

Getting to Maybe: Improving the Education Doctorate in an Era of Uncertainty

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ABSTRACT

In an age of increasing complexity, particularly endeavors intended to address social justice, institutions of higher learning can be caught in the middle of the need for stability and responsiveness. Using CPED principles as a guide, this essay argues for complexity as an essential lens to address social justice, problems of practice, and systematic inquiry that incorporates multiple frames and perspective. It suggests specific tools to rethink approaches to foundational content and suggests a more central role of practitioner problems in doctoral coursework.

KEYWORDS: *complexity, evolutionary knowledge, problem of practice, education doctorate*

INTRODUCTION

As the level of organization increases, complex systems have a tendency to shift into a new mode of behavior, the description of which is not reducible to the previous description of the system's behavior. (Tsoukas & Hatch, 2001, p. 989)

Without question the world is changing at warp speed. Closest to home, our Amazon Dot helps my dementia-disabled husband access information he needs but has forgotten. My Apple watch decided on its own where I was headed today and flashed my expected travel time. My 15-year-old's textbooks are all housed on his school-issued tablet and on this device he completes and turns in all his assignments. Even social norms are changing. For example, my son's first girlfriend is openly bisexual.

On a more global scale, cyber-terrorism is discussed as one of the most serious security threats of this generation; computer systems are now held for ransom (Sanger, Chan, & Scott, 2017). U.S. military operations in Iraq favored more flexible protocols, waiving traditional hierarchy to enable faster response to the rapidly changing scenarios of network-based warfare (McChrystal, Collins, Silverman, & Fussell, 2015). In some communities, it is not uncommon to share the road with a driver-less car. Almost two dozen countries around the world recognize gay marriage, including four in Catholic-majority South America (Pew Research Center, 2015). Estimates on how frequently the doubling of human knowledge takes place range from every 12 months to every 12 hours. In 1940 that same phenomenon took 25 years to accomplish (Schilling, 2013).

That these, often exponential, shifts in technological and cultural norms equate to progress is arguable. That they represent a global reality of rapid change and increasing variables is one of the few certainties in an otherwise VUCA—volatile, uncertain, complex, and ambiguous—world (Berger & Johnson, 2015). The uncertainty of the era in which we now live, work, and learn makes it challenging

not only to predict the future, but concurrently difficult, if not impossible, to set realistic goals that drive us forward. The best we can do, perhaps, is aim for maybe. And, in the midst of this VUCA climate sits the education doctorate. Questions facing it include: Does the unpredictable nature of the world in which we now live implicate the education doctorate? Is there a foundation of knowledge that remains timeless? Should institutions of higher learning be protected while society rights itself? Do these institutions, in fact, represent a raft of stability amidst a chaotic sea?

My responses to these questions are an emphatic yes, *and*. I might argue, as do others (e.g., Four Arrows, 2017; Kochhar-Bryant, 2017; Lupinacci, 2017), that the graduate degree plays a critical role in society's future. In an era of fake news and an increasing disdain for academically based assertions, higher education may well be the eye of the storm and should be held harmless so that it can remain such. At the same time, I argue that the success of the education doctorate depends on recognizing the shifting and increasingly complex nature of the world. If there is a response to be made, I suggest it is to integrate *flexibility into the integrity* of the EdD degree.

This manuscript illuminates the evolutionary nature of knowledge in a complex society and it explores the necessity of utilizing a complex systems lens to inform societal progress and justice in doctoral studies. Within this context, I will examine how the principles developed by the Carnegie Project on the Education Doctorate (CPED) hold opportunity for this critical adaptation and the prospects afforded by the journey from practitioner/scholar to scholar/practitioner.

The CPED principles were established through the desire of its member institutions to solidify the role of the education doctorate within the broader field of doctoral study (Perry, 2016). Over the course of three years, CPED's members developed a set of six principles to guide institutional improvement efforts. These



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collectively held ideals now act as beacons for member institutions to reconsider how their education doctoral programs, and their practices, serve the needs of students and society. In the past ten years, the principles have played a critical role in design decisions in research, development, and implementation of education doctorate content and practices (Perry, 2016).

