

The Innovative Instruction Workshop

Facilitating learning for higher-order thinking

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The Information Age comes with many surprises, including events and technologies seemingly ripped from the pages of science-fiction novels. Along with radical technological innovation, the Marine Corps will see flashfire wars, opportunistic terrorist attacks, and sudden natural disasters. How might the Marine Corps prepare Marines for these challenges? How, in particular, does Training and Education Command (TECOM) foster the cognitive capabilities required for tomorrow’s increasingly uncertain, complex, and decentralized operating environment?

This article explores the Innovative Instruction Workshop (IIW): one of TECOM’s answers to these questions. This ten-day workshop puts participants (both trainers and educators throughout TECOM) in control of their own learning on how to think, decide, act, and develop ways to facilitate similar learning for others. In this article, we address the origins of the IIW and the

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Marine Corps’ current learning model, examine the design of the IIW, analyze data and findings from its first year, and describe the next steps.

The Need for Higher-Order Thinking

The Marine Corps recognizes the

need to develop the capacity of Marines to engage in higher-order thinking with the ability to analyze, synthesize, and evaluate. In 2011, the Small Unit Decision Making (SUDM) initiative determined that, to overcome tomorrow’s challenges, Marines need certain cognitive competencies and relational skills.² In spite of the promises of future technology, Marines must apply these mental capabilities in action or quickly find themselves outthought and, consequently, outfought. How do we develop such skills? Active learning—which puts the student, not the instructor, at the center of learning—provides our best means.⁴

In 2017, TECOM sponsored the IIW to fulfill the work of the SUDM initiative and related efforts. The IIW aims to positively shift, expand, and enhance the perspectives of those who train and educate Marines to develop the SUDM competencies and relational skills in their students.⁴ The IIW marks

“Why is it, in spite of the fact that teaching by pouring in, learning by a passive absorption, are universally condemned, that they are still so entrenched in practice? That education is not an affair of “telling” and being told, but an active and constructive process, is a principle almost as violated in practice as conceded in theory.”

*—John Dewey,
Democracy and Education, (1916)¹*

a radical departure from the traditional Marine Corps approach to instructor development and underlying learning philosophy.

The Current Model

Generally, the Marine Corps follows a teacher-centric or “pouring in” approach to instruction that philosopher and education reformer John Dewey critiqued some 102 years ago. Paulo Freire, the highly influential Brazilian educator, later termed this the *banking model* of education.⁵ This model treats education as an act of depositing information, where “the scope of action allowed to the students extends only as far as receiving, filing and storing the deposits.”⁶ Marines may recognize this in practice: students passively sitting in receive mode, focused on the instructor and his performance; the instructor, as the sage on the stage, attempting to convey his knowledge through lectures, PowerPoint, and discussions with predetermined conclusions.⁷ The banking model, despite enjoying widespread acceptance and doctrine-like status, fails to develop higher-order thinking. While we do not entirely deride this approach, it ultimately lacks effectiveness and efficiency.⁸

The IIW: A Learner-Centered Workshop

In contrast, the IIW employs a *learner-centered approach*. Learner-centered facilitation treats Marines like adults who are capable of learning and developing themselves while simultaneously supporting the same for others.⁹ A learner-centered approach inherently involves active learning, or the participants’ critical and creative engagement with concepts and problems. Learning, more than just knowing and being able to recall information, requires Marines to analyze, synthesize, and evaluate the concepts presented.¹⁰ By leveraging active learning, the IIW aims to enable participants to further their own development, as well as develop the decision making, adaptability, and critical thinking abilities of their students.

The IIW team designed the workshop using *threshold concepts*, or fundamental and powerful concepts about a profession that—when comprehensively

understood—demarcate a moment of significant increase in competency.¹¹ The team identified two threshold concepts as a point of transition for facilitators: the role of the facilitator in the learning process and the role of the student in the learning process.

