed. They seldom plan for, reflect on, or evaluate the quality of their own thinking. When asked, "How did you solve that problem?" they may reply, "I don't know, I just did it." They are unable to describe the steps and sequences they are using before, during, and after the act of problem solving. They cannot transform into words the visual images held in their mind.

You can determine if your children are becoming more aware of their own thinking if they are able to describe what goes on in their head when they think. When asked, they can describe what they know and what they need to know, what information is lacking and their plans for producing those data. They can describe their plan of action before they begin to solve a problem. They can list the steps and tell where they are in the sequence of a problem solving strategy; they can trace the pathways and blind alleys they took on the road to a problem solution.

You can help your children by using "thinking words" such as "compare", "analyse", "predict", "classify," and "conclude".

6. *Striving For Accuracy And Precision*

Successful people appreciate and strive for correctness, elegance, and fidelity. Children, however, are often careless when completing work. Being anxious to finish so they may go on to other things, they seem to feel little inclination to reflect upon the accuracy of their work, to contemplate their precision or to take pride in their accomplishments. Speed of completion surpasses their desire for quality.

You may observe your children's growing desire for accuracy as they take time to check over their work as they grow more conscientious about precision, clarity and perfection. They go back over the rules by which they were to abide, the models and visions they were to follow, and the criteria they were to employ to confirm that their finished product matches exactly. Help them by setting standards: "If you were to do a really excellent job cleaning up your room, what will it look like?"

7. *Questioning and Posing Problems*

One of the distinguishing characteristics between humans and other forms of life is our inclination and ability to FIND problems to solve. Children often depend on others to solve problems, to find answers, and to ask questions for them. They sometimes are reluctant to ask questions for fear of displaying ignorance.

Over time, we want to observe a shift from parents and teachers asking questions and posing problems, towards the child asking questions and finding problems for themselves. Furthermore, the types of questions children ask should change and become more complex and profound. A child may request data to support another person's conclusions and assumptions: "How do you know that's true?" You will hear him or her pose more hypothetical problems characterized by "what-if" questions: "What do you think would happen IF ...?" or "IF that is true, then what might happen if ...?"

We want children to be alert to and recognize discrepancies and phenomena in their environment and to inquire into their causes: "Why do cats purr?" "How high can birds fly?" "Why does the hair on my head grow so fast, but the hair on my arms and legs grows so slowly?"

8. *Applying Past Knowledge To New Situations*

The ultimate purpose of learning is to learn from experience. When successful people encounter

problems, one of the first things they ask themselves is "What do I already know about this?" "What strategies helped me in the past that I can apply to this new problem?"

Too often children begin each new task as if it were being approached for the very first time. Teachers are often dismayed when they invite a child to recall how they solved a similar problem previously and the child doesn't remember. It's like they never heard of it before, even though they had the same type of problem recently. It is as if each experience is a separate event that has no relationship to anything that came before or that comes afterward.

Children can be observed growing in this ability as they are heard to say, "This reminds me of ..." or "This is just like the time when I ..." They explain what they are doing now in making references to previous experiences. They call upon their store of knowledge and experience as sources of data to support theories to explain, or processes to solve, each new challenge.

9. *Thinking and Communicating with Clarity and Precision*

Language and thinking are closely entwined. Successful people use specific terminology, refrain from over-generalising, and support their assumptions with valid data. When you hear vague, fuzzy language, you detect vague, fuzzy thinking. Some children's language is confused and imprecise. They describe objects or events with such non-specific words as "weird," "nice," or "O.K." Names of objects are such as "stuff," "junk," and "things." Their sentences are punctuated with "ya' know," "er," and "uh."

As a teacher you need to be alert to vagueness in language and help your children become more specific by clarifying some of their vague comments.

As children's language becomes more precise, you will hear them using more descriptive words to distinguish attributes. They will use more correct names and labels. They will spontaneously provide criteria for their value judgments describing why they think one product is BETTER than another. They will speak in complete sentences, voluntarily provide supportive evidence for their ideas, elaborate, clarify, and define their terms. Their oral and written language will

become more concise, descriptive and coherent.

10. Gathering Data through All Senses

All information gets into the brain through the sensory pathways: ears, eyes, skin, nose and tongue. Successful people realise that to learn something, it must be experienced. To know a wine it must be drunk; to know a role it must be acted; to know a game it must be played; to know a dance it must be moved; to know a goal it must be envisioned. Those sensory pathways that are open, alert, and acute absorb more information from the environment than those whose pathways are withered, immune, and oblivious to sensory stimuli.

You will observe your children using all their senses as they touch, feel, and rub various objects in their environment. (Young children may put things in their mouths.) They will request a story or rhyme be read again and again. They will act out roles and “be” the thing: a father, shopkeeper or a fish. “Let me see, let me see,” or “I want to feel it,” or “Let me try it,” or “Let me hold it ...” they will plead.

11. Creating, Imagining, Innovating

“I can’t draw.” “I was never very good at art.” “I can’t sing a note.” Some people think creative humans are just born that way; that creativity is in their genes and chromosomes. Increasingly we are coming to realize that all human beings have the capacity to generate novel, original, clever or ingenious products, solutions, and techniques – if that capacity is developed.