The professional doctorate in education:

1. Is framed around questions of equity, ethics, and social justice to bring about solutions to complex problems of practice.
2. Prepares leaders who can construct and apply knowledge to make a positive difference in the lives of individuals, families, organizations, and communities.
3. Provides opportunities for candidates to develop and demonstrate collaboration and communication skills to work with diverse communities and to build partnerships.
4. Provides field-based opportunities to analyze problems of practice and use multiple frames to develop meaningful solutions.
5. Is grounded in and develops a professional knowledge base that integrates both practical and research knowledge, that links theory with systemic and systematic inquiry.
6. Emphasizes the generation, transformation, and use of professional knowledge and practice. (CPED, 2009, para. 8).

The CPED principles illustrate my argument for complexity as we explore, in particular, principles related to social justice, problems of practice, and systematic inquiry that incorporates multiple frames and perspective.

COMPLEXITY AND SOCIAL JUSTICE

An initial claim to be made is that the work of rectifying social injustice is inherently complex, complexity being an unpredictable state in which a system's parts function interdependently, utilize diversity for productivity, and experience unintended consequences (Sargut & McGrath, 2011; Tsoukas & Hatch, 2001). This, of course, is noted in CPED's first principle as it acknowledges the complexity of professional problems of practice. Also, attributive to complex systems are multiple and multiplying variables, all of which exhibit relationship and emergence. It is this attribute that will most orient my claim that social systems, and by extension social justice, are complex.

To examine this further, Snowden (2010) offers the Cynefin Framework (see Figure 1). The Cynefin Framework distinguishes between systems that are simple, complicated, complex, and chaotic¹. Snowden's graphic explains the predictable nature of simple and complicated systems. The variables are controllable in

these systems with the goal of managed and consistent results—which are possible because causes and effects are known (Berger & Johnson, 2015; Snowden, 2010). Complex systems, on the other hand, are non-linear and become such when the number of variables renders an outcome impossible to predict in advance. Too, the problems that develop in complex systems tend toward causalities which are in themselves arguable. They are challenging to define, much less resolve, and reinforce Snowden's (2010) claim that the only route to resolution is learning—probe, sense, and respond.

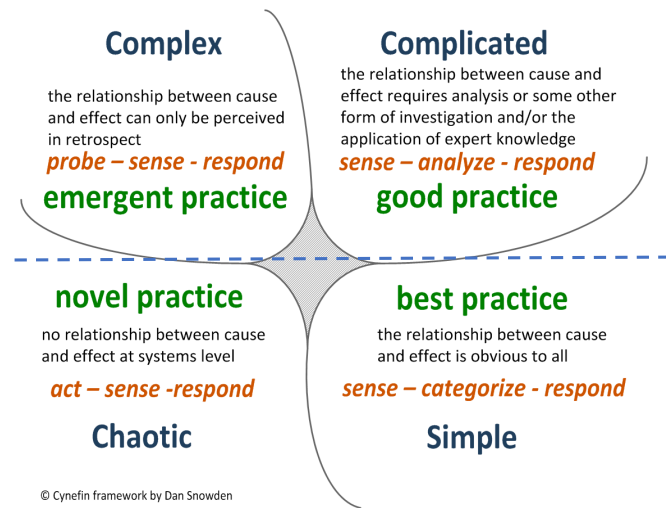


Figure 1. Cynefin framework. Reprinted from *Cognitive Edge* by D. Snowden, 2010. Retrieved from <https://cognitive-edge.com>. Reprinted with permission.