By developing a complex understanding of the learning process and their role in it, participants cross a threshold that denotes a significant increase in their level of competency as facilitators. Threshold concepts act as the red thread that holds the IIW together, providing the rationale for the inclusion—or exclusion—of workshop topics, exercises, and assignments. Each day’s topics serve as building blocks to further develop participants’ understanding of the adult learning process, enable them to effectively facilitate learning and design programs, and further the learning and development of themselves and others upon their return to their schoolhouses. The topics of the ten-day workshop include:

- Understanding the adult learner.
- Establishing the learning environment.
- Encouraging critical thinking.
- Coaching.
- Master instructor development (MInD).¹²

- Decision games (e.g., decision-forcing cases, tactical decision games, wargames, etc).
- Program planning.
- Political savvy.¹³
- Communities of practice.

Participants learn *how* to facilitate learning by experiencing various interactive methods, such as decision-forcing cases, wargames, tactical and ethical decision games, terrain-model exercises, role playing, and other experiential learning exercises. Workshop facilitators leverage writing, drawing, active listening, and other creative forms of discourse to enable participants to stretch and grow as facilitators of learning. Students receive repeated opportunities to facilitate exercises and discussions and teach their peers with the support of the facilitation team.

Theory in Use

Designed with a constructivist lens to adult learning, each exercise and assignment in the IIW purposefully places participants in their own contexts to capitalize on prior experiences.¹⁴ This design reinforces the acquisition of new knowledge and allows participants to explore their new roles, relationships, and actions—as both learners and facil-



Participants should have an understanding of the learning process. (Photo by author.)

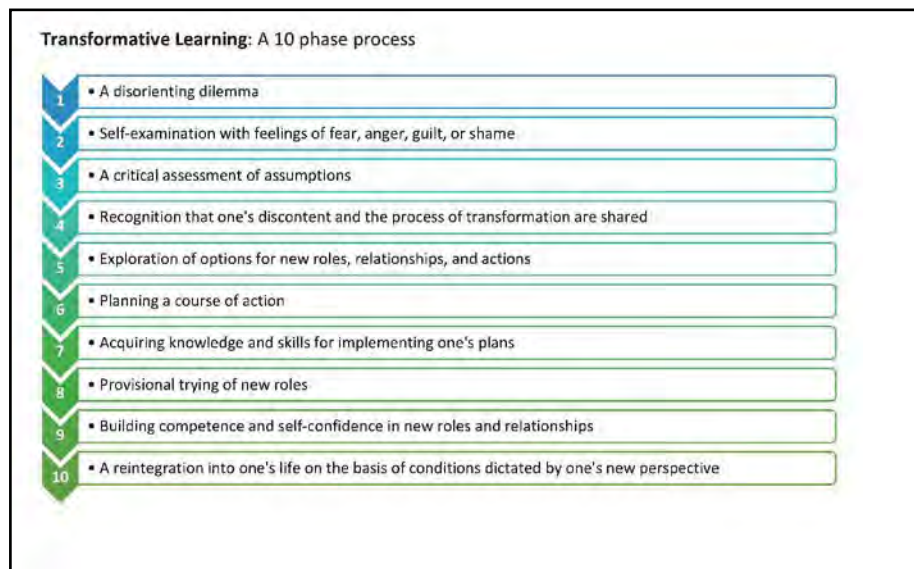


Figure 1. A ten-phase process. (Figure by author.)

itators—in deeper and more meaningful ways. Once participants recognize alternative roles of the facilitator and student in the learning process, they can begin to reflect on how to assimilate the new framework into their own practice.

The IIW provides the conditions to foster *transformative learning* for participants' views of the role of a facilitator and the student role in the learning process. Transformative learning, an adult learning theory, explains how adults experience higher-order learning through deep and meaningful, life-changing learning experiences.¹⁵ Learning in the informative sense changes what we know; however, transformative learning changes *how* we know.¹⁶ In other words, informative learning pours content into the cup, and transformative learning changes the capacity of the cup.¹⁷ (See Figure 1.)

