

Instruction and Complexity: Enhanced Presentation Skills as Organizational Learning

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Abstract

A program to enhance business students' communication skills is designed according to principles of complexity, including bounded resource use, aggregate behavior, and networked feedback, treating the pedagogical task in terms of organizational rather than individual learning. This project seeks to understand the rules that govern students' choices with respect to professional presentations. With a clear understanding of the generalized routines and procedures that govern an agent's choices, organizational changes can be introduced to encourage more professionally appropriate presentation behaviors. Students engaged in high-stakes presentations to professional clients were interviewed and videotaped to analyze the organization's identity markers, implicit norms, and collective memory structure. Results suggest that an organizational change campaign as well as changes in the college's typical presentation assignment structure might have positive effects on the organization's presentation capacity.

Introduction

Faced with decreasing resources and rising employer expectations, common challenges for contemporary academic institutions, the University of Northern Iowa's College of Business Administration (*UNIBusiness*) maximizes communication education resources by focusing on the collective learning of the community as a whole. Recognizing human communities as complex adaptive systems (Cyphert, 2012), the college's Professional Readiness Program designs communication education in terms of organizational change (Cyphert, 2013b).

Recognizing that any intervention at the organizational level must account for the structural and social forces that drive the behavior of members, this project identifies the norms that currently guide students' collective understanding of professional presentations. A corollary project systematically identifies the gaps between employer expectations and graduates' performance across a wide range of communication and professionalism skill (Cyphert, 2013a). The results of these two research streams will guide the faculty in developing interventions that effectively foster the College's collective ability to meet employer expectations.

This paper first provides an overview of the collective learning framework, including the underlying principles of complexity as they are operationalized in a change management model. The research questions are then drawn, demonstrating concerns that are fundamentally different from those of a traditional communication curriculum. The research methodology and results are provided as section three, and some implications for the design of collective instruction conclude the paper.

Complexity as an Instructional Model

The notion of learning as a collective process reflects a growing understanding across multiple disciplines that human beings are inherently and utterly social. This is a notion that stands in stark contrast to atomistic assumptions of Western philosophy, which, since the time of Plato, has focused on the action, thought, and soul of the individual human. Although the social sciences have addressed the collective actions of individuals, even within those fields the goal has been to understand the influence of social and cultural norms *on* individual identity and behavior. As educational psychologist Lauren Resnick (1991) described it, this has left the “social and the cognitive...standing in a kind of figure-ground relationship to one another” (p. 1). Beginning with what Resnick then described as “a sea change in the fields ...concerned with human thinking and social function” (p. 3), research across disciplines challenged the ancient assumptions. Cognitive processes and social environment came to be understood as “essential aspects of one another” (p. 3) and mental processes as “socially situated” (p. 4). That is, an individual’s thought processes are not generalized mental routines, but unique responses to specific environments and situations.

Some twenty years later, the individualistic presumptions of human nature have been challenged across a wide range of disciplines. It is growing increasingly clear that human minds are socially constructed and human behavior is primarily directed toward sustainable social existence, with important implications for economics, education and business, politics and public policy, mental health, and medicine. Furthermore, advances in complexity sciences have provided a framework by which human communities can be understood as self-organizing systems (see, for example, Capra, 2002; Page, 2011; Popolo, 2011). Rather than discuss the ways in which individual choices are influenced by a social environment, it is more accurate to describe the process by which a community of individual choice-makers collectively explores and chooses sustainable meanings, processes, and structures.

Self-Organizing Foundations of a Learning Organization

A full exploration of complexity is obviously beyond the scope of this paper, but the self-organizing features of human society have been widely documented in biology (Maturana & Varela, 1980), sociobiology (Luhmann, 1989) sociology (Arrow, McGrath, & Berdahl, 2000; Sawyer, 2005), anthropology (Lansing & Downey, 2011), education (Mitchell & Sackney, 2011; Patterson, Holladay, & Eoyang, 2013), management and organizational theory (Axelrod & Cohen, 1999; Gharajedaghi, 1999; Olson & Eoyang, 2001; Shaw, 2004; Stacey, Griffin, & Shaw, 2000), and economics and political science (T. Brown, 1996; Elliot & Kiel, 1997; Harrison, 2006; McBurnett, 1996). Research in communication has also begun to examine the mechanisms involved (e.g. Barnett & Houston, 2005; W. R. Brown, 1982, 1986; Gunaratne, 2007a, 2007b; Hoffman, 2008, p. 433; Houston, 1999; Opt & Gring, 2009).