While 21st Century realities mean most organizations now have some complex attributes (Berger & Johnson, 2015; Sargut & McGrath, 2011), there can be little argument to the claim that social justice pursuits fall most heavily into the complex domain. In a most basic analysis, social systems contain more variables, each of which serves as a multiplier, shifting the system and increasing its complexity in true evolutionary fashion. Consider the intersections of technological advances, where communities are now established across borders and humanitarian cultural norms. These are two of many variables impacting immigration challenges across the globe. Whereas centuries ago immigration may have been successfully managed with a simple solution (e.g., a wall to protect a medieval city), the variables that comprise today's immigration challenge comprise what complexity scientists term a wicked problem (Conklin, 2005; Sargut & McGrath, 2011). In complex challenges, we do not know which variables become viable leverage points until we engage, and learn—probe, sense, and respond (Snowden, 2010). They epitomize the reality of *maybe*, as claimed by Peter, "Some problems are so complex that you have to be highly intelligent and well informed just to be undecided about them" (Peter, n.d., p. 1). Considering the elements of a complex environment, juxtaposed with social challenges like injustice, it is doubtful that any doctoral student can adequately address this injustice without the lens of complexity.

Heifetz, Linsky, and Grashow (2009) refer to complex challenges as adaptive and claims that one of the biggest leadership

¹ Chaos is reserved for short-cycle challenges, where the only goal is to establish sufficient order to take action and is outside the relevance of this discussion.

errors is to treat adaptive (complex) problems as technical (simple or complicated). If doctoral programs intend to develop leaders able "to make a positive difference in the lives of individuals, families, organizations, and communities" (CPED, 2009), a solid grounding in complexity theory and its unpredictable nature becomes a curricular imperative.

ACKNOWLEDGING THE NATURE OF KNOWLEDGE

Which means, what, exactly? Does curricular knowledge fall into that thorny world of complexity? Do the addition of new variables, perhaps even those as subjective as alternative perspective or conclusions around data suggest that knowledge is, in fact, evolutionary and thus complex? The CPED principles account for the generation of knowledge; I argue that generative knowledge is, in fact, evolutionary.

While most of the writing on evolutionary learning has been in the context of evolutionary systems design in service of a more sustainable future (Banathy, 1985; Laszlo, 2003), a claim can be made that all knowledge can, and should, be considered evolutionary. In this paper I extend that concept to consider the evolutionary nature of knowledge itself and its relevance to the doctoral degree. Certainly the evolving nature of knowledge fits within the vision of doctoral research as it seeks to uncover new "truths," which in themselves might be considered evolutionary. It can also be claimed, however, that the curricular base of many institutions approach foundational knowledge as static. These foundations may, in fact, be ripe for critical analysis and fit within the confines of evolutionary learning theory. But foundational knowledge also becomes a key opportunity to consider a core competency of complexity and its application to the evolving nature of knowledge through the addition of variables.

Heron and Reason (1997) claimed that the way in which knowledge is acquired is in itself a complex endeavor, positioning different ways of knowing, e.g., experiential, practical, etc., as interdependent variables. Laszlo (2003) continued this theme with his exploration of evolutionary learning in relation to evolutionary systems design. In his cycle of awareness, understanding, competence, and praxis, he posits knowledge as a state of constant development. Banathy (1985) is most explicit in his call to establish competence in complex thinking, noting that evolutionary learning "can enable us to cope with change and complexity, renew our perspectives, and reassign our systems, often reorganizing them at higher levels of complexity" (p. 11). Given that in the thirty years since Banathy's impassioned call for an evolutionary view of knowledge and learning the world has become exponentially more complex, it is not illogical to suggest that this framing of knowledge as evolving is more pressing than ever and will continue to become so.

There are implications, of course, in repositioning a guiding epistemology to a less certain set of foundations, particularly for students who favor objectivity. I argue, however, that objective reasoning must be put forth as a beginning stage of a doctoral journey. In a complex environment, where adaptation is the norm, it is simply not possible to engage in robust understanding without attending to the context in which the supposed objective "fact" occurred. If in fact the education doctorate intends to bring about solutions to complex problems of practice (CPED, 2009), this becomes the work of the doctoral student: to understand the systems

in which the challenges of ethics, equity, and social justice reside. I am, of course, arguing that all doctoral students be asked to systemically apply a complexity lens to content in the course of their inquiry. By doing so we will enable a more systemic multiperspectived view of content and societal challenges. But how might that happen?

