2019

Exploring Resistance to Change and Intolerance to Ambiguity in Higher Education Institutions

Exploring Resistance to Change and Intolerance to Ambiguity in Higher Education Institutions

Keywords

resistance, intolerance of ambiguity, mindfulness, change Introduction

Exploring Resistance to Change and Intolerance to Ambiguity in Higher Education Institutions

Brian Dunican *President, Center for Innovation and Influence, Florence, Kentucky*

Christopher A. Gearin *Former President, Hickey College, St. Louis, Missouri*

Tony Norman *Associate Dean for Retention, Persistence, and Degree Completion, Western Kentucky University*

Abstract

The current environment of higher education is one of constant change as institutions compete for students and additional revenue. Faculty and staff are under great pressure to deliver better production and student outcomes, and many exhibit behaviors of resistance while being forced to navigate change processes. This quantitative study used a 51-question survey to collect the ratings of 38 higher education administrators, faculty, and staff regarding their tolerance of ambiguity, resistance to change, and level of mindfulness. The study first explored demographic differences on ratings in each area. It then examined strengths of the relationships among these constructs, as well as whether tolerance of ambiguity and mindfulness are predictors of resistance to change. Findings included large to weak, yet significant, relationships among all constructs. Furthermore, participants' tolerance of ambiguity and mindfulness were predictors of their resistance to change.

Introduction and Background

Due to an uncertain future, external scrutiny, and increased financial pressures, the emotional stress within higher education institutions is enormous. Change is a way of life as university stakeholders struggle to keep abreast of the latest technologies, methodologies, and competitive advancements. Leaders are faced with unsustainable financial models, tasked with rebuilding and transforming their institutions, and often forced to face situations analogous to driving down roads while building those same roads. Administrators, staff, and faculty are tasked with making it all work within an increasingly faster-paced and efficient environment. The behavioral constructs of the individual reaction to change is an essential piece of change success.

Bolman and Gallos (2011) described colleges and universities as complex institutions populated by a hodgepodge of divergent missions at various stages of crisis, innovation, or development. Incoming academic leaders struggle to interpret their new environment, yet their success at deciphering ambiguity is essential in order to make decisions on what to change. Institutions are full of conflicting goals within their most essential of missions (i.e., teaching versus research). Administrators, faculty, and staff struggle to comprehend and navigate the ingrained governance and inertial processes (Bolman & Gallos, 2011). Power structures exist within higher education institutions and can have an effect on the management of change initiatives. The structures have layers, and persons within the layers can negatively or positively affect the interpretation of the change initiative through dialogue, perhaps leading to resistance (Deneen & Boud, 2014; Knight & Trowler, 2000).

Wilson (2013) described higher education institutions as becoming more homogenous due to competition, causing imitation and resulting in less diversity between institutions. However, higher education also is changing rapidly to demonstrate differentiation to its student consumers, becoming unrecognizable to its appearance from only a few decades ago. Students are more mobile than ever, traveling internationally and reducing great distances through the use of technology, thus increasing institutional and educational delivery choices. The traditional student demographic is shifting, and more students are working and going to school at the same time. Faculty tenure is slowly disappearing, and use of adjuncts is increasing. Pressure to survive as a college mounts for faculty and staff to demonstrate value and deliver an attractive product to entice students to enroll (Staley & Trinkle, 2011). The so-called higher education system has evolved drastically, and its inhabitants live in an environment of constant change.

Attitudes and Resistance to Change

Kurt Lewin, a social scientist, conducted research concerning the balance of opposing forces of change (Jex & Britt, 2008). Lewin (1951) introduced the three-step change model: (1) Unfreezing the status quo, (2) Finding a new equilibrium, and (3) Refreezing the behavior. Though simple, this model has been the foundation for many theories of change. The process of unfreezing behaviors is necessary to overcome ingrained habits, resistance to changes, and pressures from social conformities. The research summarizes three steps for assisting with unfreezing the status quo. First, the driving forces must be increased to overcome existing behaviors. The forces may derive from several formats such as heightened awareness, changes in environments, pressures from outside influences, or a combination of the three. The second step involves decreasing the resisting forces that allow the existing behaviors to persist. Decreasing resisting forces can be leveraged through emotional reasoning, informative knowledge, or influences from trusted sources. The third step is a combination of steps one and two, which describes creating motivation through trust and discovering the realization for the need for change. In addition, it is imperative that individuals accept some of the reasons for the change in order to overpower the resistance.