Successful people are creative. They try to examine problem solutions differently, examining alternative possibilities from many angles. They tend to project themselves into different roles using analogies, starting with a vision and working backwards, imagining that they are the objects being considered. Creative people take risks – they “live on the edge of their competence”, testing their limits. Creative people are open to criticism and hold up their products for others to judge and seek feedback in an ever-increasing effort to refine their technique. They constantly strive for greater fluency, elaboration, novelty, perfection, beauty, harmony and balance.

Children often need help to know how to tap their creative potentials. Techniques such as brainstorming, mind-mapping, and metaphorical

thinking help to loosen the thinking. Some examples: ask your children to find connections and hidden relationships among two or more unlike objects: “In what way is gravity is like a feather?” Create your own plant and an environment in which it can live: “How does it feel to be a flat tire?” “How do you think a zero feels?” “Which is crisper, carrot or yellow?” “Which is the happiest room in your house? Why?”

12. Responding with Wonderment and Awe

Enrapture your children with phenomena, intriguing situations and jaw-dropping experiences. Surround them with beautiful scenes, technological marvels and science fiction; let their imaginations take flight. Successful people find enjoyment, enthusiasm and fascination in their work and world. Allow your children range to explore whatever they are intrigued with – as long as they are experiencing the passion. Passion may be the key to creativity.

Invite your children to share their interests – what electrifies and mystifies them. Create a safe environment, where they feel free to share their fascination, their emotions and their exhilaration. Make it cool to be passionate about something! Share with your child your own fascinations. Allow them to see you enthralled and excited about a problem or discovery and compelled with your own work.

You may observe them communing with the world around them, reflecting on the changing formations of a cloud; being charmed by the opening of a bud; sensing the logical simplicity of mathematical order. They will find beauty in a sunset, intrigue in the geometries of a spider web and exhilaration in the iridescence of a hummingbird’s wings.

13. Taking Responsible Risks

Flexible people seem to have an almost uncontrollable urge to go beyond established limits. They are uneasy about comfort; they “live on the edge of their competence”. They seem compelled to place themselves in situations where they do not know what the outcome will be. They accept confusion, uncertainty, and the higher risks of failure as part of the normal process and they learn to view setbacks as interesting, challenging and growth-producing. However, they are not

behaving impulsively. Their risks are educated. They know that some risks are not worth taking!

We need to teach our children how to learn to take intellectual as well as physical risks. Students who are capable of being different, going against the grain of the common, thinking of new ideas and testing them with peers as well as teachers, are more likely to be successful in this age of innovation and uncertainty.

14. Find Humour

Another unique attribute of human beings is our sense of humour. Laughter transcends all of us. Its positive effects on psychological functions include a drop in the pulse rate, the secretion of endorphins, an increased oxygen level in the blood. It has been found to liberate creativity and provoke such higher level thinking skills as anticipation, finding novel relationships, visual imagery, and making analogies. Children who engage in the mystery of humour have the ability to perceive situations from an original and often interesting vantage point. They tend to initiate humour more often, to place greater value on having a sense of humour, to appreciate and understand others' humour and are able to laugh at situations and themselves. Some students find humour in all the "wrong places"—human differences, ineptitude, injurious behaviour, vulgarity, violence and profanity. They laugh at others yet are unable to laugh at themselves.

15. Thinking Interdependently

Successful people realise that all of us together are more powerful, intellectually and/or physically, than any one individual. Problem solving has become so complex that no one person can go it alone. No one has access to all the data needed to make critical decisions; no one person can consider as many alternatives as several people can.

Some children do not work well in groups; they have underdeveloped social skills. They feel isolated, they prefer their solitude. "Leave me alone – I'll do it by myself." "They just don't like me". "I want to be alone." Some children seem unable to contribute to group work either by being a "job hog" or conversely, letting others do all the work. Children need to learn how to work in groups, how to justify ideas and to test the feasibility of solution strategies on others. It also requires the development of a willingness and

openness to accept the feedback from a critical friend. Through this interaction the group and the individual continue to grow. Listening, consensus seeking, giving up an idea to work with someone else's, empathy, compassion, group leadership, knowing how to support group efforts, altruism – all are behaviours indicative of cooperative human beings.

16. Learning Continuously

Intelligent people are in a continuous learning mode. Their confidence, in combination with their inquisitiveness, allows them to constantly search for new and better ways. People with this Habit of Mind are always striving for improvement, always growing, always learning, always modifying and improving themselves. They seize problems, situations, tensions, conflicts and circumstances as valuable opportunities to learn.

Sometimes children confront learning opportunities with fear rather than mystery and wonder. They defend their biases, beliefs and storehouses of knowledge rather than inviting the unknown, the creative and the inspirational. Being certain and closed gives them comfort while being doubtful and open gives them fear.

Our wish is for creative students and people who are eager to learn. That includes the humility of knowing that we don't know, which is the highest form of thinking we will ever learn. Paradoxically, unless you start off with humility you will never get anywhere so, as the first step, you have to have already what will eventually be the crowning glory of all learning: the humility to know – and admit – that you don't know and not be afraid to find out.

In Summary

This list of the Habits of Mind and the conditions that promote them are not meant to be complete. As teachers, we have great responsibility for instilling these dispositions in our children. We must teach them to value intelligent, creative, and rational action. To do so, however, we must provide the conditions that will nurture these habits. We must believe that ALL children can continue to grow in their ability to behave more intelligently. We must have faith that all humans can become increasingly more gifted than they are presently capable of demonstrating. Finally, we must set an example by becoming models of these habits of mind ourselves.