PROBLEMS OF PRACTICE

With the groundwork laid to apply a complex lens to doctoral studies and the imperative of understanding complexity as a perspective, we move now to another improvement principle, that which promotes field-based problems of practice. It also speaks to a core proposal: a more central role for the practitioner problem of practice as a structure in which to explore and apply critical content. This proposal begins with a discussion of the doctoral student and the opportunities afforded by the practitioner/scholar.

I term the typical education doctoral journey as a shift from practitioner/scholar to scholar/practitioner. Students enter doctoral work primarily as practitioners, bringing with them field experience in which, knowingly or not, they have most likely encountered complex systems and wicked problems. Over the course of doctoral studies, I maintain that scholarship takes a more central view in a doctoral student's perspective-taking. The key is to capitalize on that practitioner experience so that it becomes the context for scholarship. With the average age of those earning education doctorates of 40 (Liu, 2011), students bring years of hands-on experience with systems that most likely have complex and wicked problems to solve. This is a ripe opportunity from which to draw relevance, consider complexity, and develop greater capacity to address social injustice.

My proposal extends the typical praxis or the use of field experience in one's culminating dissertation research to an instructional model that utilizes field-based experiences as a key access point for all doctoral content. The field of complexity is vast and can easily consume a central focus of study. Integration of complexity theory into practitioner experience creates a more heuristic and applied instructional model and need not forsake the integrity of critical content. Applying systemic and systematic inquiry to field-based problems of practice will enable an and/both approach to practice and scholarship; their integration, coupled with complexity perspective, grounds the doctoral student in another CPED principle: a "professional knowledge base that integrates both practical and research knowledge" (2009, para. 8).

Inquiry Cycles

Preserving the integrity of research knowledge in problems of practice relies upon a disciplined inquiry cycle that incorporates a wicked problem, reframing, theory development and evidence prediction, systematic inquiry and complexity analysis, evidence collection, and narrative reflection. Drawing on Copland's (2003) cycles of inquiry, Figure 2 illustrates the positioning of each of these elements, also described below.

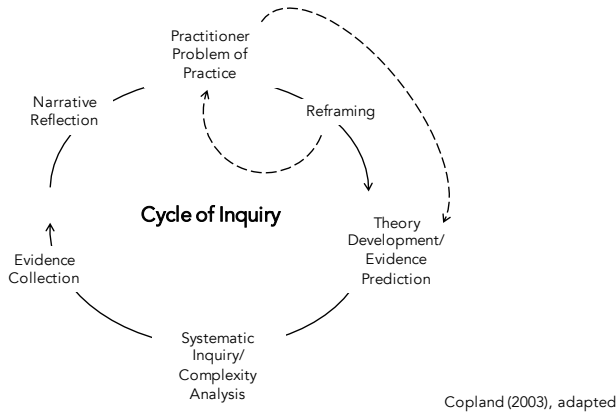


Figure 2. Cycle of inquiry with embedded practitioner problem of practice. Adapted from “Leadership of inquiry: Building and sustaining capacity for school improvement” by M. Copland, 2003, *Educational Policy and Analysis*, 25(4), 375-396. Adapted with permission.

Practitioner Problem of Practice. Establishing a problem of practice for a cycle of inquiry is not essentially different from crafting one’s dissertation research question, except that a problem of practice suggests a smaller research cycle, is grounded in a current or prior experience of the student, and establishes a point of inquiry into one or more critical content areas. At Fielding Graduate University, doctoral students are encouraged to use their dissertation research questions as the context for most, if not all, of their pre-dissertation coursework. This enables students to tailor the ways in which they consider new content to an area of primary interest. Regardless of where the dissertation research begins in an institution’s curriculum model, a cycle of inquiry might be used to ensure relevance, practitioner field experience, and complexity analysis into all content areas. Questions that might orient a practitioner problem of practice include, “What specific problem or set of problems am I trying to resolve related to equity, ethics, or social justice?” and “How is this urgent, current, and personal?” These problems of practice should incorporate aspects of wicked problems, meaning that they are thorny problems that have been around for a while and for which there are not ready answers. In other words, they are complex, with multiple variables and incomplete or contradictory knowledge.