It is human nature for people to become set in their ways over time. Sydow, Schreyogg, and Koch (2009) reexamined studies on institutional reactions to technological advances and concluded there are benefits to organizational inertia, but it also is a paradox. The very systems and processes that become built into organizations over time to protect the operations and provide stability can threaten necessary changes.

Most literature has described resistance to change as a natural process taking place in the human condition due to uncertainty and fear (Connor, 1992; Kotter, 1995). Piderit (2000) argued resistance to change could be lessened if uncertainty and fear are reduced. Leaders often place blame on employees instead of personally taking responsibility for failed change initiatives (Kotter, Schlesinger, & Sathe, 1986). According to Smollan (2011), stakeholders at all levels resist change, not just non-managerial employees. Alternatively, resistance and conflict often are considered necessary tools in the business world to strengthen decisions. This view was confirmed in a qualitative study of 98 CEOs and 21 top business leaders that revealed the quality of decisions is improved by functional conflict (Amason, 1996). Kezar (2014) suggested the most common causes of resistance are due to *a lack of trust in leadership*, lack of belief or understanding of the idea on which the change is based, or developed cynicism due to a history of other failed changes. Gearin (2017) suggested new higher education leaders actually have caused greater resistant behavior in employees; staff intolerance for ambiguity grew while the new presidents learned their roles.

Mindfulness

Mindfulness has been defined as an open mind enabling the individual to perceive differences among similar subjects and similarities among different subjects (Langer, 1993). Langer (1997) later added three characteristics of mindfulness: (a) creating new categories, (b) being open to new knowledge, and (c) possessing an awareness of more than one perspective. According to Dane (2011), mindful people can separate their interpretations from biased mental shortcuts and "gut" decisions, reflectively changing them if necessary. Gärtner (2011) offered that mindful people are more likely to be thoughtful about new ideas and less allegiant to old decisions, creating new behaviors and being open to change. Weick and Sutcliffe (2006, 2007) argued mindfulness could become a collective group mentality among like-minded individuals who are more amenable to change, less susceptible to organization inertia due to their adaptive practices, and together understand the "big picture."

Intolerance of Ambiguity

Frenkel-Brunswik was one of the first to present analysis of ambiguity tolerance, defining intolerance as "the tendency to perceive ambiguous situations as sources of threat" and tolerance as "the tendency to perceive ambiguous situations as desirable" (Budner, 1962, p. 29). Budner (1962) created the Tolerance of Ambiguity scale to understand the responses of individuals toward the concept of ambiguity. Martin (1954) defined intolerance to ambiguity as individuals preferring structure and routine who are more inclined to desire predictability and consistency, and more concerned about limiting ambiguous situations. Ellsberg (1961) linked decision-making, risk tolerance, and tolerance of ambiguity, suggesting optimistic decisionmakers rely on more favorable information, ignoring other cues, whereas more risk-averse individuals make decisions by focusing on the least desirable information. Ellsberg's description follows Frenkel-Brunswik (1949), who described intolerance of ambiguity as a personality variable and found individuals intolerant to ambiguity reject and reduce "ambiguous cognitive patterns" (p. 140) in favor of certainty and the more familiar.

Frone (1990) found individuals with a high intolerance for ambiguity experience greater stress in occupational roles where ambiguity is high, suggesting management should develop programs to counteract the levels of ambiguity. Additionally, managers should be trained to possess a level of awareness on tolerance of ambiguity, and the personality variable of ambiguity tolerance should be considered during the hiring process so individuals are best matched to a role in line with their tolerance level.

Rationale for the Study

The current study nearly replicates a similar study (Dunican & Keaster, 2015) using the same three instruments described in the following section to gather data from participants who were employees at several industries in the manufacturing sector in Kentucky. Our study explored similar questions and relationships within the higher education context. As discussed earlier, most higher education institutions are facing tremendous financial pressures that threaten their continued existence. In a recent qualitative study of new college presidents, all 11 leaders described their institution's financial problems as moderate to severe (Gearin, 2017). Higher education leaders are constantly instituting changes in search of solutions, leaving their employees to experience significant ambiguity about the future. According to Kezar (2014), change failure rates are estimated to be as high as 70%. Because of the uncertain nature of these environments, we attempted to understand whether higher levels of mindfulness and tolerance of ambiguity in higher education employees might predict greater levels of tolerance toward change and, thus, might result in lower levels of resistance. As will be seen, the results in terms of relationships among instruments are similar to earlier studies. Additionally, this study is similar in scope (and results) to Oreg's study (2003), which we report in the discussion section.