The distributed nature of decision-making within complex organizations stands in stark contrast to traditional political and bureaucratic models, and even differs dramatically from an organism

model that assumes centralized direction from a unit that functions like a brain.¹ Instead, the complex system consists of fully autonomous and radically equal decision-makers. Behavior within a complex system is not random or chaotic, neither of which would allow the self-organized emergence of organized structures. Instead, self-organizing systems exhibit key mechanisms² that lead to sustained viability, learning, and growth:

Boundaried Resource Use A complex adaptive system interacts with its environment, using energy or resources (and expelling waste) to define and sustain itself as a discrete entity within that environment. A constant flow of energy is required to maintain the organization of the system, ensure its survival, and allow order to emerge (Cilliers, 1998; Johnson, 2007). The interaction, furthermore, generates a discernable boundary—a cell membrane, the geographical boundary of the ecosystem, a definition of citizenship—that functions as the intermediary between the system and its external environment. Energy comes in and waste goes out in ways that sustain not only the system but its boundary as well (Capra, 1997). In the case of a human organization, a sustainable organizational identity is not merely named or branded by top-down fiat. It is formed and maintained through the ongoing interaction of organizational members as they use and expend resources across the organizational boundary.

Aggregate Behavior of Individuals Probably most famously, a complex system exists as an aggregate of interactive but fully autonomous agents making choices and interacting with each other according to a relatively small number of consistent, simple, local rules (Cilliers, 1998; Holland, 1995). The choices necessarily involve a competition for “some kind of limited resource” (Johnson, 2007, p. 4) with a material “payoff (or lack of it)” that provides the “feedback they need to improve their performance” (Waldorp, 1992, p. 165). There must be dynamic interaction among the agents to allow each to anticipate the potential reward of any given choice (Cilliers, 1998). Long term viability requires sufficient diversity in the anticipation of reward as well as a range of choices to insure adaptation and innovation (Holland, 1995), but as options are generally observed to be favorable, reinforcing structures emerge that guide the system as a whole toward these beneficial choices (i.e. the system, as a whole, *learns*).

Networked Feedback The mechanism of emergent order lies in a characteristic information flow: agents are linked in an interactive network of non-linear feedback loops (Capra, 1997; Cilliers, 1998; Eve, Horsfall, & Lee, 1997). Because they are in constant communication with others around them, agents continuously learn from their own and others’ past choices, adapting their current behaviors to maximize performance (Johnson, 2007). Communication is thus a fundamental requirement of complex systems, acknowledged as the crucial mechanism

¹ It should be noted that the traditional understanding of the brain as a centralized director of thought, decision-making, and behavior has now been largely discarded with the discovery that cognition involves a variety of organs and processes, but the brain as decider remains a popular, if inaccurate, model.

² There is much that is still not understood about complex systems, and it is admittedly an oversimplification to collapse all that is known into three brief principles. However, for the purposes of this pedagogical project, these guiding factors have been drawn from the research (Capra, 1997; Cilliers, 1998; Holland, 1995; Johnson, 2007; Nicolis & Prigogine, 1989; Waldorp, 1992; see Cyphert, 2012).

by which human society is self-organizing (Capra, 1997; Luhmann, 1989; Maturana & Varela, 1987).

Aligning Organizational Learning with Complexity Principles

Turning knowledge about complex systems into academic pedagogy³ presents challenges, not the least of which is the lack of a template to follow. The normal genre of course syllabus and class lesson plan offer no particular utility when students are involved with the college for several years and could remain actively involved as alumni for many more. Arbitrary divisions of learning into discrete instructional interactions have no functionality for an organization that is continuously learning. Further, instructional mechanisms that encourage students to *individually* encode, store, and express knowledge (i.e. study guides, tests, and grades) do not address their motivation or capacity for participation in the organization's *collective* learning process.

Within the past several decades, the processes of group and organizational learning have been widely studied for their utility in management practice. Learning can be defined for both individuals and groups in the same way: a process that involves encoding, storing, and timely retrieval of new knowledge. There are important distinctions, however, between "individual learning in the context of groups" and "group-level learning" (Wilson, Goodman, & Cronin, 2007, p. 1042). Individual learning can be understood as a necessary step toward collective learning, especially when the organization depends on its members to locate and gather new data or knowledge, but data that remains in a single employee's possession might be completely useless to the organization.

