Applied Rapid Case Methods and Related Training Theory

David T. Wright

Faculty, Business School, Kwantlen University College

Abstract

Building upon a prior needs analysis, learning objectives and training design are described leading to a detailed lesson plan for a Rapid Case Method (RCM) that has been implemented in various versions with over two-thousand students in Canada. A rationale follows including literary references such as adult learning theory and Kolb learning styles, amongst others.

1. Applied Training Design

The Instructional Systems Design (ISD) model (University of Manitoba, 2007b, pg.28) is a circular training lifecycle model responding to "concerns or itches", with iterative phases of training needs analysis, learning objectives, training design, training delivery, and training evaluation. Each cohort of students could influence one instance of this lifecycle, leading to continuous improvement due to changing external influences, competitors, learner needs, and resources available.

There is a need for educators/trainers/facilitators to use appropriate methods for specific settings, including: learner (diverse) needs and styles, content, learning goals, learning environment, facilitator knowledge and skills, and resources available (University of Manitoba, 2007a, pg.25). It's important to note differences between learning styles of adults and children (University of Manitoba, 2007a, pg.62) - typical adult learning characteristics (androgogy) include: independent personality, intrinsic motivation, employee and citizen roles, ingrained habits, lack of time and possible negativity as barriers to change, vast experiences, and a problem-centered orientation to learning. The domains of cognitive, affective, and psychomotor learning are also important (University of Manitoba, 2007a). There are several learning cycles models (University of Manitoba, 2007a) (University of Manitoba, 2007b), including Kolb's experiential approach (model 2 involving the phases of concrete experiences, reflective observation, abstract conceptualization, and active experimentation) (University of Manitoba, 2007b, pg.41).

Turning to just one specific example of the Rapid Case Method (RCM) (devised by the author extending the Ivey approach (Mufette-Leender at al, 2005a) (Mufette-Leender at al, 2005b) as part of a business program (Table 1), a number of workshop design principles (Klatt, 1999) have been used including: keep participants actively involved, use stories and examples, employ all senses for impact, encourage collaboration and information-sharing, challenge and support participants, keep structure informal, let things unfold, build in flexibility and free-time, and avoid traditional teaching-centered approaches.

The learning outcomes/objectives answer the five key questions (University of Manitoba, 2007a, pg.115) of "who", "what", "when", "where", and "how" and three key

components (University of Manitoba, 2007b, pg.36) including: a description of sought behavior, the situations or condition where the behavior is to occur, and the standard or desired level against which the performance will be judged. The training objectives serve different purposes for the trainers, trainees, and managers (University of Manitoba, 2007a, pg.114). The "why" question has been addressed by the needs assessment.

Thus specific learning objectives for the RCM include (Fink et al, 2005) (Gelb, 2000) (Mufette-Leender at al, 2005a) (Mufette-Leender at al, 2005b) (National Academy of Engineering, 2004) (University of Manitoba, 2007a):

- understand global context and need at work for rapid analysis and decision-making or problem solving;
- develop skills in analysis, decision-making, application, communication, time-management, interpersonal, and creativity;
- understand and analyze cases with educational challenges spanning analytical complexity, conceptual complexity, and presentation complexity;
- experiential learning through phases of individual preparation, small group discussions, and larger group discussions and presentations; and
- repeated action learning and use of core two-dozen (in business setting) analysis tools and charts.

Further the RCM, reflects Coil's (University of Manitoba, 2007a, pg.21) "seven principles of masterful facilitation … being courageous, being a role model, balancing flexibility and responsibility, making the process their, making it yours, focusing on content applicability, and linking it to business"; and the author considers himself to utilize Poonwassie's (University of Manitoba, 2007a, pg.21) skills- interpersonal, content expertise, instructional methods and techniques expertise, with a "facilitator/personal model/expert" teaching cluster (University of Manitoba, 2007a, pg.22).

The cause-effect diagram (Figure 1) represents real-world factors from this discussion as well as stakeholder discussions including students at Kwantlen University College, that impact classroom learning. Also note that terms used in Table 1 are discussed in the rationale section.