Methodology

In this quantitative, non-experimental study, data were collected utilizing three instruments: Budner's (1962) Tolerance of Ambiguity Scale, Oreg's (2003) Resistance to Change Scale, and the Langer Mindfulness Scale (Pirson, Langer, Bodner, & Zilcha, 2012), to answer four essential research questions regarding *staff* and *faculty* at higher education institutions:

1. Is there a relationship between their tolerance of ambiguity and their resistance to change?

2. Is there a relationship between their level of mindfulness and resistance to change?

3. Is there a relationship between their tolerance of ambiguity and their level of mindfulness?

4. Are participants' combined reported tolerance of ambiguity and level of mindfulness a predictor of their resistance to change?

Because demographic information also was collected on the survey, before ascertaining relationships among the instruments we first explored whether any of these revealed differences in self-ratings on the instruments. For Research Questions 1-3, relationships between participant responses on each instrument (and in some cases subscales) were computed through the use of bivariate correlations. Although significant relationships between and among these constructs were noted, we followed Cohen's (1988) convention to report the strengths of coefficients. Values between 0.10 and 0.29 were considered small or weak, those between 0.30 and 0.49 medium or moderate, and values between 0.50 and 1.0 were considered large or strong. For Research Question 4, a multiple regression analysis was conducted to explore the combined strength of participants' responses related to tolerance of ambiguity and level of mindfulness as a predictor of their resistance to change.

Instruments

Tolerance of Ambiguity Scale. Budner's (1962) Tolerance of Ambiguity (TOA) scale contains three subscales: novelty, complexity, and insolubility, adding more specific detail within the ambiguity paradigm; however, only the overall TOA mean was used for analysis in this study. The scale contains 16 items with ratings from 1 to 7, with 1 representing a strong disagreement or a greater tolerance of ambiguity. Thus, higher scores indicated a greater intolerance of ambiguity. The Cronbach alpha based on participants in this study was .58, not particularly strong but similar to results seen by Dunican and Keaster (2015).

Resistance to Change Scale. Oreg (2003) created the Resistance to Change (RTC) scale and its four subscales of routine seeking, emotional reaction, short-term focus, and cognitive rigidity. However, only the overall RTC mean was used for analysis in this study. The scale contains 17 items with ratings of 1 to 6, with 1 indicating a lower level of resistance and higher scores indicating higher resistance to change. The Cronbach alphas for the RTC mean scores and subscales based on participants in this study ranged from .67 to .77.

Langer Mindfulness Scale. The Pirson et al. (2012) Langer Mindfulness Scale (LMS) contains 14 items and assesses three subscales of mindfulness: novelty seeking, engagement, and novelty producing. However, only the overall LMS mean was used for analysis in this study. The 7-point Likert scale ranges from 1 to 7, with 1 indicating strongly disagree and 7 as strongly agree. Higher scale scores indicated greater levels of awareness and thinking. The Cronbach alphas for the LMS mean scores and subscales based on participants in this study ranged from .65 to .85.

Participants

The participants for this study were faculty, staff, and administrators self-identifying as working full time at U.S. higher education institutions and who volunteered to participate in the survey. A total of 38 participants completed the electronic survey designed to capture complete responses. Participants could not proceed through the survey unless all questions were answered. Three did not complete the survey, and their responses were excluded in these results. Participants were reached through a process of snowball sampling, which was used to access individuals from all levels and within a variety of higher education settings. The quantitative survey was sent to known participants who had the option of sending the surveys to other individuals. Snowball sampling has been criticized due to the potential for selection bias, which could limit the validity of the sample (Kaplan, Korf, & Sterk, 1987). Another critique of snowball sampling methods is that samples are not random but dependent on the choices of the initial respondents (Griffiths, Gossop, Powis, & Strang, 1993). According to Van Meter (1990), the selection bias issue can be addressed in part through a large sample size, which is not the case here, or through the replication of results. The authors argue that the study is validated by being a near replication (with similar results) of a previous study (Dunican & Keaster, 2015) in a different venue, as well as by its similar findings to Oreg's (2003) study in the same higher education venue.