In contrast, group learning is defined as "an emergent property of the group exerting influence beyond the individual members involved in the original learning process" (Wilson et al., 2007, p. 1043). A group that is capable of learning functions as a "vehicle for collective decision and action" that performs according to rules determined within the boundaries of the collective (Argyris & Schön, 1996, p. 9). At the group level it is generally clear that skills are not abstract cognitive tools, but a collective "response to uncertainty based on theoretical knowledge, experience, and technique" (Shaiken, 1996, p. 284). The rules by which the new knowledge is used might be implicit, but "so long as there is continuity in the rules that govern the behavior of individual members, the organization will persist, even though some of its members may come and go" (Argyris & Schön, 1996, p. 9).

In 1991, psychologists were just realizing the need to "seek mechanisms by which people actively shape each other's knowledge and reasoning processes" (Resnick, 1991, p. 2). A quarter of a century later, the principles of complexity have begun to fill in the blanks, demonstrating the centrality of bounded resource use, aggregate behavior, and networked feedback to effective organizational learning.

No organization is able to learn without a clear identity as a goal-seeking collective. Its boundaries must be discernable, and it must self-identify as a collectively acting entity. Learning

³ The term pedagogy is used throughout this paper, although as andragogy is often distinguished from pedagogy, teaching of the organization perhaps should be similarly distinguished as *organology*.

requires that the group be attempting to do something collectively with the acquired knowledge (Hutchins, 1991), even if that goal is nothing more complicated than to survive as an entity. Within the learning organization, individuals are empowered to make autonomous choices, which only when taken together can be understood as collective action. Looking at the behavior of individual members will never allow a view of their shared cognition (Hutchins, 1991). Perhaps most significantly for pedagogical purposes, communication networks drive emergent structures for collectively encoding new information, storing that knowledge, and cuing individual members to use that knowledge effectively.

Collective learning is the hallmark of a complex system, and a great deal of management attention has gone into harnessing the principles toward a desired organizational goal or state (Armenakis & Bedeian, 1999; Carter, 2013; Jones & Brazzel, 2014). The UNIBusiness faculty thus turned to organizational change tools to provide a more appropriate instructional framework for instruction aimed at the organizational level (Cyphert, 2012). Setting aside the presumptions of semester syllabi and classroom instruction, the college now introduces a communication topic to the college as a *change campaign*. Elements include a) an envisioning narrative of the targeted skill as an element of organizational identity, b) an appropriate revision of organizational reward mechanisms to align student choices with the targeted behaviors, and c) the creation of policies, procedures, and social cues. The aim is to allow the UNIBusiness community as a whole to encode, store, and express—that is, *learn*—desirable new behaviors. None of this implies an easy or quick process. It is certainly no easier than preparing the syllabus for a new course or developing instructional material for a new unit of instruction. Each element requires a solid understanding of the organization's current practices as well as the cooperation of faculty, alumni, and administration of the College. This project represents a single step in the campaign to foster organizational learning of professional presentation skills.

Research Questions in the Development of Presentation Pedagogy

UNIBusiness majors are required to pass an oral communication course as part of the University's liberal arts requirement, and assertive, confident communication skills are practiced within the required Professional Readiness Program. Group presentations are commonly required in upper division business courses, but there is no systematic instruction with respect to professional presentations. A traditional instructional plan might offer more instruction, coaching, and skill assessment of presentations in various courses within the business curriculum—a resource-intensive plan under the best of circumstances. However, within a complex system, *performance* is influenced less by any knowledge held by individual agents than by the normative rules and expression cues they encounter as members of the community. Precious resources spent on the development of individual students' knowledge might be largely wasted without attention to the circumstances that will cause them to express that knowledge.

Needs assessment in the form of pre-testing is a common way to start curriculum development in individually framed pedagogy. Collective pedagogy begins at a very different point with attention to organization-level characteristics. Any instructional intervention will depend on the degree to which a) individuals perceive the targeted activity to be relevant to their organizational identity, b) the targeted activities are supported by the normative parameters that govern behavioral choices, and c) the organization's encoding, storage, and expression cues support the targeted behaviors.

This project sought to identify the status quo in each of these areas, creating a baseline from which faculty might then create effective interventions at the organizational level. Three research questions were developed.

Research question #1— *To what extent do graduating seniors understand presentation skill as an identifying aspect of membership in the UNIBusiness professional community?* Since there is no motivation to perform appropriately without self-identification as a member of the community, the first step of effective collective pedagogy is necessarily to insure that students understand themselves as members of the complex system. There are numerous ways to investigate this question, and it was not the primary purpose of this study. However, to the extent that the interviews provided any insights, this was recognized as an important area of investigation.