Reframing. Gaining clarity around a problem of practice is an essential first step toward legitimate inquiry—but reframing one’s problem helps to ensure one is solving the right problem. Reframing also speaks to the use of “multiple frames to develop meaningful solutions,” another CPED (2009, para 8) principle. The most basic method to reframe a problem is to surface the assumptions that undergird the questions that formulated the initial problem statement. These assumptions become the first variables to apply in how the problem is understood and begin to surface associated complexity. In his discussion of reframing, Wedell-Weddellsborg (2017) warns against a propensity for a myopic view and suggests adding external perspective through conversation with those not familiar with the problem, categorization exercises, and contextual consideration. Reframing brings double loop learning (Argyris, 1991) to the cycle, incorporating systematic metacognitive habits of mind and a push to

probe more deeply. Reframing assures the student/practitioner that he or she is investigating the real issue at hand.

Theory Development/Evidence Prediction. With a solid and more complex problem of practice in place to guide inquiry, this next phase is really a planning stage to determine the exact nature of the inquiry. This might involve formulating a hypothesis and steps to prove or disprove preliminary ideas, or determining a primary inductive or deductive approach. Theory development also includes justification for the particular method of inquiry using a simple “If, Then” formulation: *If I do ...; Then I will know or understand ...*. For doctoral students early in their career, this is an opportunity to work in partnership with instructors to understand the varied manifestations of inquiry itself and more about scholarly research methods in the context of this particular inquiry cycle.

Also important in this phase is a prediction of evidence that will convince the student/practitioner that any conclusions drawn are valid. While it is likely that the cycle will generate additional forms of evidence, the prediction phase orients the initial investigation and establishes a disciplined approach to systematic inquiry.

Systematic Inquiry/Complexity Analysis. As the student moves into systematic inquiry, deliberate connections to the practitioner’s field experience that orient the problem of practice are critical. This can be supported through an initial complexity analysis that evolves as more variables are discovered. A complexity analysis can take many forms but should include, at a minimum, a systems level model of the context in which the problem of practice is situated, one example being a causal loop analysis in order to surface the known variables. This step draws upon Snowden’s (2010) *probe-sense-respond* configuration and reinforces the emergent properties of complex systems, while surfacing opportunities to consider additional variables.

Evidence Collection. While evidence is collected at all times during the inquiry cycle, this phase marks a deliberate surfacing of all aspects of the investigation with applied analysis steps as was determined during the Theory Development phase. An important consideration, however, is the allowance of emergent theories, analytic nuance, and the absence of hard and fast conclusions. In fact, hard evidence might suggest that the inquiry was focused too narrowly or subject to influence argument with the artificial boundaries of discipline obscuring potential insight (Hayles, 1990).

Narrative Reflection. The narrative reflection phase is in reality where the majority of the learning about content and complexity takes place and it is critical to build in sufficient time and guidelines for a robust reflection and solid narration of thought that encompasses the entire inquiry cycle. Tsoukas and Hatch (2001) claim that one’s interpretation of events constitutes second-order complexity and that “the complexity we discover when we apply methods of complexity science is a function of the second order complexity we introduce by our involvement” (p. 990). In other words, we insert boundaries around data not because they exist, but because we need them for interpretation. Thus Tsoukas and Hatch (2001) argue heavily for narration as a dominant method of analysis of any complex system using Bruner’s (1986) contrasts of logico-scientific modes of thinking with a more meaning-centered narrative approach to draw upon the richness of field-based practitioner experiences. The expectation of any inquiry cycle is that the narrative concludes with deeper questions illuminating new layers of complexity from which to launch a new cycle.