IIW participants often report experiencing a disorienting dilemma at the onset of the workshop. On day one, they gather in small groups to list characteristics of their best and worst learning experiences on posters.¹⁸ Without exception, the groups report examples of learner-centered facilitation as their best experiences and teacher-centered instances as their worst. By creating the lists, seeing others create similar examples, and then hearing the explanations, participants reflect on their prac-

tices as facilitators. The recognition of their role in contributing to the worst experiences of others presents them with a disorienting dilemma. On day two, participants consider student perspectives as they create lists of barriers to learning.¹⁹ After constructing lists of institutional, situational, and dispositional barriers, the participants begin to see—in their contexts—the complexity associated with learning and begin to empathize with their students.

In moments like these, the facilitators support participants while still leaving them responsible for drawing connections and making their own meaning. The facilitation team further supports participants by trusting them and by providing a supportive learning environment, a critical reflection of assumptions, discourse among participants and facilitators, interactive learning exercises, and space for reflection.

Space for reflection happens in class—individually and amongst peers—through journaling and in a final reflection assignment submitted a week following the final day of the workshop. These assignments involve audio recordings, videos, drawings, or other creative forms to encourage participants to make meaning of their experiences in an effort to stretch and grow. The journal provides a platform for the facilitators to challenge the participants'

thinking through probing questions and give support through encouraging comments. Facilitators also use the “Critical Incident Questionnaire” at the end of every other workshop day as a formative assessment to collect anonymous data on participant experiences.³⁰ This data directly results in the team making meaningful changes to further support learning. These changes, moreover, take effect the very next morning. Whether through journal responses or Critical Incident Questionnaires, this immediate interaction with the participants' work allows them to feel validated, heard, and supported.

Data Collection

Data collection and analysis efforts provided significant insight into the extent that the IIW fostered transformative learning for participants, and participants implemented changes in their practice and at their schoolhouses. Data collected from the first year consisted of reflective journals, a final reflection assignment, and the Learning Activities Survey (LAS).²¹ The LAS measured to what extent participants experienced transformative learning as a result of attending the IIW and identified aspects of the workshop that influenced the perspective change. Follow-up interviews—conducted four to seven months after the conclusion of the workshop—served to:

- Validate the LAS results.
- Provide understanding of the perspective transformative learning experiences.
- Highlight the post-workshop actions taken by participants in their development of self, others, or their curriculum.

Twenty-eight participants (four to six from each workshop) participated in follow-up interviews.

In its first year, the team conducted six workshops: four at Quantico and one each at Camp Pendleton and Camp Lejeune. The 73 participants included instructors, course chiefs, curriculum developers, and academic officers. Sixty-four out of 73 participants completed an LAS on their last day of the workshop. (See Figure 2.)

The Results

As a result of mixed-methods analyses of the LASs, final reflection papers, and follow-up interviews, three major findings emerged from year one of the IIW:

Finding #1: Participants experienced transformative learning. An overwhelming majority, or 79.7 percent of participants ($n = 51$), experienced transformative learning with respect to their views

of the role of the facilitator and the role of the student in the learning process. These participants mentioned developing an enhanced perspective of their role as a facilitator in several ways. One participant described seeing himself as a more learner-centered facilitator:

It's not about me against you like, 'This is the knowledge that I have and I'm going to teach you and you're going to learn it.' It's more like, 'This is what I

have to offer. Let's read about it. Let's learn about it. If you have any questions, I can definitely help you ... get in the right direction, try to see what I can do to help you learn it.'

Another participant spoke of developing a new understanding of teaching approaches:

Being in the Marine Corps for so many years, we're used to teaching the same way every time ... there's [an] instructor in front of you, there's a PowerPoint, look at the PowerPoint, read the PowerPoint, and then they check [for understanding] by either questions or by a test at some point. Going in the workshop gives me a different view, different ways to facilitate the learning experience for the students ... It just made me realize ... there's more than one way to do this. You just got to find the right way for your target population.