Research question #2— *What are the normative definitions, rules, and choice parameters that guide students' behavioral choices with respect to professional presentations?* Regardless of any previous instruction, conceptual understanding, or demonstrated skill level, a student's decision to perform the behaviors associated with a professional presentation are governed by the normative standards, reward mechanisms, and choice options that are salient to a student within the immediate context of a specific presentation. The primary goal of the project was to identify the decisions and choices that were being made by students when asked to present in a high-stakes, professional context.

Research question #3— *To what extent do elements of the organization's learning process support the capacity of members to engage in professional presentations?* Although some individuals might develop professional presentation skills outside the context of the organization and some students might perform professionally in a specific situation, a program that relies on the organization's encoding processes, storage mechanisms, and expression cues must insure that these structures do, in fact, support the targeted behaviors. Further research will be needed to address this question more directly, but interviews offered some insights.

Methodology and Results

In order to determine students' current norms and choice parameters with respect to professional, as opposed to classroom, presentations, we sought a context in which students would be most likely to demonstrate whatever professional identity they might have developed as business majors. Five teams of students were recruited from two senior-level business courses in MIS and Entrepreneurship. In both courses, teams were engaged in semester-long consulting projects that would be reported in a final presentation to an external client. In all cases, the audience also included the instructor and one or more guests. Three of the five audiences included classmates as well, who were welcome but required to attend each other's presentations only in the MIS course.

Students engaged in these presumably high-stakes presentations to professional clients were interviewed and videotaped to analyze the student community's implicit identity, reward mechanisms, and collective learning resources. In accordance with an approved human subjects protocol, a faculty member with no association to the course or the major interviewed students about their presentation preparation process.

Each team member provided an independent assessment of personal and team readiness for the upcoming presentation, and the team was subsequently interviewed as a group. Interviews were scheduled to accommodate students' availability, and timing ranged from 5 to 11 days prior to their presentations. After the presentation, each team was debriefed, either orally or by email, to gain the members' assessments of their teams' performances.

Although our intention was to allow subjects a wide latitude to name the definitional and normative factors that they perceived to be relevant to professional presentations, a structured set of interview questions was required by the human subjects protocol. We thus elected to frame the questions in terms of what we hoped would be generic preparation steps: content development, script preparation, slide design, and delivery preparation. While we also included an "other" category to capture any additional activities perceived by the students to be relevant, only one team offered any additional items (the preparation of props for a product demonstration). It is possible that simply offering the normal categories constrained the students' thinking to those behaviors, but the results suggest that their perceptions of professional presentation are already very strongly influenced by previous academic coursework, which focuses on the same preparation steps.

Responses were arrayed according to the generic preparation steps defined by the interview questions and then coded by the author for references or allusions to *organizational identity* and *organizational norms*.

Although data was gathered with respect to students' awareness of professional expectations, the generic preparation process, and observed outcomes, the project was not intended to be an assessment of student skills or of traditional academic instruction that students currently receive. Instead, the interviews were analyzed in terms of the organization's collective learning process.

Results for Research Question #1: To what extent do graduating seniors understand presentation skill as an identifying aspect of membership in the UNIBusiness professional community?

Although this question was not asked directly, there were numerous points at which the teams discussed their relationships with their clients. Questioning about presentation knowledge allowed students to refer to professional resources (i.e. mentors, blogs, and business publications). Students' descriptions of their prior experience with professional presentations offered a third point where professional identity could have been mentioned.

The results suggest that students are identifying as students, with only a minimal sense of identity within the larger professional community. One student noted that presentation training is provided by his employer, and two identified presentation skill as part of the professional development activities of the college, but these presentations were explicitly framed as classroom assignments with several references to instructor expectations.

There was no indication that students saw their upcoming presentations as a reflection on UNIBusiness as a whole, or that they were involved in an ongoing relationship with a business partner. One student had purchased a suit, recognizing that it would be appropriate for the presentation as well as an upcoming job interview, but there was no indication that students understood themselves to be acting as members—even apprentice members—of a professional

community. All the students had work experience, including several who had made presentations as part of their work responsibilities, but they seemed to make no particular connection between presentations and professional success.

Perhaps the most telling indicator was the degree to which students framed the presentation as a display of knowledge rather than a productive interaction with a client who had a stake in the project outcomes. Four of the five teams expressed concern or surprise regarding the discussion that ensued after their presentations.

