



Co-generative Learning: Applying the Undisguised Case Teaching Method




Commonwealth Cyber Initiative
SOUTHWEST VIRGINIA

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Session Agenda





Photo shared by Florida Water Daily at <https://ric.kip/jg/8/8w>

1. Case method and undisguised cases.
2. Higher education to workforce pipeline gap be bridged.
3. Creating a co-generative classroom.
4. Leadership concepts for teaching complex problem skills.
5. Case facilitation/problem-solving.
6. Question & Answer





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Benefits of the Case Method

- Arouse interest
- Provoke conflict
- Create empathy
- Force decision-making
- Stir the need to learn
- Pedagogical and research utility

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Case Method & Skill Development

- Problem-based learning, offering opportunities to learn critical thinking, communication, and group dynamics
- Participatory, discussion-based learning for gaining higher order skills





Photo by [teachway](#) on [Unsplash](#).

(University of Illinois Center for Innovation in Teaching and Learning, n.d.)



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Undisguised & Open Cases





Photo by [Ezra Top with Rai on Unsplash](#).

- Open cases have no definitive answers and multiple options for resolutions to real problems prevail (Herreid, 2006)
- Undisguised cases are real-life narratives with real protagonists (Fossey & Glover, 2006; Herreid et al., 2016)



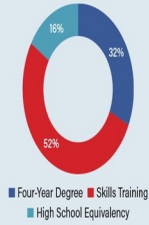
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Education and Workforce Mismatch

SKILLS MISMATCH

A majority of jobs (52%) require skills training beyond high school, but not a four-year degree.

AMERICA'S JOBS BY EDUCATION REQUIREMENT, 2018




Education Requirement	Percentage
Four-Year Degree	32%
Skills Training	52%
High School Equivalency	16%

■ Four-Year Degree ■ Skills Training ■ High School Equivalency

Note: Image from National Skills Coalition (2020)


- The US education-to-workforce pipeline is broken (AIR, 2021).
- Learning should “engage students in thinking about theoretical, applied and deeper conceptual understanding” (Herreid, 2006, p. 30).
- Undisguised case teaching offers possibilities for surfacing the creative forces in students.
- Future-proofing the labor force is needed to foster a dynamic workforce (O’Leary et al., 2022).



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Redirecting Education Toward Key Concerns


- Rapid technological changes require an adaptive workforce, co-operating in a community of practice (Northouse, 2022; Raelin, 2016).
- Digital jobs are increasingly becoming adaptive and require requisite skills (The Prince’s Trust, 2022).
- Future workforce requires leadership in a complex adaptive system.



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Practice Philosophy: Co-generative Classroom


- The classroom must consciously transition from the ‘old’ (teaching) to the ‘new’ (learning).
- In the old: the instructor “uses a funnel to pour knowledge into students’ brains” (Aspelin, 2021, p. 590).
- In the new: the instructor’s role is to pump out students’ creative forces to the surface (Aspelin, 2021).
- The undisguised case method creates co-generative learning that promotes the ‘new.’



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The Class Setting

- Collaborative leadership learning groups (CLLGs) encourages good learning and multiperspectives (Denyer & Turnbull James, 2016).
- Classroom should be democratic, engaging and participatory.
- Relevant teaching aids that enable independent and collaborative activities.
- Explore experiential learning model customized to fit classroom reality.



Collaborative learning enables a team to combine its knowledge and skills in making sense of a complex phenomenon;

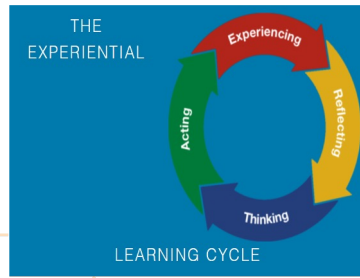
from Technology and Learning: A Guide to Implementation, 2016

Note: Image by Ken Whyteck at flickr.com

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Experiential Learning with Case Studies



- Pedagogical utility of an undisguised case (Herreid et al., 2016).
- Skills development in managing uncertainties.

Note: Image from the Institute of Experiential Learning (n.d.).