Figure 1- Cause-Effect Diagram for Learning Challenges in the Classroom

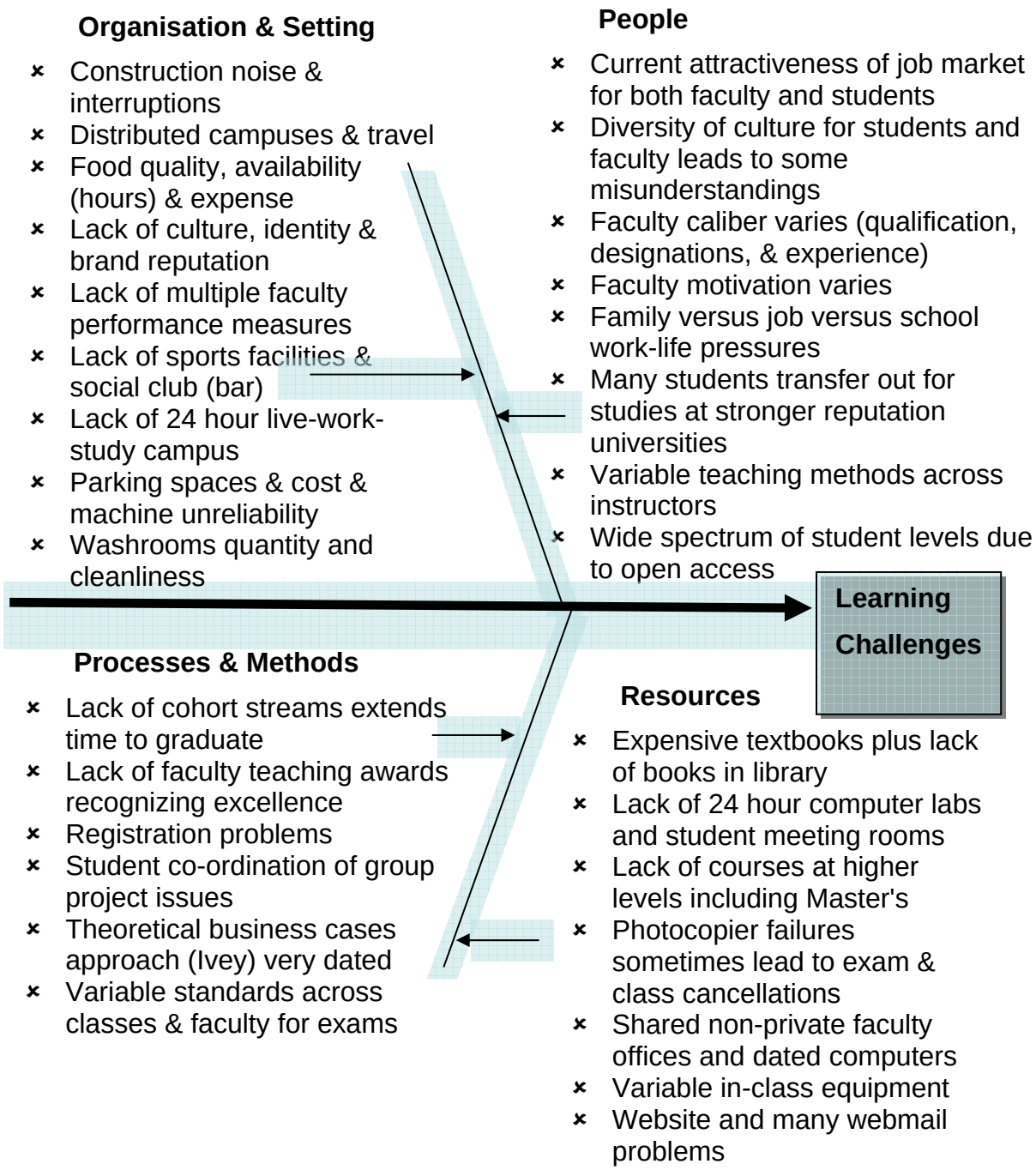

Figure 2 - Example Images from In-Class Student Trade-Shows Indicating Real-World Problem Solving Results