One team realized that the presentation offered the client an opportunity to ask questions or discuss additional project elements, but this was a point of concern. One team member worried that “unrelated questions...changes, additions” would “throw us off” the formal presentation, which was being done for the class credit they understood as their primary goal. His teammate countered that they could handle the situation, since “he’s been throwing things at us at meetings all along,” but reinforced the primacy of knowledge display with his reasoning: “We did everything based on his requirements, so we should be okay.”

Three teams expressed surprise at the level of interactive discussion expected by the professional audience, with reactions that ranged from appreciation that the team “learned a good amount from those in attendance,” to a complaint that it was unlike previous contexts where “the audience is much more respectful.” This respondent also suggested that the interaction was being staged, assuming that “interruptions were intentional to try to throw us off” and thereby “simulate things we may run into in the real world.” Even the audience interaction was framed as a means to force students to display knowledge, and the professional audience was perceived as unfair and disrespectful with “many ideas running through their heads and some of them were out of our scope of the project.”

As noted above, this was not the primary research question we sought to answer with our interviews, but we nevertheless conclude that there is much work to be done to frame presentations as part of the students’ emerging professional identity, particularly in the area of seeing themselves as contributing partners in the discussion of authentic business issues.

Results for Research Question #2: What are the normative definitions, rules, and choice parameters that guide students’ behavioral choices with respect to professional presentations?

These senior-level presentations were targeted as the most likely context in which students might maximize their efforts to prepare and present at their most professional. However, as noted above, the events were consistently framed as class-required knowledge displays, and there is evidence that teams knowingly shortchanged the presentation in favor of other demands on their time and attention. Despite these limitations, some useful insights were gained.

The most obvious finding was the relatively small amount of time the students planned to spend on presentation preparation. The teams expressed a general sense of confidence that they had spent or planned to spend sufficient time to gain acceptable results, but estimates ranged from zero to 16 hours spent as a group on slide and demonstration preparation and group rehearsals, with an average of 5.8 hours. Two groups were explicit that each team member would be

preparing his or her own part of the presentation and did not plan even to discuss their coordination as a group.

While this figure seems quite low with respect to typical academic guidelines, the discussions around the teams' level of confidence were illuminating. Because the teams were presenting on semester-long projects, they were generally quite pleased with their own level of expertise and familiarity with the content of the upcoming presentation. Rehearsals, described by the students as a tool for memorizing speech content, were seen as largely unnecessary. Now "down to the wire," one team planned no practice at all because they all "had the info" and would just present it. In fact, this team spent some time reporting the confusion that results when multiple presentations are practiced simultaneously. Typically asked to make several presentations at the end of a semester, these students had learned that they are likely to mix up points and data among them. Rehearsals were seen as a source of potential confusion, rather like using flash cards to memorize terms from three similar but discrepant courses.

One team planned to create a "general outline," but there was no other mention of any aspect of audience analysis or organization of the presentation content. One team explicitly dismissed such steps as creating an outline or drafting transitions on the grounds that "it's flowing" as a result of their being so familiar with the topic, although several hours were being allocated to work out speaker locations, timing, and transitional cues.

In general, teams framed their preparation steps in terms of the creation of presentation slides. All planned to use PowerPoint. One team commented that Prezi has "jazzy effects" but PowerPoint would be "more appropriate and easier." Teams in both classes planned to supplement their slides with website demonstrations, Excel spreadsheets, or display of artifacts. The amount of time that should be devoted to the preparation of professional presentation visuals varies, of course, with a speaker's software expertise and the visual demands of the topic. In the case of the MIS students, a previously prepared slide deck would be updated, reducing the time requirements considerably. Still, there was clearly no anticipation that a slide would take more than a few minutes to prepare, allowing virtually no time for graphic design, photo manipulation, or sophisticated animation.

The second major finding was the unsurprising confirmation that students' perception of professional presentation norms is not particularly high. Outside of their surprise at the level of content-related discussion expected by the professional audience, the students reported no dissatisfaction with any specific elements of their presentations. In response to the specific post-presentation query, "Was there anything else you should have known about or done?" several students commented that more practice would have been helpful, but the better outcome was described in terms of achieving better mastery of the content and readiness to answer audience questions.

There was only one suggestion from any team that it had not fully met the organization's presentation norms with regard to structure (i.e. introduction, explicit signposts or transitions), language use (i.e. concrete, specific word choice), support (i.e. sources, explanations of reasoning), delivery (i.e. fluency, rapport), or software expertise (i.e. visual design, animation, keyboard commands). The single exception involved a student who had inadvertently increased the projected slide size by accidentally hitting Ctrl+ during the presentation and identified the cause as a lack of technical expertise.

