Teaching Thinking

A Guide for the Perplexed

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A simple and sweeping idea

Instead of teaching knowledge, teach how **to deal with knowledge** – to think

Thinking: combining knowledge in new ways

Good thinking: combining knowledge in effective, critical, and creative ways

A few reasons for the acceptance of *teaching thinking*

- The state of knowledge (explosion, obsolescence, accessibility)
- The picture of knowledge (relativity)
- Knowledge economy
- Democratic and civic society
- Effective learning
- The cognitive science
- The charm of teaching thinking
- The savior syndrome

The result: inflation and cacophony

“There are an awful lot of theories around”

(Robert Sternberg)

“With so much controversy in the air, it’s understandable that only a few teachers and schools make the attempt”

(David Perkins)

“Mind Workers – Unite!”

(Arthur Costa)

Possible cure: a conceptual map

The "Mindwares":

skills, dispositions, understanding

- The skills approach
- The dispositions approach
- The understanding approach

Definitions

Thinking Skills: thinking tools and efficient use of them; thinking frames

Thinking dispositions: motivated patterns of thinking; cognitive traits

Understanding: relations ; performances

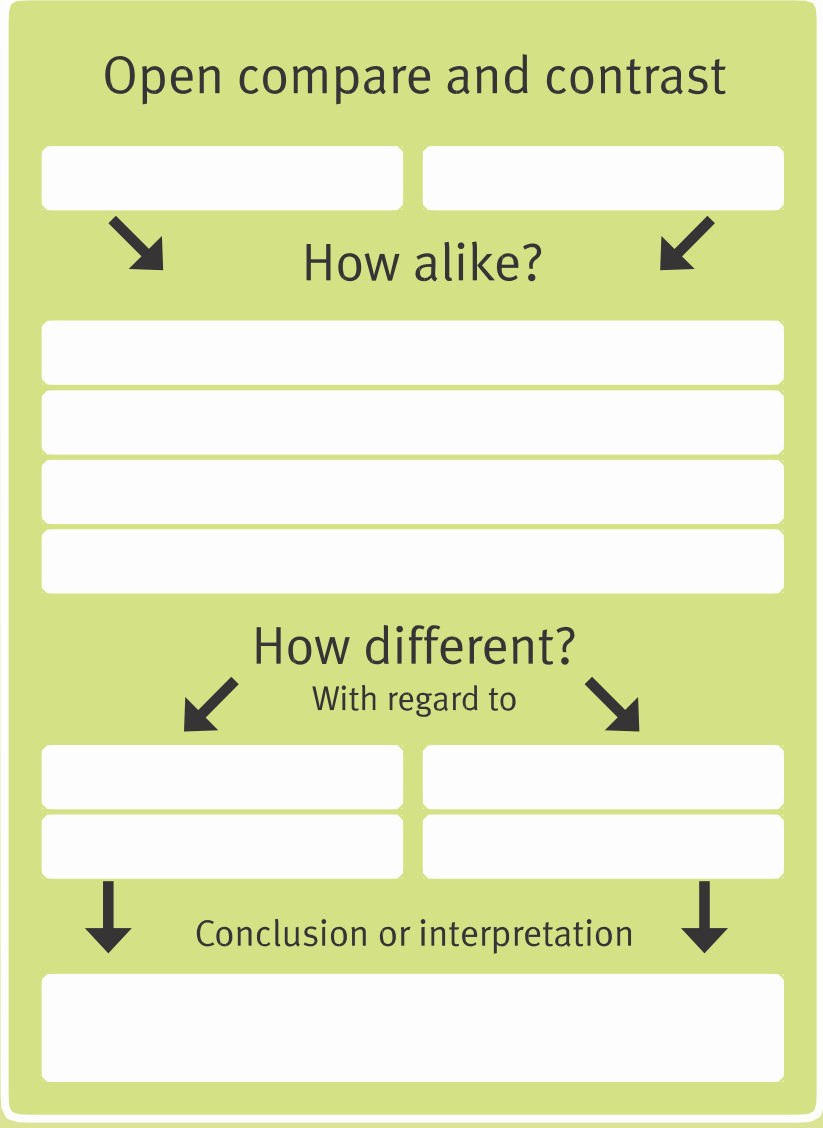
Edward de Bono: Thinking Tools

- P.M.I – Plus, Minus, Interesting
- A.G.O – Aims, Goals, Objectives
- C.A.F – Consideration of all factors
- O.P.V – Other peoples' views
- A.P.C – Alternatives, possibilities, choices

Six thinking hats

Robert Swartz & Sandra Parks

- Infusion
- Graphic organizers



Informal Logic

Logical and psychological fallacies

- Circularity
- Begging the question
- Appeal to authority
- Bandwagon
- Glittering term
- Name dropping
- Slippery slope
- Post hoc
- Ad hominem
- Straw person
- Either/Or
- Irrelevance
- Oversimplification
- Vagueness

Yoram Harpaz: 6 questions to conclude a text or a lesson

- **S** – What is the main subject of the text / the lesson?
- **C** – What are the Causual relationships in the text / lesson?
- **P** – From which perspective was the text written / the lesson managed
- **R** – What reasons did the author / teacher bring
- **C** – What was created within me or what can I create following the text / lesson?
- **M** – What happened to me while coping with the text / lesson (metacognition)?

