



one system,
infinite potential

Changing Educational Paradigms

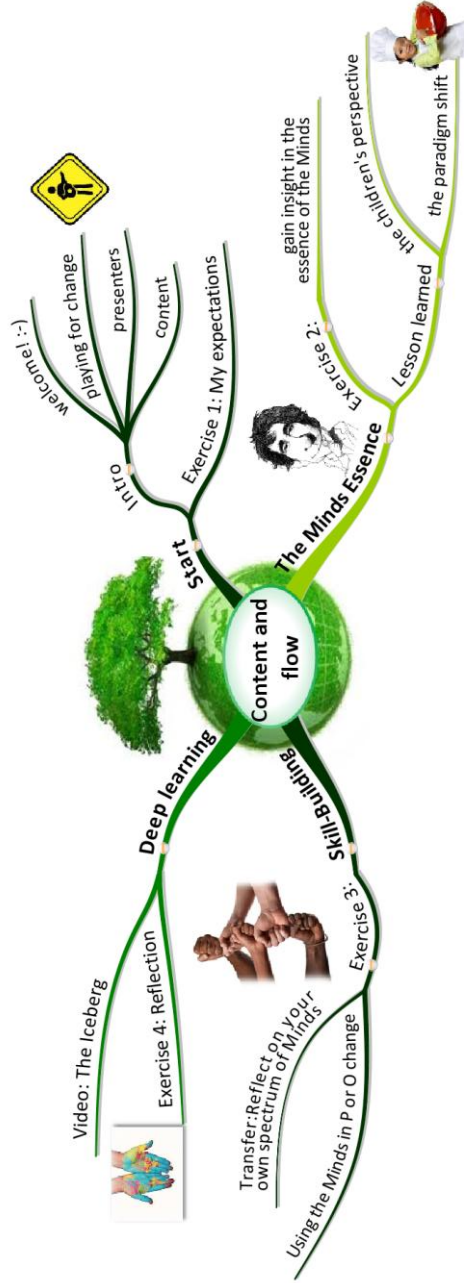
Five Minds for Changing the Future

Monday concurrent session

1.30- 3.00 p.m.

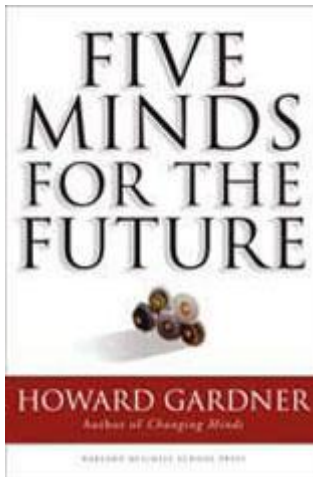
Pegasus Conference 2011





Article 1: Five Minds for the Future

HGSE Professor Howard Gardner



To prepare students for the future, educators need to cultivate both academic skills and character. In his new book, *Five Minds for the Future*, HGSE professor **Howard Gardner** describes five kinds of minds, or ways of thinking and acting. Three are related to intellect: the disciplined, synthesizing and creative minds; two emphasize character: the respectful and ethical minds. In a recent Burton and Inglis lecture at HGSE, Gardner describes what it means for citizens and workers to exhibit these types of minds.

As the world we inhabit continues to change, educators must frequently reevaluate the goals of education, and the type of "minds" we wish to cultivate. Though academic achievement within the disciplines is an important goal for K-12 education, there are other important components of a future-oriented education.

Howard Gardner, professor of cognition and education at HGSE, points out that the future will demand workers and citizens to demonstrate "out-of the box" and non-linear thinking to solve increasingly complex challenges. The tools from any one discipline are often insufficient for understanding and solving real world problems. For example, in the medical and educational arena, complex syndromes such as autism are highlighting the need for interdisciplinary expertise and problem-centered teams of people working on common goals.

The reflective educator can think about three kinds of minds that emphasize various aspects of *intellectual development*.

Students should master information within the major disciplines, like History and Math (the **disciplined mind**). These ways of thinking are challenging to learn and require practice in school, since they are cultural inventions that the human brain is not pre-wired to understand intuitively. In this age of digital media and information overload, students with knowledge within a discipline must be able to sort out what is important and what is not from the massive amount of available information (the **synthesizing mind**). A student with a synthesizing mind can make sense of what she has learned, and can convey it to others when she needs to do so.

During the career years, once they have learned and synthesized knowledge in their discipline, people need to be prepared to think outside the box of that discipline (the **creative mind**). Creativity allows for innovation or meaningful change in how problems are approached in the field. Using the example of autism, a creative team can try out some theoretically plausible treatments that have not been tried before, and monitor the results

carefully. The creative person takes chances, and therefore must also be ready for negative feedback, which can often be used to change direction and make forward progress.