Results

Table 1 shows demographic information of respondents: gender, education, number of years at the institution, and number of direct reports for the 38 participants. Other demographics collected from participants included age, which ranged from 28 to 65 years, and ethnicity, with 92% (34) of participants identifying as Caucasian and 8% (4) as from other ethnic backgrounds.

Table 1

Demographic Information of Participating Higher Education Personnel

Variable	Level	n	%
Gender	Male	11	28.95
	Female	27	71.05
Education	Four-year College Degree	4	10.53
	Master's Degree or higher	34	89.47
Years at Institution	0 to 4 years	8	21.05
	5 to 10 years	17	44.74
	11 to 20 years	9	23.68
	21 years or more	4	10.53
Direct Reports	0 Direct Reports	8	21.05
	< or = 9 Direct Reports	22	57.90
	> 10 Direct Reports	8	21.05

Note. $N = 38$.

Because sufficient gender representation was noted within participants, Table 2 provides descriptive statistics on scores for each instrument by gender and overall. As can be seen, both males and females rated themselves similarly across each construct. TOA scores indicate an average response to needing more information when presented with unclear instructions. Likewise, RTC scores reflect an average response on resistance to change. Overall mindfulness (LMS) scores are above average, which suggests participants perceive new information as opportunities to learn.

Table 2

Descriptive Statistics on Instrument Scores (By Gender and Overall)

Participants	TOA Mean *(SD)*	RTC Mean *(SD)*	LMS Mean *(SD)*
Female	3.38 (0.57)	3.00 (0.55)	5.75 (0.84)
Male	3.19 (0.47)	3.07 (0.59)	5.94 (0.63)
Overall	3.32 (0.54)	3.02 (0.31)	5.80 (0.61)

The first research question explored the degree of the relationships between tolerance of ambiguity and resistance to change. As Table 3 shows, a strong and significant positive correlation exists, thus indicating those who scored higher on TOA (meaning a lower tolerance of ambiguity) had a greater resistance to change, and those who scored lower on TOA (thus, having greater tolerance of ambiguity) had a more positive disposition toward change.

Table 3
Correlations between Responses on TOA, RTC, and LMS

Scales	RTC Total Mean	LMS Total Mean
TOA Total Mean	.566**	-.313*
LMS Total Mean	-.563**	

*p < .05 level (two-tailed).
**p < .01 level (two-tailed)

The second research question explored the strength of the relationship between level of mindfulness and resistance to change. As Table 3 illustrates, a strong and significant negative correlation exists, thus indicating those who scored higher on LMS (meaning greater levels of awareness and thinking) were more open toward change; those who scored lower on LMS were more resistant to change.

The third research question explored the strength of the relationships between tolerance of ambiguity and level of mindfulness. Again, as seen in Table 3, the correlation value indicates a weak but significant negative relationship between tolerance of ambiguity and mindfulness. This result suggests those who scored higher on TOA (meaning a lower tolerance of ambiguity) demonstrated a lower level of mindfulness; those who scored lower on TOA (thus, having greater tolerance of ambiguity) demonstrated greater levels of awareness and thinking.

The last question explored whether the reported combined tolerance of ambiguity and level of mindfulness of higher education faculty and staff predicts their resistance to change. Because of the possible overlap in variance explained, a stepwise multiple regression analysis was conducted to predict RTC mean scores based on TOA total mean scores and LMS total mean scores. As expected, with its higher correlation to RTC, TOA entered first ($R^2 = .32$). However, LMS provided sufficiently significant ($p < .01$) additional explained variance to enter as well (Change in $R^2 = .165$). The final regression model revealed significant results at the $p < .01$ level, $F(2,35) = 16.51$, $p = 0.001$), with a final R^2 of .456 ($R = .697$). These results suggest being aware of both the tolerance of ambiguity and level of mindfulness of respondents leads to better predictions about resistance to change, rather than knowing about only one or the other independent variable.

Limitations of Study

The current research was limited to the decisions of the participants who volunteered to partake in the study; the chosen research methods; and the topics selected to illustrate the overarching topic of change, tolerance of

ambiguity, and mindfulness. The participants were from different institutions. The instruments in the study focused on the perception of individuals and their inclination (or disinclination) toward resistance to change and ambiguity in a general way, as well as their level of mindfulness. Change or fluctuation at each institution was not considered or compared, and the amount of changing that occured at each individual's institution might have been different. Knowledge of cultural and contextual factors may help in designing future studies on the identification of the socio-structural determinants of attitudes toward resistance, tolerance of ambiguity, and mindfulness and how these factors act as a hindrance toward change acceptance. Additionally, we did not define the level of change, such as first-order or second-order. The assumption made by the authors was that second-order change would provoke a stronger negative response among individuals who are more likely to resist change, but exploration of this factor is for another study.