Others shared how they now envision greater possibilities for implementing changes to their facilitation practice. One participant stated,

Once we got into the TDGs (tactical decision games) ... it opened my eyes to some of the things that could be applied to the course. And then I started thinking back, 'Well if I can do this then I can incorporate some of ... the other stuff that we learned.'

Participants described obtaining a new perspective on understanding the adult learner and the factors involved in the learning process. One participant shared,

[I] thought students needed/appreciate[d] a more teacher-centered environment, but [my] thoughts have changed because I experienced how valuable student-centered learning can be. [I was] impacted by learning how to implement a student-centered environment, how barriers affect learning ... [and] know now that there are several factors that impact how involved students are in their own learning.

Another participant described gaining a new appreciation for peer-to-peer in learning that "sometimes it takes somebody on their level that's just learn-

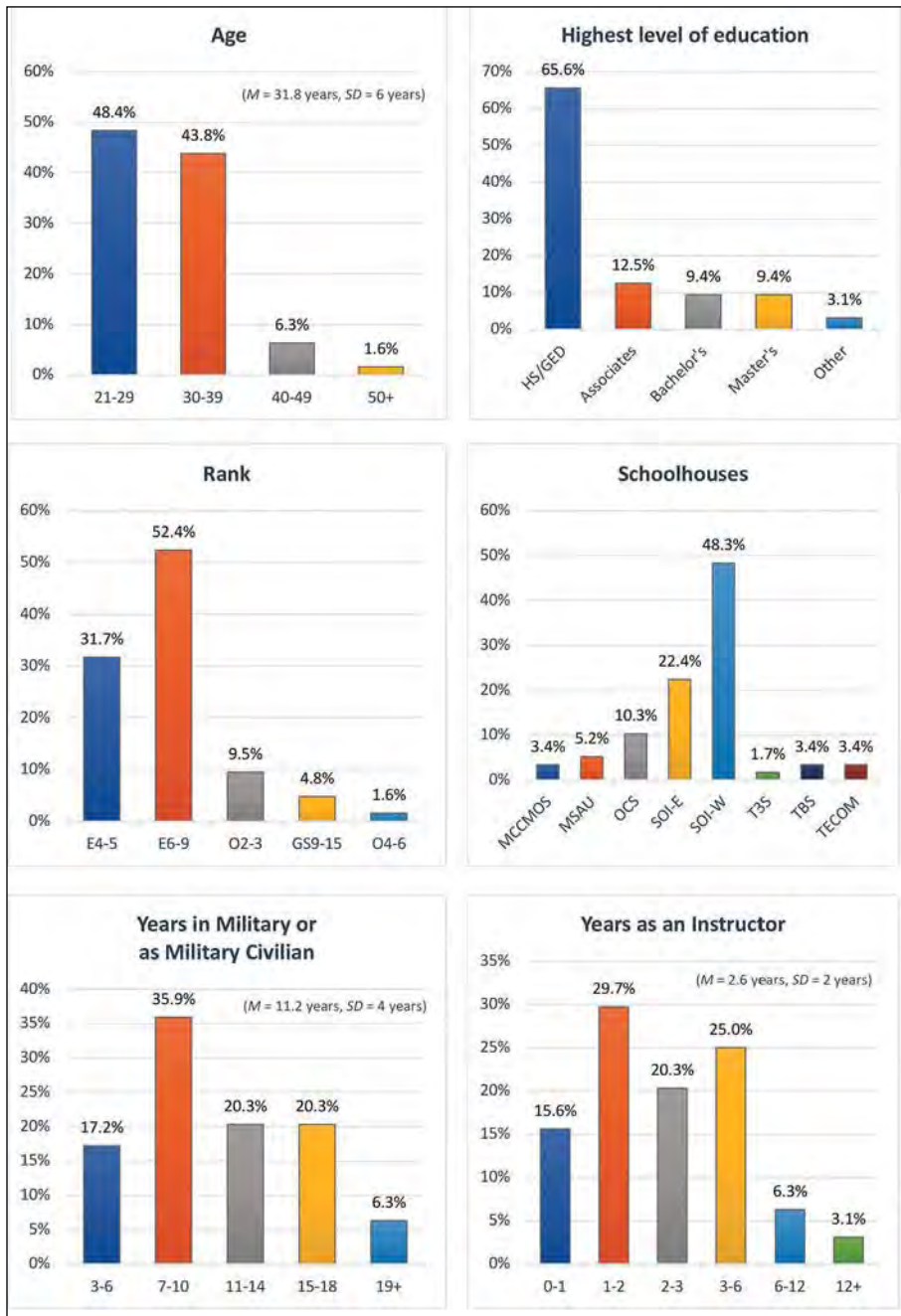


Figure 2. IIW participant demographic information. (Figure by author.)

ing at the same time ... to better explain it to them ... [and] help them grasp the concept.”

Statistical analysis of the LASs revealed that all participants who experienced transformative learning ($N = 64$) were influenced by the workshop design, exercise(s), or assignments. In particular, the greatest impact derived from the class exercises, discussions, self-assessments, and journaling. An overwhelming 82 percent ($n = 41$) felt influenced by challenging or supportive actions by facilitators and participants. One participant spoke of the impact of the learning environment created by the facilitation team, stating, “The students were able to participate a lot, ask questions, voice our opinions, without the instructors ridiculing our ideas; instead, they helped us build or develop better ideas.” Another participant spoke of the value of engaging in “conversations with students from different schoolhouses and learning from different[,] unique perspectives of peers.” In addition to attending the IIW, 21.6 percent of the participants who experienced transformative learning ($n = 11$), also credit this to a significant change in their life such as a billet change.