Two additional minds to cultivate in school emphasize the human sphere, or *personal character*.

Educators will recognize the importance of fostering respectfulness among students (the **respectful mind**). Gardner distinguishes real respect from mere tolerance of differences. Cultivating respect and emotional and interpersonal intelligence among students, teachers, and the greater school community are essential goals in a world where diversity of perspectives is a fact of life.

While respect is something even young children can practice in primary schools, ethics (the **ethical mind**) requires more abstract and reflective thinking about one's behavior. No matter what type of work a person undertakes, she can stand back and ask what she needs to do for her work to be excellent in quality and ethical in conduct, and then follow through with those responsibilities. Without this mindset, a person can be easily swayed into doing compromised work that cuts corners, just to be able to get ahead.

How can educators adjust what they do in schools to cultivate these five minds? One way is to talk with students about prominent examples from history or current events that illustrate these minds. For instance, history or science teachers might discuss with students how a scientist worked diligently and thought creatively to come up with and test an important discovery. Similarly, classes might discuss examples of individuals or groups that fell short of exemplifying these minds, and the consequences of that behavior, such as cases in which violation of ethical codes lead to human harm. Such discussions will inevitably raise questions about what to do when two minds are in conflict. For example, how should we respond if a teacher or supervisor that we respect engages in conduct that is compromised in some ethical way? How can we criticize a fellow learner respectfully when we see the product of their creativity as flawed?

Teachers can also use the notion that there is a developmental sequence among the intellectual minds and those involving character. For instance, rather than *starting* with an assignment that requires creativity, teachers might help students first to master some body of knowledge, synthesize it, and only then consider ways to expand on and use it in out-of-the-box ways.

As our outlook for the 21st century continues to come into focus, we will see that schools must respond to students' changing needs. In the working world, increasingly complicated issues will require solutions that cross disciplinary boundaries and go beyond "one-box" solutions. Though the urge to cut corners may be strong, standards for respectful and ethical conduct should be cultivated. Nurturing each of these minds will help ensure that the next generation is willing and able to meet the still-unknown challenges of the future.

By Maria Fusaro, doctoral student in Human Development and Psychology at HGSE

Find out more about Howard Gardner's work by visiting HowardGardner.com.

Also see: Howard Gardner (2007). *Five minds for the future*. Harvard Business School Press: Cambridge, MA.

Cultivating Thinking Skills

Written by Jamie on July 15, 2009 in Learning Tips - 10 Comments



"...We must immediately expand our vision beyond standard educational institutions. In our cultures of today – and of tomorrow – parents, peers, and media play roles at least as significant as do authorized teachers and formal schools...if any cliché of recent years ring true, it is the acknowledgment that learning must be lifelong." – Howard Gardner

Cultivating your mind is more important than anything else you can do to prepare for personal and professional success. Why? Because the modern world is unpredictable. The whirlwind of technology changes our lives so quickly that there's no way to anticipate how the future will look. Your industry, your job, and even your day-to-day life may be very different 10, 20, or 30 years from now. The only way to get ready for what comes next is to create the mental infrastructure to thrive in any environment.

In past times, people could "finish" their education and move on to professional life. Today, learning is an essential part of just about any job. Imagine if a computer repairman, doctor, teacher, or librarian decided he was done learning just a decade ago. The results would be disastrous.

My article The 3 Types of Learning & Why You Won't Want to Ignore Any of Them discusses the most important types of knowledge / ability to acquire. Professor Howard Gardner's book *Five Minds for the Future* focuses on the most important ways to cultivate your mind for future success. Below you'll find a summary of his five "minds" as well as my own thoughts on how independent learners can develop these traits.

The Disciplined Mind

The disciplined mind has mastered at least one way of thinking – a distinctive mode of cognition that characterizes a specific scholarly discipline, craft or profession.

People need to know how to do at least one thing really well. The ability to focus and develop a deep knowledge will help anyone stand out from the generalists. Whether you're an athlete, a professor, or a musician, learning how to embrace your subject on an expert level is the only way to excel.

Development Idea: Research shows that becoming an expert takes around ten years or 10,000 hours of focused work. If you know what you want excel at, set aside daily time to develop your abilities. If not, take a few moments to contemplate your passions.

The Synthesizing Mind

The synthesizing mind takes information from disparate sources, understands and evaluates that information objectively, and puts it together in ways that make sense to the synthesizer and also to other persons.

They call this the information age for a reason. With internet access and a library card, a person can look up just about anything. The problem is that many people don't know how to process the massive amount of information they encounter. Learning how to synthesize this knowledge (i.e. combine it in a way that makes sense) can help you find meaning and see the big picture in your profession and life in general.