Table 1 part a- Rapid Case Method In-Class Group Exercise (time in minutes, breaks approximately every 50 minutes) (University of Manitoba, 2007a) (Fink et al, 2005) (Gelb, 2000) (Klatt, 1999) (National Academy of Engineering, 2004)

Introductory Definitions and Description of Method (15)

- Lecture-style facilitator delivery of content; Facilitation strategy of direction

Class Brainstorm to Create Template for Analysis (15)

- Utilizing other courses, prior knowledge, work experience, and current course text
- Class knowledge environment and community learning
- Facilitation strategy of enabling catalyst facilitator and collaborator, model of behavioral, humanistic and dialectical
- Carnegie Mellon University learning activity of problem solving and panel discussion
- Da Vinci experiential principles of curiosita, sfumato, and dimonstratzione
- Experiential Kolb phase 3 - abstract conceptualization based upon prior knowledge (a 'warm-start')
- Critical thinking Apps phases- awareness, and alternative exploration

Setting of Exercise Timing, Stages and Expectations (5)

- Transition of facilitator to role-play of power relationship as consulting team leader of student consultants
- Facilitation strategy of direction

Provision of Case Example, Materials, Forming Groups, Rearranging Class (5)

- Facilitator creation, and provision of case study content including realia such as magazines, reports, and products
- Facilitation strategy of direction and enabling catalyst facilitator, model of dialectical
- Da Vinci experiential principles of sfumato, and corporalita

Individual Rapid Cycle Process with Focus Questions (5)

- Experiential Kolb phase 4 - active experimentation
- Critical thinking Apps phase- awareness
- Carnegie Mellon University learning activity of individual project, and reports/memoranda/briefing
- Da Vinci experiential principles of sensazione, and sfumato

Class Question and Answer to Support Facilitator-completed Analysis on Board (20 to 30)

- Facilitation strategy of enabling catalyst facilitator and collaborator, model of behavioral, and information processing

- Carnegie Mellon University learning activity of problem solving, case-study analysis, and reports/memoranda/briefing
- Da Vinci experiential principles of sfumato, dimonstratzione, and connessione
- Experiential Kolb phase 4 - active experimentation; Critical thinking Apps phases- awareness, and exploration

Table 1 part b - Rapid Case Method In-Class Group Exercise (time in minutes, breaks approximately every 50 minutes) (University of Manitoba, 2007a) (Fink et al, 2005) (Gelb, 2000) (Klatt, 1999) (National Academy of Engineering, 2004)

Small Group Analysis with Report and Presentation Deliverables and Deadlines (Klatt, 19995 to 55)

- Facilitation strategy of collaborator, model of behavioral, information processing, humanistic and dialectical
- Carnegie Mellon University learning activity of problem solving, case-study analysis, and reports/memoranda/briefing
- Da Vinci experiential principles of curiosita, sensazione, and dimonstratzione
- Experiential Kolb phase 4 - active experimentation, phase 1 - concrete experience
- Critical thinking Apps phases- awareness, alternative exploration, tumultuous transitions, integration, and action

Small Group Class Presentations including Question-Response (5 each x 4 groups)

- Facilitation strategy of direction, model of behavioral and humanistic
- Carnegie Mellon University learning activity of reports/memoranda/briefing, and panel discussion
- Da Vinci experiential principles of sfumato, dimonstratzione, and connessione
- Experiential Kolb phases: 2- reflective observation, 3- abstract conceptualization , 4- active experimentation

  Critical thinking Apps phases- tumultuous transitions, integration, and action

Small Group Edits to Report and Hand-In (10)

- Facilitation strategy of collaborator, model of behavioral and humanistic
- Carnegie Mellon University learning activity of problem solving, and reports/memoranda/briefing
- Experiential Kolb phase 1- concrete experience; Critical thinking Apps phases- integration, and action

2. Rationale

Carnegie Mellon University identifies seven types of learning activities (University of Manitoba, 2007a, pg.36): problem solving, case-study analysis, individual projects, group projects (long-term), reports/memoranda/ briefings, role playing and simulations, and panel discussions. In just one three hour RCM workshop, the majority of learning activities are incorporated (see Table 1).