Finding #2: For participants who did not experience transformative learning, learning still occurred. For 20.3 percent of the participants ($n = 13$), transformative learning did not occur as a result of attending the IIW. Follow-up interviews revealed that many of these individuals already recognized the need for change in the training and education system. A minority of this population saw no need to change what, in their view, is an already-proven system. While these individuals may not have experienced a perspective shift, each stated finding applicability and value in the facilitation techniques encountered in the workshop.

Finding #3: Participants influenced change post-workshop. All participants interviewed ($N = 28$) reported implementing changes to improve teaching and learning as a result of attending the IIW. Interviewees reported effecting changes at three levels: the individual level, the course level, and the schoolhouse level.

Following the IIW, 78.6 percent of those interviewed ($n = 22$) described implementing changes to their individual teaching practices. Changes included creating a learning environment by interacting with students as adult learners; introducing group norms exercises; encouraging questions and experimentation; mitigating learning barriers; facilitating dialogue between students; coaching students; using less PowerPoint; using more questioning to encourage critical thinking; employing peer and small group learning exercises; using metaphors to facilitate learning;²² teaching decision-forcing cases, tactical decision games, and terrain model exercises; and using student-generated examples.

Moodle enables the IIW alumni to share knowledge and resources for the purpose of improving the quality of teaching and learning ...

Of those interviewed, 46.4 percent ($n = 13$) reported influencing changes at the course level. These participants described sharing knowledge and collaborating with other course instructors to improve facilitation, designing courses using learner-centered methods, and co-facilitating using learner-centered methods.

Fifty percent of the interviewees ($n = 14$) described influencing changes at the schoolhouse level. This includes training other instructors to utilize learner-centered facilitation methods, coaching other instructors for their professional development, changing program planning and evaluation methods to improve the quality of student learning experiences and outcomes, influencing leadership and academics on ways to mitigate learning barriers and incorporate learner-centered facilitation methods throughout courses, and recruiting others to attend the IIW. While

TECOM’s support for this workshop signifies institutional-level change, changes that go beyond the scope of individual schoolhouses have yet to be reported from IIW participants.