Development Idea: Take note of new-to-you ideas, theories, and events whenever you're reading or having a discussion. Then, watch to see where you hear about them a second time. I'm often surprised when I read about something for the first time and then see references to related topics three or four times during the following week. Combining this additional information helps me have a deeper understanding of the whole.

The Creating Mind

The creating mind breaks new ground. It puts forth new ideas, poses unfamiliar questions, conjures up fresh ways of thinking, arrives at unexpected answers.

Unfortunately, schools often have the effect of squelching creativity in favor of rote learning and conformity. But, the creative mind is an extremely valuable asset both in one's professional and personal life. If you have a creative mind, you can think of ways to change your own circumstance for the better and contribute cures, ideas, and products to global society. People who can create have the ability to change the world.

Development Idea: Watch just about any young child playing and you'll see that creativity comes naturally. If you haven't developed this trait as an adult, the best way to get started is by experimenting. Try new things, play around. Don't be afraid to look silly or fail.

The Respectful Mind

The respectful mind notes and welcomes differences between human individuals and between human groups, tries to understand these "others," and seeks to work effectively with them.

Now that technology has made worldwide travel and communication possible, the ability to understand and respect other people is essential.

Development Idea: The more people I know, the easier it is for me to value and respect ideas that are different from mine. Visiting other countries and communities and meeting new faces can help you become more welcoming of differences.

The Ethical Mind

The ethical mind ponders the nature of one's work and the needs and desires of the society in which he lives. This mind conceptualizes how workers can serve purposes beyond self-interest and how citizens can work unselfishly to improve the lot of all.

Thinking ethically is the unselfish trait. You benefit from living in a world where people do right by each other.

Development Idea: Take a look at the article [Moral Reasoning](#) for links to some compelling online ethics videos by a well-known professor Michael Sandel.

More Minds?

Gardner does a great job of identifying five "minds" that will help people in their future professions. But, I'm left feeling that there are additional ways of thinking that can help us excel in other areas of our lives. What "minds" or thinking abilities have you found beneficial?

Synthesizing mind



Image description:

The amount of information in the world is immense, and growing each day. Making it impossible for children to grasp all of this knowledge. Developing the Synthesizing mind gives children the opportunity to learn a new way to navigate through this information-based society: to see the big picture.

On this image you see five-year olds discovering the process of water-circulation, experiencing the interconnectedness and the relation between themselves, the others and the environment on the theme. To stimulate this mind, children get acquainted how to use tools from brain based-learning to stimulate their abilities to navigate through this information based society.

Creative mind



Image description:

What we often forget is that children naturally have an open mind. So our main job is to stimulate that by providing useful system-thinking tools.

Gardner's theory of Multiple Intelligences shows us how we can use children's preferred learning styles and helps us to develop their strengths.

On this image you see six-year old Jesper, showing us his personal profile of multiple intelligences. By using Gardner's theory of multiple intelligence in the classroom, children will learn how to get access to their inner creative source, using their own unique spectrum of potential. To meet the future, think fresh and unprecedented about problems, and stimulate sustainable learning, children need new abilities to think, see, interact and reflect in different and creative ways.

Respectful mind



Image description:

Respect for children means to be honestly interested in them; to actually SEE them. A teacher's mission should be: *"Don't focus on the symptoms, focus on the child!"* This mind is about embracing differences between people

Some one-liners often heard in schools: "Please, show some respect.... You know the rules!" But, does a protocol really guarantee a respectful climate?

On this image you see how children in a classroom want to live, learn, work and play together. Children will learn how to stimulate a respectful mind, working with principles instead of rules, to create a synergetic climate in a system.

Ethical mind



Image description:

On this image you see 10 year old Jordy, his dream is to become a trailer salesman, just like his dad. Children learn to stimulate their ethical minds, by discovering inner beliefs, goals and purposes.

If a child explores its values and inner beliefs, it can discover its own path. A solid base to give meaning to themselves, others and their environment. Children will be fully engaged and motivated learning in this way. Because the learning process is more in tune with their goals in life.