CRITICAL AND RECIPROCAL LEARNING OPPORTUNITIES: THE CASE FOR THE ADAPTIVE INSTITUTION

Placing practitioner problems of practice as a central instructional model for the education doctorate has numerous implications for growth, many of which reach beyond the student. Institutions of higher education, those which house and guide the education doctoral student, are no less complex than socially-minded organizations in other sectors and as well suffer from the limitations imposed by decades of perspectives rooted in a more predictable past. The potential here is that students' problems of practice and, the complexity they represent, will begin to influence institutional and instructional norms as stronger reciprocal learning opportunities between students and faculty are explored. Placing the experiences of the practitioner/scholar as central to the curriculum as the primary arena to explore critical content necessarily changes the role of both the student and the instructor; they become more partners in learning and less in an expert/novice relationship.

While shifting the instructor/student role does not negate the expertise and role of a knowledgeable other in a learning relationship, it does embrace the evolutionary notion of knowledge as developmental and emergent. As well it calls for an increased level of flexibility and argues for openness to emergence as new insights around complexity begin to infiltrate institutional behaviors. The opportunity afforded here is that institutions of higher education develop increased adaptive capacity, described by Eichholz (2014) as purpose-driven, impactful, and responsive to an external environment. Whereas institutions of higher learning traditionally fall into the lower left hand quadrant of Figure 3, it is difficult to imagine how the education doctorate would fail to be enriched by an institution that embodies such values as creativity, collaboration, flexibility, and meaning. Too, an adaptive stance furthers institutional capacity to continually examine and further integrate CPED principles. What if this were that opportunity to enable an evolution that truly impacted equity, ethics, and social justice? Even a maybe holds promise for our future.

Organizational Characteristics, Influences, and Orienting Values

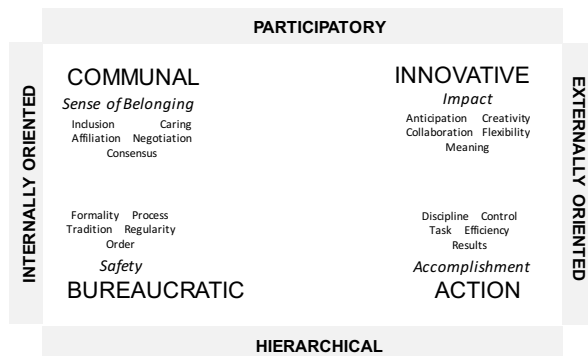


Figure 3. Driving forces and characteristics that characterize organizations. Reprinted from *Adaptive Capacity: How organizations can thrive in a changing world* (p.60), by J. C. Eichholz, 2014, Greenwich, CT: LID Publishing, Inc.

CONCLUSION: GETTING TO MAYBE

Does a complex lens around practitioner problems of practice get us to maybe? Maybe. And maybe this represents only a start. But it is a beginning and evolution, as sneaky as it is, is ongoing whether or not we make it visible to our thinking and to the actions we take daily to make the world a more just and equitable place.

This paper considered innovative ways to redesign the education doctorate in the context of CPED improvement principles by moving problems of practice into a more central role and applying a complexity lens to the thorny and wicked problems faced by those wishing to right social injustice and transform society. I argued for expanding the role of practitioner/scholar problems of practice to bring the reality of complex systems into what can be a static, isolated higher education environment. I also explored how improvement efforts must take into account increasing variables, the evolutionary nature of knowledge, and argued for the cyclical nature of inquiry as a modal pedagogical strategy, rather than an outlier.

Ultimately, this initial discussion has perhaps raised more questions than answers, to which I say "bravo." This proposal reflects the extraordinary changes taking place in all levels of education and the need to integrate *flexibility into the integrity* of the EdD degree. Improvement must embrace an and/both approach. I argue that the success of higher education and the education doctorate depends on recognizing the shifting and increasingly complex nature of the world in which we now find ourselves.

So why not maybe?

REFERENCES

Argyris, C. (1991). Teaching smart people how to learn. *Harvard Business Review*, 69(3), 99-109.

Banathy, B. H. (1985). The challenge of evolutionary learning. Paper presented at the World Assembly of the International Council on Education for Teaching (32nd, Vancouver, British Columbia, Canada, July 22-26, 1985).

Berger, J. G. & Johnson, K. (2015). *Simple habits for complex times: Powerful practices for leaders*. Stanford, CA: Stanford University Press.