A companion project (Cyphert, 2013a) will systematically compare professional expectations with observed student performance, but the authors found the presentations to be within the normal range of senior-level class presentations. Student delivery was generally fluent with acceptable eye-contact and vocalics. Speakers projected a professional appearance, although there was some variation in the formality of business attire. Presentations typically lacked an introduction, and while generally clearly organized, there were no signposting or transition elements beyond what could be gleaned from the slide titles. Secondary research citations were generally not expected in these project reports, but teams were often vague or incomplete in their explanations of their own analysis and conclusions. Slides were perfunctory, with limited graphics or visuals and an excessive use of bullet points. The use of websites, spreadsheets and artifacts varied widely, ranging from a highly informative website demonstration to the display of unreadable Excel spreadsheets.

Results for Research Question #3: To what extent do elements of the organization's learning process support the capacity of members to engage in professional presentations?

Although this project focused on the organization's current knowledge rather than the learning of new behaviors, some conclusions can still be drawn with respect to organizational mechanisms for encoding, storage, and retrieval of presentation knowledge.

Encoding Several students mentioned external sources of knowledge about professional presentations including a previous co-worker with "a masters in presentation skills," both informal and formal instruction at military or private sector jobs, and business speakers brought in by the UNIBusiness Professional Readiness Program or student organizations. The knowledge was utilized by these students in these teams and presumably had been shared with team members during the preparation of previous presentations as well. There was no mention of any wider obligation to make their expertise known to the organization as a whole or opportunities for doing so, suggesting that organizational encoding presently consists of nothing more than ad hoc, word of mouth diffusion from one individual mind to another.

Storage Two distinct resources were mentioned as locations where students might access the organization's knowledge of professional presentations. The most commonly cited storage retrieval process involved the observation of presentations in business courses. Most of the students had seen professionals make presentations in a work setting, but when asked to name the source of their presentation knowledge, the response was course-specific. Marketing courses, in particular, had offered students several presentation experiences, and the students reported they had learned from the practice and from watching their classmates. One student named the Professional Readiness Program as a resource for building confidence and slide development (specifically citing advice not to include too much material).

Retrieval The expectation had been that a presentation to a business client would cue students to access all the organizational knowledge available to them, leading to the highest possible performance of individual students. Several teams had declined the invitation to participate on grounds that they were already struggling with the time demands of the semester's end, however, and several participating students mentioned time constraints, both before and after the presentation. We must conclude, therefore, that a client presentation did not necessarily

cue students to maximize their presentation performance, at least in terms of time devoted to the process.

This does not negate, however, the importance of retrieval cues to trigger desired performance as much as it illustrates the interaction of retrieval cues and the retrieval process as a balance of rewards and effort. Given the salience of the course grade and the lack of authentic concern for the clients' response (i.e. there were no students applying for jobs at any of the client companies), there was little incentive to use anything but the most easily retrieved knowledge: that which was already distributed among the team members' individual memories. Only a couple of specific heuristics were cited (i.e. don't put too much material on a slide, pretend to point at the slide in order to use it to recall your next point). The easily available organizational knowledge was encoded primarily as a series of preparation steps (conduct research project, prepare slides, rehearse), which teams followed as time allowed.

Implications for the Design of Collective Instruction

Although this project represents just one step toward a robust collective pedagogy for the College, several conclusions can be drawn from the interview results. At least some perceptions of acceptable behavior, reward mechanisms for desired procedures, and resources required for professional presentations can be enhanced at the organizational level. Further, some relatively simple changes in the typical presentation assignment might have positive effects on college-wide presentation skills.

Identity There was no evidence that students see themselves as members of a professional community, at least in terms of presentation skills. In particular, they do not see themselves as members of a larger conversation about the business topics of their own presentations. This suggests that it will be worthwhile to create a narrative that includes presentation skills, including the discussion of presentation content, as a component of professionalism. The lack of any meaningful narrative might be seen as good news; there is also no evidence that students perceive themselves to be presenting as members of any sort of a non-professional (e.g. student, civic, social) community. Upon this blank slate, then, we might write the story of the professional UNIBusiness community, comprised of expert alumni coaches as well as student newcomers, able to thrive within the regional business environment by virtue of its collective presentation capacity.