Exercise 1: My Expectations

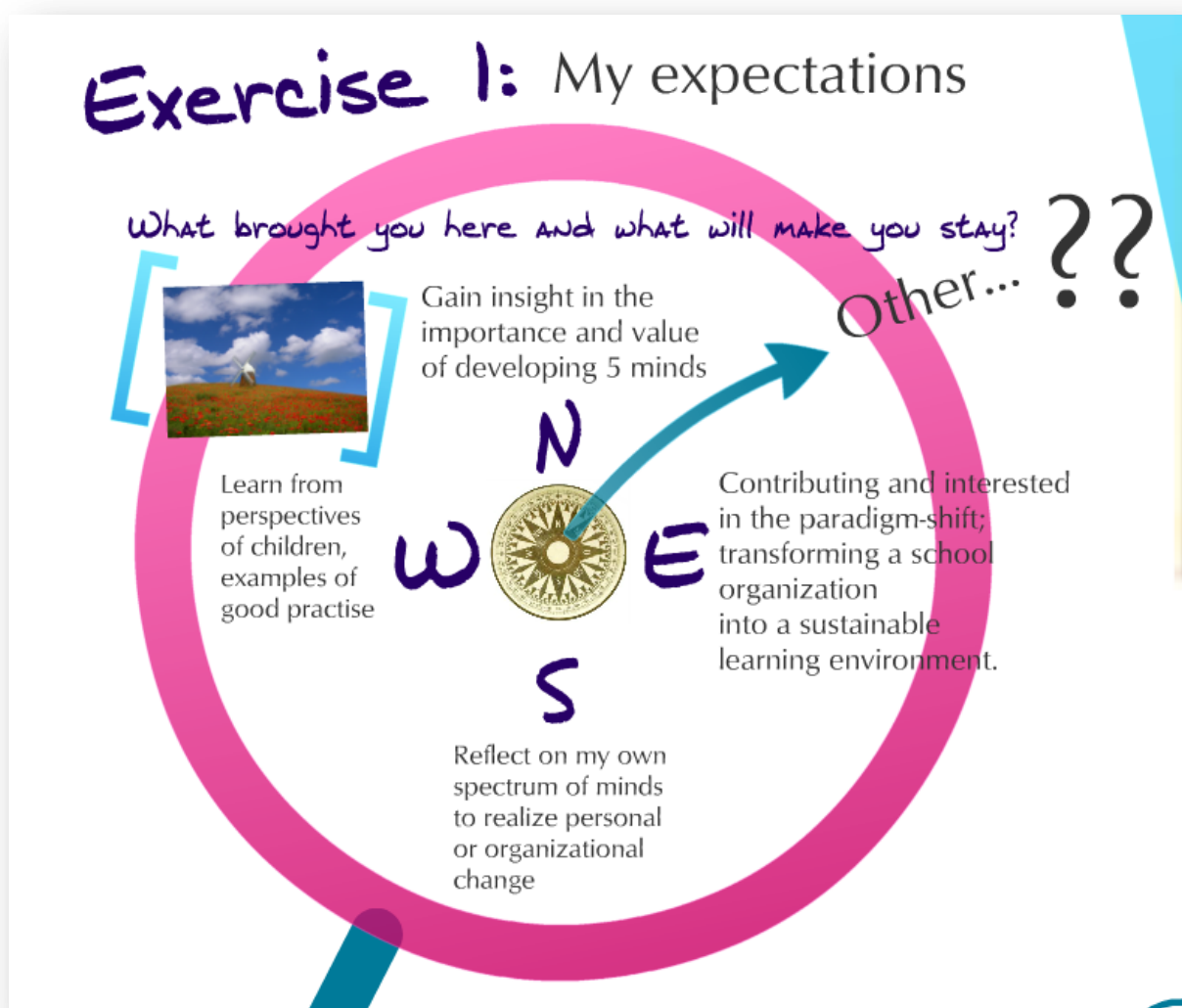
The room is divided into 4 wind-directions: North, East, South, West.

The question is:

What brought you here and what is making you stay?

What are your expectations of this session?

Please go to the direction of your choice, meet other participants and share your perspectives.





Exercise 2: the Essence of the minds

Purpose:

Gain insights in the importance and value of developing the Five Minds for the Future (Gardner, 2007) as leverage for children and adults to create a sustainable learning-environment.

Exercise 2:

The essence of the Minds

1. Divide into groups of 5
2. Choose one of the 5 minds to study for 5 min
Use the attached articles and the specific picture
3. Explain the essence of your studied mind to your groupmembers. (1-2 min p.p.)
4. Discuss the essence of the minds in your group and formulate one group-question on the content.

Exercise 3: Skill Building

Purpose:

Reflection on your own spectrum of minds, to realize personal or organizational change.

1. Divide into groups of two.
2. Both, choose a situation or challenge in which you want to realize personal and/organizational change.

Start individually:

3. Use your own spectrum of minds and reflect why and in what way the minds can support you in the transformation you are willing to achieve.

What kind of (new) perspectives do you experience?

Wenn the music stops; share your learning's with your partner (5 min. p.p.)



Exercise 4: Deep Learning

Purpose:

Learn from the perspectives of children, showing how they become the architects of their own learning process, by using (system thinking) tools en approaches that have led to real and lasting results in reforming public education in the Netherlands.

Watch the video of student of “The Sjtadssjool” in the Netherlands, explaining their Iceberg of Self-Navigation.

Aks yourselves:

- Which minds do I recognize?
- How does this video relate to my learning's in this session?
- What can I, or what can my organization learn, from the perspectives of the children in this session?

Share your visions with someone at your table.



Reflection



More information?

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