David Perkins: 7 thinking dispositions

- To be broad and adventurous
- Toward sustained intellectual curiosity
- To clarify and seek understanding
- To plan and be strategic
- To be intellectually careful
- To seek and evaluate reasons
- To be metacognitive

Arthur Costa: 16 habits of mind

- Persisting
- Managing impulsivity
- Listening with understanding and empathy
- Thinking flexibly
- Thinking about thinking (metacognition)
- Striving for accuracy
- Questioning and posing problems
- Applying past knowledge to a new situation
- Thinking and communicating with clarity and precision
- Gathering data through all senses
- Creating, imagining, innovating
- Responding with wonder and awe
- Taking responsible risks
- Finding humor
- Thinking interdependently
- Remaining open to continuous learning

Richard Paul: 9 intellectual traits

- Independence of mind
- Intellectual curiosity
- Intellectual courage
- Intellectual humility
- Intellectual empathy
- Intellectual integrity
- Intellectual perseverance
- Faith in reason
- Fairmindedness

Guy Claxton: 16 Epistemic qualities

- Inquisitive
- Persistent
- Adventurous
- Focused
- Imaginative
- Connecting
- Crafting
- Capitalizing
- Methodical
- Self-evaluative
- Self-aware
- Transferring
- Collaborative
- Open-minded
- Independent
- Emphatic

Understanding

Relations: to understand a concept/phenomenon is to relate it to other concepts/phenomena.

John Dewey: "To grasp the meaning of a thing, an event, or a situation is to see it in its relations to other things: to note how it operates or functions, what consequences follow from it, what causes it, what uses it can be put to." (*How We Think*, 1933, p. 137)

Performance: To understand a concept is to perform intellectual moves with it.

David Perkins: "Understanding is the ability to think and act flexibly with what one knows." (*What Is Understanding?*, 1998, p. 40)

Understanding as relations

Knowledge

Insight

Types of relations

Thinking

Development

Creation

Understanding

Passion

Truth

Location

Essence or family resemblance

Feelings

Depth

Freedom

Things & people

Previous understandings

Understanding as performances

To present knowledge	To think about and through knowledge	To criticize and create knowledge
To express knowledge in your own words	To analyze and synthesize knowledge	To give reasons and justify knowledge
To explain knowledge	To apply knowledge	To expose contradictions and tensions in knowledge
To suggest interpretations of knowledge	To suggest examples, metaphors, analogies, comparisons	To question knowledge
To build a model for knowledge	To generalize from detailed knowledge	To reveal basic assumptions of knowledge
To represent knowledge in various ways	To contextualize knowledge	To formulate counter-knowledge
To present perspectives on knowledge	To predict on the basis of knowledge	To create knowledge on the basis of knowledge

How do we teach thinking skills, thinking disposition, and for understanding?

In other words…

	Teaching	Content	Learning
Skills	Defining, exemplifying, practicing	Taxonomy	Exercising, reflecting, transferring
Dispositions	Explaining, modelling, effecting	Modelling effecting figures	Identifying, internalizing, behaving
Understanding	Undermining, resonating, clarifying	Big ideas or big understandings	Relating, performing, constructing

Which approach is best?

The understanding approach!

The contextual argument:

in school we teach contents

The theoretical argument:

there is an essential internal link between thinking and understanding of knowledge

The pedagogical argument:

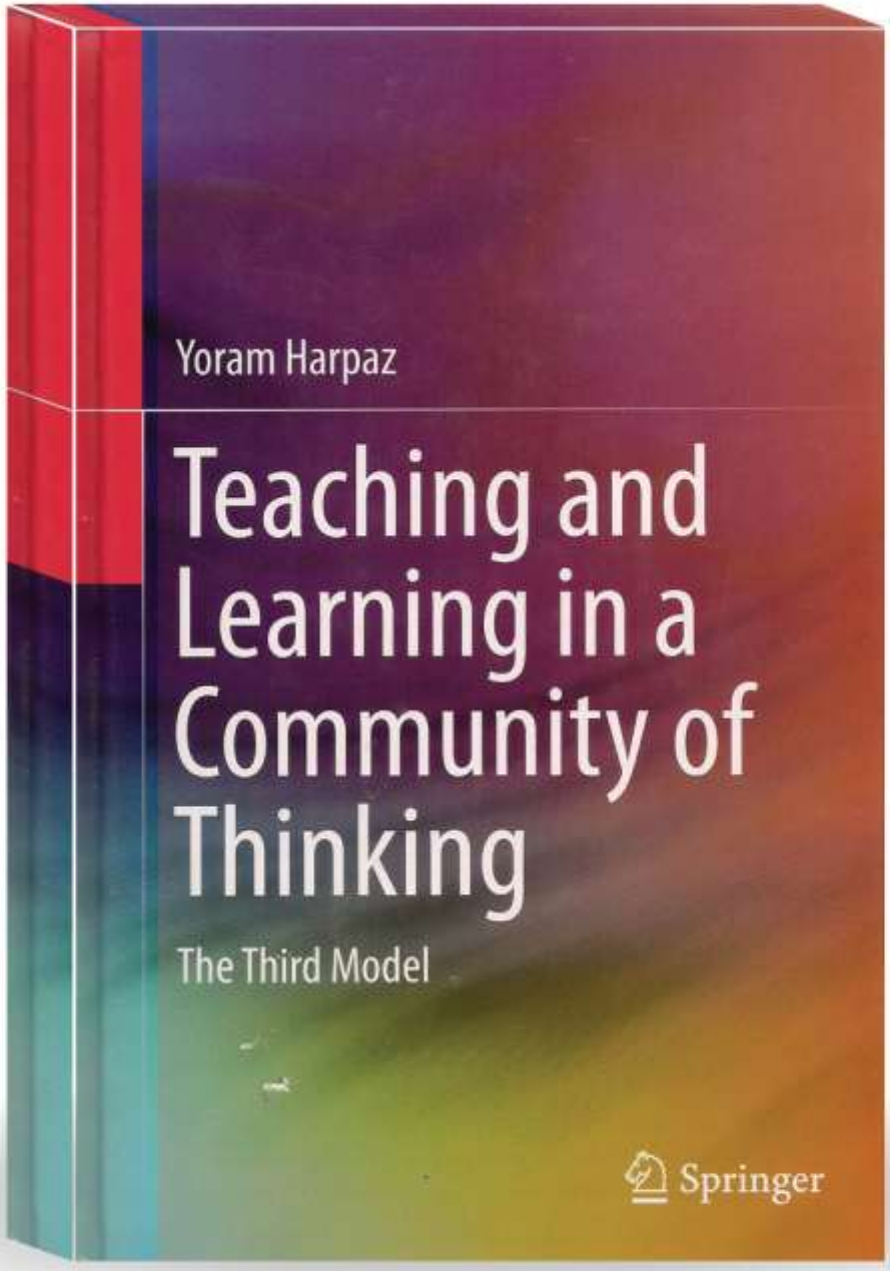
students should understand big ideas

The Skills Approach	The Dispositions Approach	The Understanding Approach
de Bono: CoRT	Tishman: Thinking dispositions	Gardner: disciplined understanding
Ennis: Taxonomy of CT	Ritchhart: Thinking dispositions	Wiske: Teaching for understanding
Beyer: Direct teaching	Costa: Habits of mind	Wiggins & McTighe: Understanding by design
Swartz: Graphic Organizers	Paul: Intellectual traits	McPeck: The reflective critical thinker
Sternberg: Intelligence implied	Facione: CT dispositions	Paul: Critical thinking in the strong sense
Treffinger, Isaksen & Dorval: Creative problem solving	Ennis: CT dispositions	Brown: Community of learners
Johnson & Blair: Informal Logic	Langer: Mindfulness	Bereiter & Scardamalia: Community of knowledge-building
Siegel: The reason conception	Barrel: Thoughtfulness	Harpaz: Community of thinking
Chaffee: Thinking critically	Passmore: CT as a character trait	Brooks & Brooks: Constructivist instruction
Whimbey & Lochhead: Problem solving	Siegel: The spirit of good thinking	Smith: Understanding as good thinking
Feuerstein: Instrumental Enrichment	Sternberg: Successful intelligence	Perkins: Understanding performances
Adey & Shayer: Cognitive acceleration	Baron: Theory of rationality	Lipman: Community of inquiry
Perkins: Thinking Frames	Perkins: Dispositions theory of thinking	
Lipman: Philosophy for children	Claxton: epistemic qualities	

To sum up you may ask yourselves:

- **S** – What is the main subject of this presentation?
- **C** – What are the main Causual relationships in this presentation?
- **P** – From which perspective was this presentaton presented?
- **R** – What reasons did the presenter raise to support his argument?
- **C** – What was Created within me or what can I create?
- **M** – What happened to me while listening to this presentation (metacognition)?

Thank you!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