Bruner, J. (1986). *Actual minds, possible worlds*. Cambridge, MA: Harvard University Press.

Carnegie Project on the Education Doctorate (CPED) (2009, October). *Working Principles for the Professional Practice Doctorate in Education*, p. 1. Retrieved from <http://www.cpedinitiative.org/page/AboutUs>

Conklin, J. (2006). *Dialogue mapping: Building shared understanding of wicked problems*. West Sussex, England: John Wiley & Sons, Ltd.

Copland, M. (2003). Leadership of inquiry: Building and sustaining capacity for school improvement. *Educational Policy and Analysis*, 25(4), 375-396.

Eichholz, J. C. (2014). *Adaptive capacity: How organizations can thrive in a changing world*. Greenwich, CT: LID Publishing, Inc.

Four Arrows. (2017). Four ways to expand the foundation for CPED's social justice framework. *Impacting Education: Journal on Transforming Professional Practice*, 2(1), 28-32.

Hayles, N. K. (1990). *Chaos bound: Orderly disorder in contemporary literature and science*. Ithaca, NY: Cornell University Press.

Heifetz, R. A., Linsky, M., & Grashow, A. (2009). *The practice of adaptive leadership: Tools and tactics for changing your organization and the world*. Boston, MA: Cambridge Leadership Associates.

Heron, J. & Reason, P. (1997). A participatory inquiry paradigm. *Qualitative Inquiry*, 3(3), 274-294.

Kochhar-Bryant, C.A. (2017). Symbiotic space: Exploring the nexus of rigor, problems of practice and implementation. *Impacting Education: Journal on Transforming Professional Practice*, 2(1), 6-14.



- Laszlo, A. (2003). Evolutionary systems design: A praxis for sustainable development. *Organizational Transformation & Social Change*, 2003. 1(1), 29-46.
- Liu, E. (2011). *What is the average age of PhD graduates by discipline*. Retrieved from <https://www.quora.com/What-is-the-average-age-of-PhD-graduates-by-discipline>.
- Lupinacci, J. J. (2017). Addressing 21st Century challenges in education: An ecocritical conceptual framework toward an ecotistical leadership in education. *Impacting Education: Journal on Transforming Professional Practice*, 2(1), 20-27.
- McChrystal, S., Collins, T., Silverman, D., Fussell, C.. (2015). *Team of teams: New rules of engagement for a complex world*. New York, NY: Penguin Publishing Group.
- Perry, J. A., (Ed.) (2016). *The EdD and the scholarly practitioner: The CPED path*. Charlotte, NC: Information Age Publishing.
- Peter, L. J. (n.d.). Laurence J. Peter Quotes. Retrieved from <https://www.brainyquote.com/quotes/quotes/l/laurencej201742.html>
- Pew Research Center. (2015). *Gay marriage around the world*. Retrieved from <http://www.pewforum.org/2015/06/26/gay-marriage-around-the-world-2013/>
- Sanger, D. E., Chan, S., & Scott, M. (2017, May 14). Ransomware's aftershocks feared as U.S. warns of complexity. *The New York Times*. Retrieved from <http://www.nytimes.com>
- Sargut, G. & McGrath, R. (2011). Learning to live with complexity. *Harvard Business Review*, Retrieved from <https://hbr.org/2011/09/learning-to-live-with-complexity>
- Snowden, D. (2010). *Cognitive Edge*. Retrieved from <http://cognitive-edge.com/videos/cynefin-framework-introduction/>
- Schilling, D. R. (2013). Knowledge doubling every 12 months, soon to be every 12 hours. *Industry Tap Into News*. Retrieved from <http://www.industrytap.com/knowledge-doubling-every-12-months-soon-to-be-every-12-hours/3950>
- Tsoukas, H. & Hatch, M. J. (2001). Complex thinking, complex practice: The case for a narrative approach to organizational complexity. *Human Relations*. 54(8), 979-1013.
- Wedell-Weddellsborg, T. (2017). Are you solving the right problems? *Harvard Business Review*. Retrieved from <https://hbr.org/2017/01/are-you-solving-the-right-problems>