Discussion and Conclusion

Higher education environments are complex and bursting with moments of uncertainty. Change events cause episodes of cognitive dissonance and resistance in employees struggling with low tolerance of ambiguity. Employees must be flexible and become adaptable to changing environments and demographics, internal and external influences, changes in management, shrinking budgets, and updates for new laws and governing bodies.

Overall, participants in the survey were considered moderately resistant to change ($M = 3.02$). A negative correlation was found between tolerance of ambiguity and resistance to change, indicating individuals with a high intolerance of ambiguity are more likely to be resistant to change.

The participants were similar to the extent they were in a higher education environment, although not necessarily in the same situation. This study considered working at a higher education institution as a generalized environment, rather than a group of participants facing a specific situation and reacting to it. However, it is possible the responses in our study are indicative of higher education employees in general, as testing for the original scale by Oreg (2003) of 47 higher education faculty considering their use of course websites revealed remarkably similar RTC mean and subscale mean scores to our study, as shown in Table 4.

Table 4
Comparison of Current Study to Oreg's Study (2003)

Scales	Oreg Study (N = 47)	SD	Current Study (N = 38)	SD
RTC_M	3.00	0.51	3.02	0.56
RTC_RS	2.63	0.65	2.67	0.67
RTC_ER	3.28	0.75	3.19	0.90
RTC_STF	2.77	0.79	2.80	0.80
RTC_CR	3.42	0.07	3.51	0.72

In general, institutions must consider new approaches to change in order to survive in the current higher education environment. Leaders, as change agents planning a change event, must consider the promotion of a new mindset for their employees (de Vries, Ramo, & Korotov, 2009). Consideration of the staff and faculty is of high importance, yet often is overlooked as institutional leaders seek to change and move from idea to implementation in the most expeditious manner. Successful change is more likely to occur when employees also are willing to change; knowing the underlying psychometric conditions should give pause to leaders during implementation.

It is unclear whether employees possessing intolerance for ambiguity seek positions in a less ambiguous environment. Oreg, Nevo, Metzer, Leder, and Castro (2009) found a correlation between the job types or the career chosen by individuals and the environment of change associated with the position. In the past, many higher education institutions have been perceived as representing a more secure and certain environment. This reputation is no longer fitting, and the individuals living in the current atmosphere may choose to adapt, resist, or move on. Similar to the conclusions reached by Sydow et al. (2009), higher education is faced with a paradox; the people and systems, which have sustained the inertial processes in the past, struggle with necessary adaptations due to uncertainty and fear. Reacting to resistance in a climate of ambiguity can cause difficulty, even for change initiatives necessary for institutional survival.

References

Amason, A. C. (1996). Distinguishing the effects of functional and dysfunctional conflict on strategic decision making: Resolving a paradox for top management teams. *Academy of Management Journal, 39*(1), 123-148.

Bolman, L. G., & Gallos, J. V. (2011). *Reframing academic leadership*. San Francisco, CA: Jossey-Bass.

Budner, S. (1962). Intolerance of ambiguity as a personality variable. *Journal of Personality, 30*(1), 29. doi:10.1111/1467-6494.ep8933446

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Connor, D. R. (1992). *Managing at the speed of change: How resilient managers succeed and prosper where others fail*. New York, NY: Random House.

Dane, E. (2011). Paying attention to mindfulness and its effects on task performance in the workplace. *Journal of Management, 37*, 997-1018.

de Vries, M. K., Ramo, L. G., & Korotov, K. (2009). Organizational culture, leadership, change and stress. In C. L. Cooper, J. C. Quick, & M. J. Schabracq (Eds.), *International handbook of work and health psychology* (3rd ed. pp. 411-426). doi:10.1002/9780470682357.ch18

Deneen, C., & Boud, D. (2014). Patterns of resistance in managing assessment change. *Assessment & Evaluation in Higher Education, 39*, 577-591.

Dunican, B., & Keaster, R. (2015). Acceptance of change: Exploring the relationship among psychometric constructs and employee resistance. *International Journal of the Academic Business World, 9*(2), 27.

Ellsberg, D. (1961). Risk, ambiguity, and the savage axioms. *The Quarterly Journal of Economics, 4*, 643-669.

