# Kanban2C, or Kanban-to-Creativity: An Instructional Model to Foster Creativity

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Noted author and speaker Ken Robinson argues that the world needs to re-imagine how we approach schools.[1] The present model, designed along industrial lines, is not fit for current purposes. Schools do not properly prepare young people for today's world nor serve humanity and our fragile planet. Robinson wants a revolution. Critics wonder whether a revolution is necessary or possible. Until the revolution comes, I propose a third way: let's foster creativity within the current system. One method is an instructional model that I developed and call Kanban2C, or Kanban-to-Creativity.[2]

Robinson is correct: the creators of modern schooling drew on industrial models. In the nineteenth century, Western countries wanted to educate masses of people to serve the needs of booming industrial economies.[3] The challenge to educate efficiently masses of people was daunting. Solutions came from industrial efficiency experts, who were hardly interested creativity. Thus, it is with some irony that I named my instructional model to foster creativity after a technique developed by second-generation industrial efficiency expert Taiichi Ohno (perhaps a further irony is that I developed the model initially to teach the "Second Industrial

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[1] Ken Robinson and Lou Aronica, *Creative Schools: The Grassroots Revolution That's Transforming Education* (New York: Penguin Books, 2015*), xxii-xxiii*.

[2] Robert A. Pierce, "Kanban2C, an ION Activity to Foster Creativity, *Creativity Network Newsletter*, spring (2016), 10.

[3] Raymond Callahan, "The Educational Efficiency Experts in Action," Chapter Five in *Education and the Cult of Efficiency* (Chicago: University of Chicago Press, 1964).

Revolution," which occurred roughly when efficiency were experts helping to create modern schools).

An industrial engineer at Toyota, Ohno did not want to eliminate Toyota's existing production process. Rather, he wanted to improve it. To increase levels of production, he created Kanban, which streamlines the logistical chain *within* the manufacturing process. Relying on employees using cards to signal other employees, Kanban improved the efficiency of the delivery of parts to required stations. Ohno's system also rested on three assumptions: begin with existing processes, seek "incremental, evolutionary change," and honor "the current processes, roles, responsibilities and titles"(Anderson, 2010).[4]

These assumptions support the pragmatic third way that I am suggesting for schools. If we assume that Robinson's education revolution is not at hand, what are we to do in the meantime? My approach is to find ways within traditional classrooms to develop specific creative thinking skills. Kanban2C does just that. The conceptual framework is straightforward. Consider a basketball coach. The coach does not "make someone a better basketball player." Rather, the coach breaks the goal of making better ball players down into component elements and focuses on them. The coach teaches their players how to shoot better, how to pass better, and how to set a pick. In the process, the athletes become better basketball players. Teaching the component skills is actually the key.

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[4] David Anderson, "The Principles of the Kanban Method," 2010, at http://www.djaa.com/principles-kanban-method-0, retrieved 18 March 2016. For fuller treatment, see David Anderson, *Kanban: Successful Evolutionary Change for Your Technology Business* (Seattle, WA: Blue Hole Press, 2010).

Kanban2C develops two broad sets of thinking skills needed for creativity: "inbox" and "outbox" thinking, traditionally referred to as convergent and divergent thinking.[5] The model also relies on tested instructional methods and on movement. Here are the minimum necessary steps in the model when teaching the Second Industrial Revolution:

1. Have students work in pairs to generate a list of inventions from the Second Industrial Revolution. This list can be drawn from sources the teacher chooses: the prior night's reading, readings in class, class discussion, or images of city life the class has examined. I urge some sense of urgency. I typically make it a challenge ("Which pair can come up with the longest list?"). The lesson requires, eventually a list of inventions at least as long as there are students.
2. One at a time, each student must name an invention.
3. Then, each student selects an invention that they must draw on paper at least as large as 8.5 x 11 or A4. The drawing must be clear so that someone across the room can see it clearly.
4. Once everyone has completed their drawings, the students, standing, form a circle and each student explains their invention and its importance.
5. After this step, tell the students that, as a group, they must rank the inventions in order of importance and re-form the circle with the inventions in rank order. Then,

[5] The new language was developed by Kyung-Hee Kim, "ACP (Appletree Creative Process) and ION Thinking Skills (Inbox, Outbox, & Newbox)," Chapter 9 in *The Creativity Challenge: How We Can Recapture American Innovation* (Amherst, NY: Prometheus Books, 2016), 199-244. The traditional names were coined by Jay Paul Guilford, "Basic Conceptual Problems of the Psychology of Thinking," *Proceedings of the New York Academy of Science* 91 (1960), 6-21, and *Creative Talents: Their Nature, Uses, and Developmen*t (Buffalo, NY: Bearly Limited, 1986.

each student, holding up their images, explains the relative position of their invention. Have the most important invention go first.

6. Have the students decide upon three categories for the inventions. Every invention must fit into one of the three categories. Have students, holding their drawings, stand with others in the same category.
7. Repeat this process, but with three different categories.

At the end of the lesson, I "quiz" the students. Working individually, they must write down every invention that we discussed. Virtually every time I do this lesson, over half the students will be able to list every invention (which at times is a list as long as 25 to 30), and remaining students will get all but one or two. Weeks later, we repeat the quiz (unannounced), and even weeks later, most students can recall virtually all of the inventions.

Like the basketball coach, when I rely on Kanban2C my students are practicing and learning skills that are the "pieces" of being creative. Students engage in both in-box and out-box thinking. Inbox thinking includes "expertise (memorization, comprehension & application)" and "critical thinking (analysis & evaluation)."[6] While the former are lower-order skills, the latter are higher-order. Creative thinking requires inbox thinking skills (1) to provide the knowledge foundation for expertise and (2) to enable a person to determine a best solution. Kanban2C also requires outbox thinking, which are "broad, quick, spontaneous, and chaotic" and include fluency (generating ideas), flexibility (generating ideas across different categories),

[6] Kim, "ACP (Appletree Creative Process) and ION Thinking Skills (Inbox, Outbox, & Newbox)," Chapter 9 in *The Creativity Challenge*, 199-244.

and originality (generating novel ideas).[7] When making their list of inventions, students practice fluency. As they lengthen their list, they are practicing flexibility (changing categories of inventions). Finally, when straining to have as many inventions as students in the room, they practice originality.

I have used Kanban2C with high school students, college students, graduate students, and in-service teachers in workshops. I have used it in classes in history, education, and business. In every instance, students' learning was high, and they enjoyed the class. The Second Industrial Revolution Lesson takes about ninety minutes, and students have routinely told me that time flew in that class. Most importantly, Kanban2C fosters creative thinking skills. Without even realizing what they are doing (in terms of thinking skills), students engage in lower-order inbox thinking during the process of collating lists, drawing, and explaining. They engage in outbox thinking (fluency, flexibility, and originality) when they generate their lists. Lastly, they engage in higher-order inbox thinking as they rank the inventions. Throughout they are laughing and having fun, which are crucial to creativity. They largely teach themselves. They love it.

[7] Kim, "ACP (Appletree Creative Process) and ION Thinking Skills (Inbox, Outbox, & Newbox)," Chapter 9 in *The Creativity Challenge.*