

Ian Frank & Malcolm Field; World Class Thinking

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Keywords & Précis:

meta-skills	thinking skills	transfer	workshop
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We present an experiential workshop that gives participants practical and theoretical support for the development of thinking skills across a curriculum, largely irrespective of resource constraints.

"World Class Thinking" provides a unifying theme by describing both the method ("using the world as a classroom") and the goal ("high-level performance").

Short biography of lead author:

Professor Ian Frank graduated from the Department of Artificial Intelligence at Edinburgh University, where his PhD research was on computer game playing and how to automatically explain a computer's "thinking" to humans. "The understanding and explanation of the complex" is a good summary not just of his research interests in science, but also of his experience in teaching. He became a faculty of Future University-Hakodate in 2001, and has been experimenting with educational practices and workshops over several years. More information on his workshops and teaching can be found at www.koto-tsukuri.org.

Abstract:

We have been experimenting with new educational practices that draw on a diversity of sources, including artificial intelligence, communication, Japanese culture and robotics. In particular, we have targeted interaction between people and their environments based on a philosophical understanding of how the world can be apprehended, rather than with any particular theory of learning. This enables our teaching to share aspects of numerous theoretical approaches, including Dewey's emphasis on the social, Vygotsky's social formation of the mind, and Problem-Based Learning.

In this context, we have found it useful to appropriate the term "world class thinking" for its ability to describe both a means ("use the world as a classroom") and an end ("high-level performance"). The Japanese homophone for "class" also gives us a third interpretation. The verb "to live" or "to get along" is *kurasu*, and with this reading "world class thinking" has its deepest meaning: how is it that you actually live your life in the world?"

We will present a sixty-minute experiential workshop that will challenge the way that participants think about their environment, and their interaction with it. Using a series of activities that require just very simple tools, we will look at components of thinking skills. Our goal with these activities will be to stimulate an understanding of the mind's thinking processes and of the creative ways that ideas can be connected. Underpinning the activities, to provide a formal basis, will be a categorization of thinking skills drawn from diverse sources, from Polya's 1957 classic on how to solve mathematical problems to recent works on creative thinking and workflow management. This formalization is drawn from our work on the teaching of "technological thinking with no technology", and thus emphasizes how interactions with everyday objects can still be related to thinking skills required in the modern, technological age. We describe this formalization in more depth in the full paper, and will also provide printed reference at the workshop. Participants will thus leave with both practical and theoretical support for the development of thinking skills across a curriculum, largely irrespective of resource or funding constraints.