Going Forward

For the second year of the IIW, TECOM implemented two significant changes to further support institutional-level change. One addition included using Moodle, a learning management system, to serve as courseware and a virtual platform for IIW alumni to share ideas, ask questions, and find resources. Moodle enables the IIW alumni to share knowledge and resources for the purpose of improving the quality of teaching and learning at their schoolhouses. The IIW team also developed five- and seven-day variants of the ten-day workshop to address the limited white space that some formal schools provide for staff and faculty development.

In the End

In 2018, MajGen W.F. Mullen, CG, TECOM, charged TECOM to

[use an] approach that is focused on active, student centered learning that uses a problem posing methodology where our students/trainees are challenged with problems that they tackle as groups in order to learn by doing and also from each other. We have to enable them to think critically, recognize when change is needed, and inculcate a bias for action without waiting to be told what to do.²³

Detractors of this guidance argue that enlisted Marines, by and large, can neither facilitate nor learn the skills that MajGen Mullen calls for. If the data from IIW participants demonstrates anything, it establishes that learner-centered methods of facilitating higher-order learning do belong *at all levels* of the training and education system, to include entry-level training. Research confirms this and points to the ability of first-term Marines to participate in reflective thinking for the purpose of solving ill-structured or wicked problems.¹⁴

The methods used in the IIW inherently create efficiencies that make space

for reflection or reflective exercises. Past IIW participants continue to use the facilitation methods they experienced in the IIW with much success as they shift the focus from themselves to the learner and assume a supporting role. The disorienting dilemma experienced by most of the participants also demonstrates that the IIW differs widely from current practices. Much of the difference comes from scheduling time for and treating reflection as a significant part of the learning, and we as an institution cannot afford to cut this exponentially impactful time from our respective programs of instruction. We do not pretend that the IIW will solve all of the existing training and education challenges. However, it does begin to tackle MajGen Mullen's guidance to decrease the "dissonance between what we are doing with regard to training and education, and what we need to be doing based on the evolving operating environment."²⁵

Notes

1. John Dewey, *Democracy and Education*, (New York, NY: The MacMillan Company, 1916).
2. Training and Education Command, *U.S. Marine Corps Small Unit Decision Making January 2011 Workshop Final Report*, (Quantico, VA: 2011). The five cognitive competencies are sense-making, adaptability, problem-solving, metacognition, and attentional control. The ten relational skills are cognitive flexibility, resilience, anomaly detection, change detection, situational assessment, analytical reasoning, perspective taking, ambiguity toleration, self-awareness, and self-regulation.
3. Benjamin S. Bloom, *Taxonomy of Educational Objectives: Vol. 1: Cognitive Domain*, (New York, NY: McKay, 1956).
4. We use the terms facilitator and instructor interchangeably and to denote all individuals in TECOM who facilitate learning in training and education contexts, including professor, faculty, faculty advisor, and trainer.
5. Paulo Freire, *Pedagogy of the Oppressed*, (London, UK: Bloomsbury Publishing, 2018).
6. Ibid.