Norms The aggregate behaviors observed seem to indicate decision rules that drive a) relatively little time allocated to preparation of presentations, b) very few choices related to presentation content or organization, and c) a preponderance of rules having to do with delivery (i.e. remembering the script, attire, vocalics, slide technique). The value proposition will need to be redesigned to provide individual students with greater immediate rewards for performing the targeted behaviors. This will involve both the articulation of expectations across a wider range of presentation elements and the calibration of rewards that are meaningful to students (i.e. grades, time saved).

Learning Structures The organization's current communication flow does not appear to provide any mechanisms for any aspect of the collective learning process. Currently, students are not incentivized to encode new knowledge (i.e. insights from co-workers or internship presentations) into the collective mind. The distributed memory structure consists almost

entirely of oral sharing within discrete classroom teams, with limited diffusion across the organization. Retrieval cues do not seem to exist to suggest that a presentation, even at the senior-level to authentic business clients, involves anything different from the knowledge display behaviors that are characteristic of academic life.

Faculty involved in the Professional Readiness Program have designed an organizational development campaign that includes a narrative of professional presentations, alumni involvement as expert community members, and limited opportunities for participation in the collective learning mechanisms. A successful collective pedagogy will also require the cooperation of academic faculty, especially in the design of classroom presentation activities, but relatively small changes could yield important results. Presentation descriptions could be rewritten to emphasize their professional importance as well as the role of students as pre-professional apprentices. Normative standards can be broadened to include content discussion and presentation elements beyond basic delivery skills. Perhaps most important, the presentation as knowledge display could be reframed as a practice session, allowing classroom comments to function as a debriefing exercise that solidifies the group's learning of professional presentation practices.

References

- Argyris, C., & Schön, D. A. (1996). *Organizational learning II: Theory, method and practice*. Reading, MA: Addison-Wesley.
- Armenakis, A. A., & Bedeian, A. G. (1999). Organizational change: A review of theory and research in the 1990's. *Journal of Management*, 25(3), 293-315.
- Arrow, H., McGrath, J. E., & Berdahl, J. L. (2000). *Small groups as complex systems: Formation, coordination, development, and adaptation*. Thousand Oaks: Sage.
- Axelrod, R., & Cohen, M. D. (1999). *Harnessing complexity: Organizational implications of a scientific frontier*. New York: Free Press.
- Barnett, G. A., & Houston, R. (2005). *Advances in self-organizing systems*. Cresskill, NJ: Hampton Press, Inc.
- Brown, T. (1996). Nonlinear politics. In E. Elliot & L. D. Kiel (Eds.), *Chaos theory in the social sciences* (pp. 119-137). Ann Arbor: University of Michigan Press.
- Brown, W. R. (1982). Attention and the rhetoric of social intervention. *Quarterly Journal of Speech*, 68(1), 17-27.
- Brown, W. R. (1986). Power and the rhetoric of social intervention. *Communication Monographs*, 53(2), 180-199.
- Capra, F. (1997). *The web of life: A new scientific understanding of living systems*. New York: Anchor Books, Doubleday.
- Capra, F. (2002). *The hidden connections: Integrating the biological, cognitive, and social dimensions of life into a science of sustainability*. New York, NY: Doubleday.

- Carter, L. (Ed.). (2013). *Change champion's field guide: Strategies and tools for leading change in your organization*. Somerset, NJ: John Wiley & Sons.
- Cilliers, P. (1998). *Complexity and postmodernism: Understanding complex systems*. New York: Routledge.
- Cyphert, D. (2012). *Teaching the community: Communication instruction as change management*. Paper presented at the National Communication Association Annual Convention, Orlando.
- Cyphert, D. (2013a). *Assessment in Context: Evaluating Communication Skills in Relation to Employer Expectations*. Paper presented at the National Communication Association Annual Convention, Washington, DC.
- Cyphert, D. (2013b). *Communication skills for everyone: Adopting a group learning model in a communication center*. Paper presented at the National Communication Association, Communication Centers Section, Washington, DC.
- Elliot, E., & Kiel, L. D. (1997). Nonlinear dynamics, complexity, and public policy: Use, misuse, and applicability. In R. A. Eve, S. Horsfall & M. E. Lee (Eds.), *Chaos, complexity, and sociology* (pp. 64-78). Thousand Oaks: Sage.
- Eve, R. A., Horsfall, S., & Lee, M. E. (Eds.). (1997). *Chaos, complexity, and sociology*. Thousand Oaks: Sage.
- Gharajedaghi, J. (1999). *Systems thinking: Managing chaos and complexity: A platform for designing business architecture*. Boston: Butterworth-Heinemann.
- Gunaratne, S. A. (2007a). Systems approaches and communication research: The age of entropy. *The European Journal of Communication Research*, 32(1), 79-96.
- Gunaratne, S. A. (2007b). Systems approaches and communication research: The age of entropy. *Communications-European Journal of Communication Research*, 32(1), 79-96.
- Harrison, N. E. (2006). *Complexity in world politics: Concepts and methods of a new paradigm*. Albany: State University of New York Press.
- Hoffman, R. (2008). Exploring the link between uncertainty and organizing processes: Complexity science insights for communication scholars. *Communication Theory*, 18(3), 426-447.
- Holland, J. H. (1995). *Hidden order: How adaptation builds complexity*. New York: Helix Books.
- Houston, R. (1999). Self-organizing systems theory: Historical challenges to new sciences. *Management Communication Quarterly*, 13(1), 119-134.
- Hutchins, E. (1991). The social organization of distributed cognition. In I. B. Resnick, J. M. Levine & S. D. Teasley (Eds.), *Perspectives on socially shared cognition* (pp. 283-307). Washington DC: American Psychological Association.