Gelb (2000) says there are seven critical creativity principles after Leonardo da Vinci that need to be followed for success (and could be viewed as student learning objectives):

- *curiosita (curiosity)*: An insatiably curious approach to life;
- *dimonstratzione (testing knowledge)*: A commitment to test knowledge through experience;
- *sensazione (senses)*: The continual refinement of the senses, especially sight, as the means to clarify experience;
- *sfumato (ambiguity)*: A willingness to embrace ambiguity, paradox, and uncertainty;
- *arte/scienza*: The development of the balance between science and art, logic and imagination ("whole-brain thinking");
- *corporalita (physical motion)*: The cultivation of ambidexterity, fitness, and poise; and
- *connessione (connections)*: A recognition and appreciation for the connectedness of all things and phenomena or "systems thinking".

Also, the Apps perspective (University of Manitoba, 2007c) on the process to teach critical thinking includes:

- helping learners become aware- by case study, consciousness raising, debate, drawing, field trip, group discussion, internship, questioning, quiet meeting, role playing, search for assumptions, simulated TV show, and 3D creation;
- helping learners explore alternatives- by openness including brainstorming, and creating a community of learning;
- helping learners work through a (tumultuous) transition process- by consciousness raising, group discussion, group project, individual conference, quiet meeting, seminar study group;
- helping learners integrate- by consciousness raising, drawing, group discussion, individual conference, quiet meeting, searching for assumptions, seminar, study group, 3D creation; and
- helping learners take action- including during earlier phases, as a reality check to confirm learning.

Finally, both Gelb principles (2000) and Apps perspectives (University of Manitoba, 2007c) are reflected in the RCM in Table 1. It's important to note that all the different approaches from literature and practice do not directly correlate or overlay readily, and that, for example, often different Gelb principles for stimulating creativity and problem solving occur at the same Kolb phase (University of Manitoba, 2007b,pg.42).

Table 2 indicates the majority positive feedback from students upon completing a semester featuring a number of RCM exercises. Also note that a number of the identified learning challenges from the cause-effect-diagram in Figure 1, have also been overcome.

Table 2- Sample Majority Positive Feedback from Students Regarding Rapid Case Method and Practitioner-led Learning (2007)

"after a few cases, it got much easier- we were amazed at how much you could do in a short-time"	*"inspired me to think about a career in product design"*
"definitely required more discipline and responsiveness from the instructor to keep the pace fast"	*"made me think more about the intellectual demands and leadership skills of professionals such as engineers"*
"for the first time I could see clearly the connection between the theory and application"	*"made working on the group project easier"*
"fun and like reality TV shows such as The Apprentice and Dragon's Den"	*"more of a self-study approach compared with other classes"*
"initially it was all confusing, but then we learned how to just get on with it"	*"much more interesting than listening to a long lecture"*
	"we soon stopped waiting to be told what to do"
	"you could really see how business professionals work in real-life situations"

3. Concluding Comments

Both practitioner-based texts, and educational theory offer good starting points to better develop training courses. Practitioner-based courses such as those from the University of Manitoba in Adult and Continuing Education are also of great value. Finally, experienced trainers also often have many tried-and-tested approaches that lead to successful training design to achieve learning objectives for learner requirements. Perhaps the best approach that will continue to evolve and improve is to blend the contributions from all these resources, and utilize such principles to design content, methods, activities and sequences meeting learner objectives.

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About the Author

David T. Wright has more than nineteen years award-winning engineering (i.e. space, aerospace, motorsports, defense, oil/gas, and mining), consulting, teaching and research success. Qualifications include: BEng, MBA, PhD, CEng MIET, MCMI, FRSA, SMIIE, and SMIEEE.

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