7. Maryellen Weimer, *Learner-Centered Teaching: Five Key Changes to Practice*, (San Francisco, CA: Jossey-Bass, 2013).
8. Charles C. Bonwell and James A. Eison, *Active Learning: Creating Excitement in the Classroom*, (ERIC Digest: 1991); *Democracy and Education*; Michael Prince, "Does Active Learning Work? A Review of the Research," *Journal of Engineering Education*, (Washington, DC: American Society for Engineering Education, 2004); Amy Roehl, ShwitaLinga Reddy, and Gayla Jett Shannon, "The Flipped Classroom: An Opportunity to Engage Millennial Students through Active Learning Strategies," *Journal of Family & Consumer Sciences*, (Alexandria, VA: American Association of Family and Consumer Sciences, 2013); Jonathan Gorry, "Cultures of Learning and Learning Culture: Socratic and Confucian Approaches to Teaching and Learning," *Learning and Teaching*, (Melbourne, AU: James Nicholas Publishers, 2011); Eric Mazur, *Peer Instruction*, (Upper Saddle River, NJ: Prentice Hall, 2007); and Scott Freeman, Sarah Eddy, Miles McDonough, Michelle Smith, Nnadozie Okoroafor, Hannah Jordt, and Mary Wenderoth, "Active Learning Increases Student Performance in Science, Engineering, and Mathematics," *Proceedings of the National Academy of Sciences*, (Washington, DC: United States National Academy of Science, 2014).
9. *Learner-Centered Teaching: Five Key Changes to Practice*.
10. *Active Learning: Creating Excitement in the Classroom*.
11. Jan H.F. Meyer, Ray Land, and Caroline Baillie, *Threshold Concepts and Transformational Learning*, (Rotterdam, NLD: Sense Publishers, 2010).
12. Karol Ross, Jennifer Phillips, and R. Lineberger, "Marine Corps Instructor Mastery Model," (Oveido, FL: Design Interactiv, Inc., 2015).
13. Joel R. DeLuca, *Political Savvy: Systematic Approaches to Leadership Behind-the-Scenes*, (Berwyn, PA: Evergreen Business Group, 1999).
14. *Democracy and Education*; and David A. Kolb, *Experiential Learning as the Science of Learning and Development*, (Upper Saddle River, NJ: Prentice Hall, 1984); Dorothy MacKeracher, "The Role of Experience in Transformative Learning," in *The Handbook of Transformative Learning*, (Hoboken, NJ: John Wiley & Sons, 2012).

15. Jack Mezirow, "Transformative Learning: Theory to Practice," in *New Directions for Adult and Continuing Education*, (Hoboken, NJ: Wiley, 1997); and Jack Mezirow, *Learning as Transformation: Critical Perspectives on a Theory in Progress*, (San Francisco, CA: Jossey-Bass Publishers, 2000).
16. Robert Kegan, "What 'Form' Transforms?: A Constructive-Developmental Approach to Transformative Learning," *Contemporary Theories of Learning*, (Abingdon, UK: Routledge, 2009).
17. Ibid.
18. Sharan B. Merriam and Laura L. Bierema, *Adult Learning: Linking Theory and Practice*, (Hoboken, NJ: John Wiley & Sons, 2013).
19. K. Patricia Cross, *Adults as Learners: Increasing Participation and Facilitating Learnings*, (Hoboken, NJ: Wiley, 1981).
20. Steven Brookfield, "Using Critical Incidents to Explore Learners' Assumptions," in *Fostering Critical Reflection in Adulthood: A Guide to Transformative and Emancipatory Learning*, (San Francisco, CA: Jossey-Bass Publishers, 1990).
21. J. Lukinsky, "Reflective Withdrawal Through Journal Writing," in *Fostering Critical Reflection in Adulthood: A Guide to Transformative and Emancipatory Learning*, (San Francisco, CA: Jossey-Bass Publishers, 1990); Kathleen P. King, "The Learning Activities Survey," *The Handbook of the Evolving Research of Transformative Learning Based on the Learning Activities Survey*, (Charlotte, NC: Information Age Publishing, 2009).
22. Peter T. Bürgi, Claus D. Jacobs, and Johan Roos, "From Metaphor to Practice: In the Crafting of Strategy," *Journal of Management Inquiry*, (Thousand Oaks, CA: SAGE Publications, 2005); Patricia Cranton, "Teaching for Transformation," in *New Directions for Adult and Continuing Education*, (Hoboken, NJ: Wiley, 2002).
23. MajGen William F. Mullen III, *TECOM Commander's Guidance*, (Quantico, VA: July 2018).
24. Patrick Love and Victoria Guthrie, "King and Kirchner's Reflective Judgment Model," *New Directions for Student Services*, (Hoboken, NJ: Wiley, 1999).
25. *TECOM Commander's Guidance*.