- Johnson, N. F. (2007). *Two's company, three is complexity*. Oxford: Oneworld Publications.
- Jones, B. B., & Brazzel, M. (Eds.). (2014). *NTL handbook of organization development and change: Principles, practices, and perspectives (2nd ed.)*: Center for Creative Leadership.
- Lansing, J. S., & Downey, S. S. D. (2011). Anthropology and complexity. In C. Hooker (Ed.), *Philosophy of complex systems* (Vol. 10, pp. 569-601). North Holland: Elsevier.
- Luhmann, N. (1989). *Ecological communication* (J. J. Bednarz, Trans.). Chicago: U. of Chicago Press.
- Maturana, H. R., & Varela, F. J. (1980). *Autopoiesis and cognition: The realization of the living*. Dordrecht, The Netherlands: D. Reidel.
- Maturana, H. R., & Varela, F. J. (1987). *The tree of knowledge: The biological roots of human understanding*. Boston: New Science Library.
- McBurnett, M. (1996). Complexity in the evolution of public opinion. In E. Elliot & L. D. Kiel (Eds.), *Chaos theory in the social sciences* (pp. 165-196). Ann Arbor: University of Michigan Press.
- Mitchell, C., & Sackney, L. (2011). *Profound Improvement: Building learning-community capacity from living systems principles (2nd ed.)*. London, UK: Taylor & Francis.
- Nicolis, G., & Prigogine, I. (1989). *Exploring Complexity: An Introduction*. New York: Freeman.
- Olson, E. E., & Eoyang, G. H. (2001). *Facilitating organizational change: Lessons from complexity science*. San Francisco: Jossey Bass-Pfeiffer.
- Opt, S. K., & Gring, M. A. (2009). *The rhetoric of social intervention: An introduction*. Los Angeles: Sage.
- Page, S. E. (2011). *Primers in complex systems: Diversity and complexity*. Princeton, NJ: Princeton University Press.
- Patterson, L., Holladay, R., & Eoyang, G. (2013). *Radical rules for schools: Adaptive action for complex change*. Circle Pines, MN: Human Systems Dynamics Institute Press.
- Popolo, D. (2011). *New science of international relations: Complexity, modernity and the Kosovo conflict*. Farnham, Great Britain: Ashgate Publishing.
- Resnick, L. B. (1991). Shared cognition: Thinking as social practice. In L. B. Resnick, J. M. Levine & S. D. Teasley (Eds.), *Perspectives on socially shared cognition* (pp. 1-20). Washington DC: American Psychological Association.
- Sawyer, R. K. (2005). *Social emergence: Societies as complex systems*. New York: Cambridge University Press.

- Shaiken, H. (1996). Experience and the collective nature of skill. In Y. Engeström & D. Middleton (Eds.), *Cognition and communication at work* (pp. 279-295). Cambridge: Cambridge University Press.
- Shaw, P. (2004). *Changing conversations in organizations: A complexity approach to change*. New York: Routledge.
- Stacey, R. D., Griffin, D., & Shaw, P. (2000). *Complexity and management: Fad or radical challenge to systems thinking?* London: Routledge.
- Waldorp, M. M. (1992). *Complexity: The emerging science at the edge of order and chaos*. New York: Simon & Schuster.
- Wilson, J. M., Goodman, P. S., & Cronin, M. A. (2007). Group learning. *Academy of Management Review*, 32(4), 1041-1059.

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