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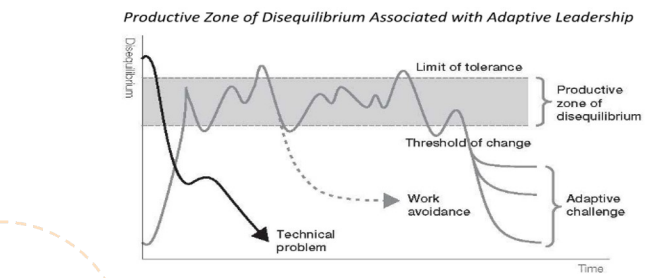
Adaptive vs. Technical Issues

- Technical:** known solutions, resolvable through current structures, procedures, practiced ways of doing things
- Adaptive:** new situations without known precedent – only addressed through changes in people’s priorities, beliefs, habits, and loyalties
 - Note: Doing old job better, longer, with more help will not address an adaptive challenge

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Adaptive Leadership



Note: Reprinted from R. A. Heifetz, A. Grashow, & M. Linsky, 2009, *The theory being the practice: A brief introduction to the adaptive leadership framework*, p. 18. Copyright 2009 by Harvard Business Press.


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Mismatch Warning!

- Technical solutions WILL NOT solve adaptive challenges
- They will:
 - Temporarily lower anxiety
 - Create the illusion of progress
 - Cast the leader in the role of hero
 - Reduce the motivation for systemic learning
 - Stifle the capacity for creativity and growth

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The Four Waves of Leadership



Salicru, S. (2019, June 16). *Why do the four waves of leadership matter?* LinkedIn. <https://www.linkedin.com/pulse/why-four-waves-leadership-matter-sebastian-salicru/>

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Leadership-as-Practice, not Leadership-as-Usual

Leadership-as-Practice Development (LaPD) Principles:

1. Reviewing and renewing the leadership concept held by learners and their organizations.
2. Surfacing and working with leadership processes, practices, and interactions.
3. Working in the learners' context on their organizational problems and adaptive challenges.
4. Working with the emotional and political dynamics of leadership in the system. (Denyer & Turnbull James, 2016)

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"Part of the problem is the number of employees who think they know the solution."

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Leadership Learning with Case Studies





Photo by [Dmitry Babushkin](#) on [Unsplash](#)

- Leadership cannot be taught but can be learned (Adair, 2019).
- Engaged participation in the co-creation of knowledge through:
 - Asking the right questions
 - Situating oneself in the world
 - Critically & analytically probing to collectively find solutions

(HBS, Christensen Center for Teaching and Learning, n.d.; Illinois University, Center for Innovation in Teaching and Learning, n.d.).



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The Oldsmar Water Case Study






Image from Pixabay: <https://pixabay.com/illustrations/cyber-security-business-corporate-344362/>

How would you respond to each of the case challenges?

1. Technical vs. Adaptive Work
2. Activities of Leadership-as-Practice (L-A-P)
3. Connecting to Other Contexts



<http://hdl.handle.net/10919/113624>



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TODAY

NBC's Today Show report on "Water Systems At Risk Of Potentially Deadly Cyberattacks" (2021, June 19). <https://www.youtube.com/watch?v=5JNtFciIow>



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Students' Initial Questions





Photo by [Camila Rodriguez](#) on [Unsplash](#)

- Why was Oldsmar water chosen for the attack?
- What role could regional and state leaders do to fix this problem?
- How does ethical leadership prevent/solve wicked problems?
- How can we bridge the educational gap between adaptive and technical skills?
- How does education need to change to meet the needs of the workforce?
- How do we make sure that communication between local authorities, regional water resources, and state water control boards are regularly made?



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Challenge #1: Adaptive vs. Technical

Challenge Type	Problem Definition	Solution	Locus of Work
Technical	Clear	Clear; tried and tested precedents	Authority (expert) will implement existing structures and roles
Technical and adaptive	Less Clear: some learning needed to diagnose	Requires some learning	Authority will have to consult stakeholders
Adaptive	Requires learning	Requires systemic adaptive learning; involving beliefs, norms, values	Stakeholders (shared leadership)

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Municipal Water Treatment Attack: OLDSMAR FL

Threat Actors Leveraged TeamViewer To Access A Water Treatment Plant's Controls To Modify Lye Concentration.

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Four A's of Adaptive Leadership

(Ramalingam et al., 2020)

Anticipation of likely future needs, trends and options.	Articulation of these needs to build collective understanding and support for action.
Adaptation so that there is continuous learning and the adjustment of responses as necessary.	Accountability , including maximum transparency in decision making processes and openness to challenges and feedback.