Frenkel-Brunswik, E. (1949). Intolerance of ambiguity as an emotional and perceptual personality variable. *Journal of Personality, 18*(1), 108. doi:10.1111/1467-6494.ep8930758

Frone, M. R. (1990). Intolerance of ambiguity as a moderator of the occupational role stress-strain relationship: A meta-analysis. *Journal of Organizational Behavior, 11*, 309-320.

Gärtner, C. (2011). Putting new wine into old bottles: Mindfulness as a micro-foundation of dynamic capabilities. *Management Decision, 49*, 253-269.

Gearin, C. A. (2017). New higher education president integration: Change and resistance viewed through social power bases and a change model lens. *Journal of Higher Education Policy and Management, 39*, 559-574. doi:10.1080/1360080X.2017.1354768

Griffiths, P., Gossop, M., Powis, B., & Strang, J. (1993). Reaching hidden populations of drug users by privileged access interviewers: Methodological and practical issues, *Addiction, 88*, 1617-1626.

Jex, S. M., & Britt, T. W. (2008). *Organizational psychology: A scientist-practitioner approach*. Hoboken, NJ: J. Wiley & Sons

Kaplan, C. D., Korf, D., & Sterk, C. (1987). Temporal and social contexts of heroine-using populations: An illustration of the snowball sampling technique. *Journal of Mental and Nervous Disorders, 175*, 566-574.

Kezar, A. (2014). *How colleges change: Understanding, leading, and enacting change*. New York, NY: Routledge.

Knight, P. T., & Trowler, P. R. (2000). Department-level cultures and the improvement of learning and teaching. *Studies in Higher Education, 25*(1), 69-83. doi:10.1080/030750700116028

Kotter, J. P. (1995). Leading change: Why transformation efforts fail. *Harvard Business Review, 74*, 59-67.

Kotter, J. P., Schlesinger, L. A., & Sathe, V. (1986). *Organization: Text, cases, and readings on the management of organizational design and change* (2nd ed.). Homewood, IL: Richard D. Irwin.

Langer, E. J. (1993). A mindful education. *Educational Psychologist, 28*, 43-50.

Langer, E. J. (1997). *The power of mindful learning*. Reading, MA: Addison-Wesley.

Lewin, K. (1951). *Field theory in social science: Selected theoretical papers*. New York, NY: Harper & Row.

Martin, B. (1954). Intolerance of ambiguity in interpersonal and perceptual behavior. *Journal of Personality, 22*, 494. doi:10.1111/1467-6494.ep8930391

Oreg, S. (2003). Resistance to change: Developing an individual differences measure. *Journal of Applied Psychology, 88*, 680-693.

Oreg, S., Nevo, O., Metzer, H., Leder, N., & Castro, D. (2009). Dispositional resistance to change and occupational interests and choices. *Journal of Career Assessment, 17*, 312-323. doi:10.1177/1069072708330599

Piderit, S. K. (2000). Rethinking resistance and recognizing ambivalence: A multidimensional view of attitudes toward an organizational change. *Academy of Management Review, 25*, 783-794.

Pirson, M., Langer, E., Bodner, T., & Zilcha, S. (2012). *The development and validation of the Langer Mindfulness Scale: Enabling a socio-cognitive perspective of mindfulness in organizational contexts*. Fordham University School of Business Research Paper. doi:10.2139/ssrn.2158921

Smollan, R. K. (2011). Engaging with resistance to change. *University of Auckland Business Review, 13*(1), 12-14.

Staley, D., & Trinkle, D. (2011). The changing landscape of higher education. *Educause Review, 46*(1), 16-33.

Sydow, J., Schreyogg, G., & Koch, J. (2009). Organizational path dependence: Opening the black box. *Academy of Management Review, 34*, 689-709.

Van Meter, K. (1990). Methodological and design Issues: Techniques for assessing the representatives of snowball samples. *NIDA Research Monograph*, 31-43.

Weick, K. E., & Sutcliffe, K. M. (2006). Mindfulness and the quality of organizational attention. *Organization Science, 17*, 514-524.

Weick, K. E., & Sutcliffe, K. M. (2007). *Managing the unexpected: Resilient performance in an age of uncertainty*. San Francisco, CA: Jossey-Bass.

Wilson, H. W. (2013). Causes of homogenization. *ASHE Higher Education Report, 39*, 69-82.