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Challenge #2: Leadership-as-Practice

Critical Processes

Activities:

- Scanning
- Signaling
- Weaving
- Stabilizing
- Inviting
- Unleashing
- Reflecting

Note: Adapted from "Creating Leadership Organizations: How to bring out leadership in everyone," by J. A. Raelin, 2003, p. 7

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Challenge #3: Other Contexts

the security ledger

A New Jailbreak for John Deere Tractors Rides the Right-to-Repair Wave
A hacker has formulated an exploit that provides root access to two popular models of the company's farm equipment.

Feel Good Ukraine Tractor Story Highlights Ag Cyber Risk
March 2, 2022 12:15 by Paul Roberts

Rise of precision agriculture exposes food system to new threats

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Questions & Discussion

- How might you use an open and undisguised case?
 - What would be most helpful in teaching notes?
 - What considerations or hurdles might limit application?
- How might educators engage more in developing and sharing teaching case studies?
 - Where would you look to find or develop a case?
 - Where do you see opportunities to further engage students in writing case studies?

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Case Writing Assignment

ABE 2014 - Leadership for Professionals in Agriculture Case Study Development Assignment

Purpose: The purpose of the case study development assignment is to produce verification of your ability to analyze and synthesize multiple concepts of leadership theory in real world, agricultural contexts. In addition, the assignment offers you experience in applying shared leadership in a small group setting. This assignment is a calculating experience that has the potential to align with each of the course learning objectives:

1. Define leadership in the context of agriculture
2. Identify, discuss, and apply leadership styles in call and others
3. Identify leadership traits and leadership styles in call and others
4. Identify, define, and develop personal vision, mission, and goals
5. Lead by example

Rationale: In a review of student case writing an assessment tool, Rosenblum (2005) reported that students who were assigned case writing found the exercise to be both demanding and rewarding. Students summarized their experience by saying "It was challenging" and one of the few times I felt like I was actually tested on something I learned with tools I was given here".

"It makes you think and makes you feel".

"It's the best way of doing a final".

According to Ashman and Crockett (2011), engaging students in writing case studies is an effective way to enhance their learning and to improve their understanding of the concepts being taught. Case writing is a valuable tool for developing critical thinking skills and for addressing the weaknesses of traditional classroom instruction.

Components/Criteria	Points	Qualities of an A-Level Submission
Introduction	10	<ul style="list-style-type: none"> • Identifies the topic, scope, and setting of the intended case. • Clarifies how and why the team selected the case topic and site (i.e. organization).
Purpose & Objectives	15	<ul style="list-style-type: none"> • Outlines a specific teaching purpose for the case and multiple learning objectives. • Demonstrates a clear connection to multiple course concepts.
Story/Abstract	15	<ul style="list-style-type: none"> • Offers a 2-3 paragraph introduction to the case site and major issues or problems. • Highlights an agriculturally-related case, set within the past five years. • Includes a bulleted outline of the headings and content anticipated for the case and teaching note.
Case Content	15	<ul style="list-style-type: none"> • Identifies central characters and key decision makers in the case. • Outlines a timeline, complete with deadlines and person responsible for each task. • Identifies primary and secondary sources to research about the case.
Research Plan	15	<ul style="list-style-type: none"> • Highlights key opportunities, such as interviews or organizational collaboration, that will likely strengthen the final case report. • Recognizes likely constraints, such as access and time limits, on ideal research and development of the case.
Opportunities & Constraints	10	<ul style="list-style-type: none"> • Includes reference list, formatted in APA style. • Presents other tables, figures, and/or resources relevant to the case.
Appendices	10	<ul style="list-style-type: none"> • Includes reference list, formatted in APA style. • Presents other tables, figures, and/or resources relevant to the case.
Writing & Overall Impression	10	<ul style="list-style-type: none"> • Focused narrative, no more than 3,000 words. • Submission is free from structural, grammatical, and spelling errors that might otherwise distract the reader.
Total	100	

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Student-Written Cases in Fall 2022

Mission Focused Self-Management in Comparison to Other Leadership Approaches

Food Insecurity: A Nationwide, Regional, and Local Problem

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**Discussion, Insights,
& Final Thoughts**

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